



Products, services and activities
of the Geodetic and Cartographic Institute Bratislava

SLOVAK REAL-TIME POSITIONING SERVICE

Slovak real-time positioning service allows its users to navigate or precisely determine the position of objects and phenomena by using global navigation satellite systems.

The service enables its users to work in real-time or in post-processing mode in binding geodetic reference systems ETRS89 and S-JTSK with the accuracy ranging from decimetres to millimetres.

SKPOS is available nonstop with a 99% level of availability throughout all Slovakia in open standardized formats via an Internet connection.



SKPOS[®]

SKPOS_dm

differential corrections
for code measurements

SKPOS_cm

corrections for
phase measurements

SKPOS_mm

code and phase
postprocessing

DATA ON GEODETIC CONTROL POINTS

Passive geodetic control is formed by surveying points belonging to one of the specialized state geodetic networks the parameters of which are determined in at least one of the binding geodetic reference systems.

Network	Reference system	EPSG code	Basic Network Parameters
National Spatial Network (ŠPS)	ETRS89 (ETRF2000) S-JTSK (JTSK03)	EPSG::4937 EPSG::8352	Longitude, Latitude and Height φ, λ, h Plane coordinates X,Y
National Levelling Network (ŠNS)	Bpv (Bpv57) EVRS (EVRF2007)	EPSG::8357 EPSG::5621	Normal height H_{Bpv} Normal height H_{EVRS}
National Gravimetric Network (ŠGS)	S-Gr (S-Gr95)	-	Gravity acceleration g
National Trigonometric Network (ŠTS)	S-JTSK (JTSK)	EPSG::5513	Plane coordinates X,Y



REAL ESTATE CADASTRE DATA

Real estate cadastre (KN) data is part of the Information system of geodesy, cartography and cadastre and the Central government information system as well.

The real estate cadastre consists of a descriptive data file (SPI KN) and a geodetic data file (SGI KN).

Geodetic and Cartographic Institute Bratislava is in the area of KN responsible for provision of electronic services from the data of its central databases.

Products

Vector cadastral map

Vector map of determined documentation

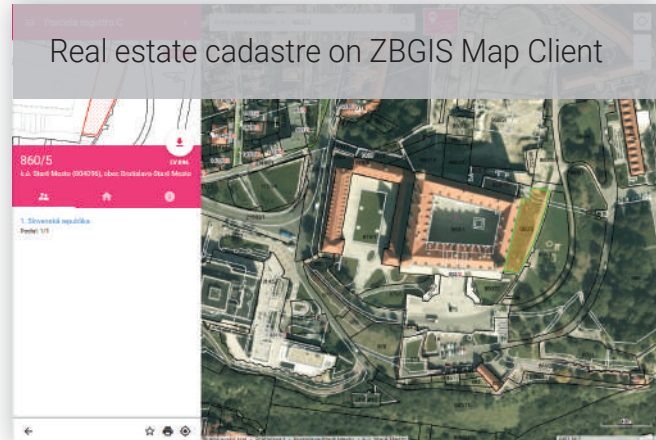
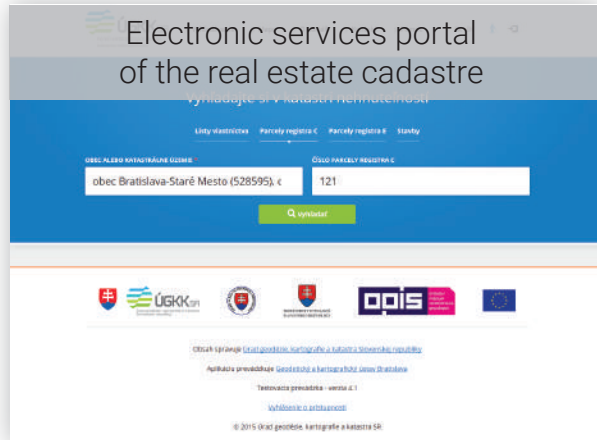
Data on classification of soil-ecological units

Data from the descriptive data file

Cadastral raster map



ELECTRONIC SERVICES OF REAL ESTATE CADASTRE



BASIC DATABASE FOR GEOGRAPHIC INFORMATION SYSTEM (ZBGIS®)

ZBGIS is a digital model of the real world with a precisely defined level of detail and abstraction through the ZBGIS Feature Catalogue. ZBGIS contains spatial objects/data recorded in three dimensions with a relevant descriptive component (attribute) divided according to the thematic layer.

- Anthropogenic elements–culture
- Vegetation
- Hydrography
- Surface
- Boundaries
- Altimetry
- Aerial-navigation information



lesy, lúky, polia, močiare	Biela hora
vrch, skála	ČERNIKOVÁ
ostatné objekty	Repiská
aleja, cesta, chodník	Stará Užhorodská cesta
pohoria, chrbáty, údolia	VAPENÁ DOLINA
kopce, pahorky, rokle	ok. nem. žel. st. zim. staeš. hor. san.
skratky, názvy objektov a areálov pre veľtržné a komerčné účely	Ocú. Múú PD Krivé
popis vód	VÁH, Topľa

Geographical names contain binding names for non-residential geographic objects and specific residential objects.



ZBGIS® MAP CLIENT

ZBGIS Map Client is a web map application which enables interactive work with ZBGIS data, digital data of real estate cadastre, address register, geodetic control points, archive raster maps, digital terrain model, orthophoto mosaic and geographical names. It is a complex tool for viewing, searching and analysing spatial data and map services of ZBGIS and ESKN.

ZBGIS Map Client contains these themes:



Base Map



Real Estate Cadastre



Terrain



Geodetic Control



Archive

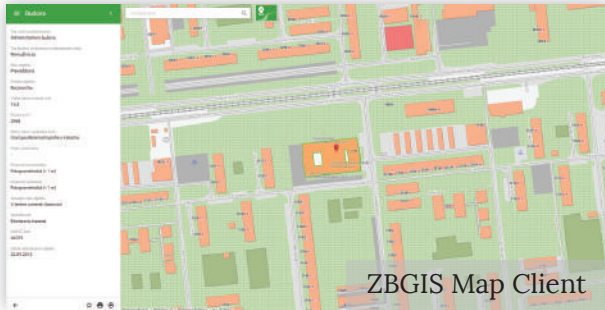


Geographical Names

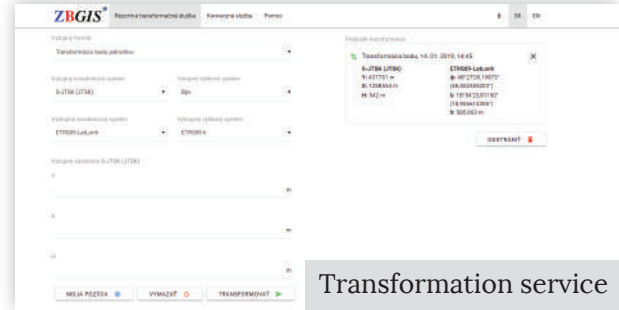
WEB APPLICATIONS AND MAP SERVICES

All spatial data is available through electronic services. The data is processed using digital cartography to ensure image clarity and legibility. The Geoportal provides access to map services and freely accessible web applications:

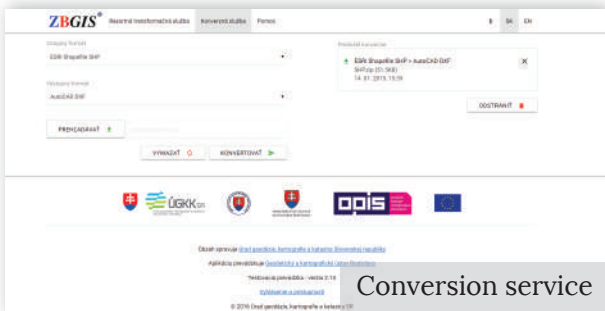
- ZBGIS Map Client – searching, measuring, drawing, 3D representation, feature information, adding and exporting data, print outputs, GNSS localization.
- Transformation service – performs authorized transformation of point coordinates between selected geodetic reference systems.
- Conversion service – is used to convert spatial data between selected formats.
- Web map services – provided according to the OGC standards (WMS, WMTS, WFS, WCS).



ZBGIS Map Client



Transformation service



Conversion service

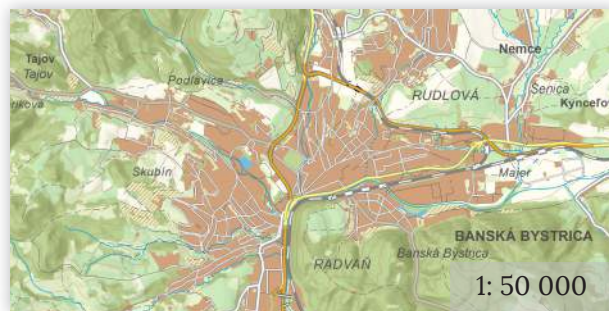


Web map services (OGC)

NATIONAL MAP SERIES - ZBGIS® RASTERS

- ZBGIS Raster represents data export from the ZBGIS information system databases in a raster form and in the S-JTSK[JTSK03] coordinate reference system(georeferenced TIFF + TFW files).
- ZBGIS Raster seamlessly covers the territory of Slovakia in 1:5 000, 1:10 000, 1:25 000, 1:50 000 scales.
- Vector data is displayed using a cartographic representation.
- Information about the representation of vector features is provided by the ZBGIS Portrayal Catalogue which is based on the current ZBGIS Feature Catalogue.
- Map sheet layout was designed according to the new cartographic model for 1:10 000 scale. Other layouts were derived from this scale.

Scale	Content	Quantity of sheets
1:5 000	data from the categories : anthropogenic elements, hydrography, altimetry, surface, vegetation, boundaries and geographical names	10 201
1:10 000	data from the categories: anthropogenic elements, hydrography, altimetry, surface, vegetation, boundaries and reduced geographical names	2 635
1:25 000	data from the categories: anthropogenic elements, hydrography, altimetry, surface, vegetation, boundaries and reduced geographical names in combination with generalized settlement data	463
1:50 000	generalized data and reduced geographical names	132



PRODUCTS OF AIRBORNE LASER SCANNING

Digital terrain model (DTM) is a digital elevation model that represents the natural earth's surface without objects lying on it (without vegetation, buildings, bridge structures, etc.).

Digital surface model (DSM) is a digital elevation model that represents the earth's surface including the top parts of all objects located on it (vegetation, roofs of buildings, water bodies, etc.).

The new DMR5.0 and DMP1.0 are generated from point clouds obtained by airborne laser scanning and are provided in raster form (ESRI GRID, TIFF+TFW) with a spatial resolution of 1 m.

The classified point cloud is provided in LAS and LAZ formats.



ORTHOPHOTO MOSAIC

The orthophoto mosaic is a seamless raster of colour ortho-rectified aerial survey images. The authors of the orthophoto mosaic are the National Forest Centre Zvolen and Geodetic and Cartographic Institute Bratislava.



ARCHIVE SERVICES

The Central Archive of Geodesy and Cartography is a special documentation department of the Geodesy, Cartography and Cadastre Authority of the Slovak Republic. It collects, preserves, protects and makes available archive documentation related to maps in our territory dating from the end of the 18th century until the present day.



PRODUCTS AND SERVICES

More information on all products and services provided and also the terms and conditions of their use can be found on the Geoportál or in the price list of products and services that is available on the Geodetic and Cartographic Institute Bratislava website.

Customer service

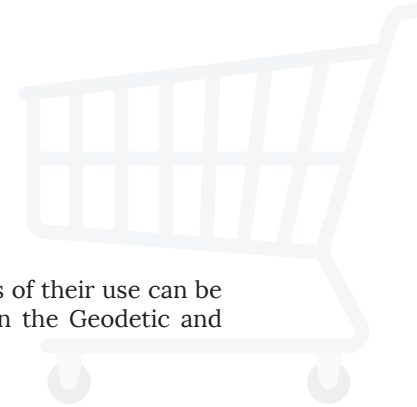
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Web portals

Geoportál
Products and services portal
ZBGIS Map Client
SKPOS portal
ESKN portal

<https://geoportal.sk>
<https://om.skgeodesy.sk>
<https://zbgis.skgeodesy.sk>
<https://skpos.gku.sk>
<https://kataster.skgeodesy.sk>



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