REAL ESTATE CADASTRE IN SLOVAKIA

Erik Ondrejíčka

Joint Conference of PCC, Eurogeographics-CLRKEN and EULIS
16.-18. November 2016 in Bratislava, Slovak Republic

ÚGKK SR, November 2016
Real Estate Cadastre in Slovak Republic

- Real estate cadastre in the Slovak Republic is in terms of its definition a geodetic determination and description of properties. Naturally, it also contains information on rights to real estates. It represents an information system for protection of property rights, for tax and fee purposes, for property valuation and last but not least for protection of agricultural and forest land, for nature protection and for building of other information systems.
Organisational structure

Ministry of Interior
- 181 employees
- 26 employees

Geodetic and Cartographic Institute
- Bratislava
- 181 employees

Research Institute of Geodesy and Cartography
- 26 employees

Chlumeckého 2, P. O. BOX 57
820 12 Bratislava
Slovak Republic
- 75 offices
- 65 employees

Geodesy, Cartography and Cadastre Authority of the Slovak Republic
Slovak Republic - administrative division

8 counties
72 districts – 75 offices
3559 cadastral districts
2927 municipalities
Slovak Republic

- Area of Slovakia: 49 034 km²
- Number of real plots: 7.6 million
- Real plots on OD: 6.0 million, which represents about 79%
- Remaining 1.6 million parcels positionally match with approx. 8.0 million original properties
Types of cadastral maps

Cadastral maps in imperial scale – 33,9% mainly in scale 1:2880
Cadastral maps in metric scale – 66,1% (Since 1927 - Act no. 177/1927 Coll. on the Land Cadastre and its administration)
The technology of measurements and documenting of surveying work

• To ensure uniqueness of plot boundary documentation we defined a uniform legislative procedure in 2013 for surveying and documenting of surveying work the results of which are adopted into the real estate cadastre

• The essence of a new comprehensive technology of cadastral map administration is the connection of precise measuring method of plot boundaries, related calculations for documentation of the unambiguous position of these points and a complex way of creating and updating of a vector cadastral map

• The technology allows the incorporation of all precise measurements of plot boundaries carried out solely in ETRS89
Departmental transformation service

Measurement: ETRS89 ➔ JTSK03 ➔ JTSK

Established by the ÚGKK president's decision:
- Departmental transformation service since 30.1.2013
- Conversion interpolation table

Transformation is carried out

Directly in GNSS receiver

On the Authority’s website

PC application
Accuracy of plot boundaries

- Importance of accurate registration of real plots boundaries lies in the constitutional protection of immovable properties and fair tax collection.
- Boundaries of real plots are defined by 53.7 million detailed break points.
- 33.3 million detailed break points were surveyed and documented in a suitable quality ($m_{xy} = 0.08m$ or $0.14m$).
- 20.4 million detailed break points were not assessed or they didn't meet the accuracy criteria.
- Every two minutes a survey sketch is inserted into the maps.

<table>
<thead>
<tr>
<th>Point quality code</th>
<th>Number of detailed points 09/2016</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
</tr>
<tr>
<td>T1</td>
<td>3 773 714</td>
</tr>
<tr>
<td>T2</td>
<td>702 464</td>
</tr>
<tr>
<td>T3</td>
<td>26 723 026</td>
</tr>
<tr>
<td>T4</td>
<td>3 049 420</td>
</tr>
<tr>
<td>T5</td>
<td>20 163 935</td>
</tr>
</tbody>
</table>
Vector cadastral maps in Slovakia

- In rural areas the land consolidation process is the only general and at the same time rational way of making the map content more accurate.
- For general increase in registration accuracy of these boundaries it is necessary to carry out new mapping or rather selective mapping in those parts that need to be more accurate.
- The increase in registration accuracy of plot boundaries can be done individually within processing of survey sketches.

Situation to 30.09.2016
Categorization of Vector Cadastral Maps (VCM)

- Since January 1st 2015 all cadastral maps have been administered as vector cadastral maps
- Territory of Slovakia is completely covered by VCM
- In some cadastral districts there are different types of map sets which is caused by different method of map updating. In the Slovak Republic we distinguish three mandatory methods for updating of cadastral maps based on their factual accuracy

<table>
<thead>
<tr>
<th>Vector maps</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total number of vector maps</td>
<td>4,178</td>
</tr>
<tr>
<td>VCM numerical</td>
<td>1,849</td>
</tr>
<tr>
<td>VCMi (implemented)</td>
<td>483</td>
</tr>
<tr>
<td>VCMt (transformed) + 1,775 SPM</td>
<td>1,846</td>
</tr>
</tbody>
</table>

Situation to 30.09.2016
Descriptive Data File

- The Descriptive Data File contains data mainly related to owners, tenants and other entitled persons and data on plots (such as land type, area, etc.), data on buildings, flats and non-residential premises.
- In the cadastre we register about 4.4 million ownership documents.
- In Slovakia we don’t have a notary system - the lawyers make decisions on transfer of property rights at the district cadastral offices.
- Application of constitutive, registering and prenotation principles.
- Every 9 seconds one document is entered into the cadastral system.
- Every 22 seconds a decision on a change of ownership right is made.
Applications and services of ÚGKK SR

- The cadastral information system provides standard and also some premium services for professional public, for the state and also for citizens.
- The citizens may anytime and free of charge browse desired cadastral data.
- Emphasis on quality of cadastral data.
- Effective and fast data provision.
- Automation of procedures related to geodetic and cadastral (GaK) activities.
- Automation of procedures while checking the results of GaK activities and adopting them into cadastre.
- The results are free applications and services of ÚGKK.
Web services - ÚGKK SR

• **CICA „cica.vugk.sk“**
  - Acquisition of aggregated and detailed information from cadastre
  - Quick and easy search and generation of an ownership document (OD) extract
  - New data changed on a particularly day available around 8 p.m.

• Instant, easy and free access to selected cadastral data
• Since 2014 daily updating of data
• OD for information purposes
Accessibility of cadastral data to general public MAPKA http://mapka.gku.sk/mapovyportal/

- Immediate and free access to cadastral geodetic data file
- Simple and quick solution for cadastral maps display
- Continuous coverage of cadastral maps within Slovakia and their clear display
- Basic information about descriptive data related to graphical representation of properties
- 24h update without interruption of functionality
- Combination of displayed data (ZBGIS, World Topo Map, World street Map, World Imagery, Address points, Ortofoto)
Electronic Cadastral Services-ESKN 15 Portal

• ESKN15 system combines some of the benefits of both of these portal services and in addition to comprehensive information on one property it also provides the possibility of using non-visual WMS and WMTS services

• The real estate cadastre in the Slovak Republic is rated as open, accessible and effective

https://kataster.skgeodesy.sk/Portal/
Provision of cadastral data

- Data provision is mostly dependent on technical abilities and IT progress in general. At the same time the personal data protection is frequently discussed.

- We are witnessing the fact that personal data protection policy is slightly or more different in each country and each country is willing to provide a different range of personal data.

- Certain harmonization of personal data protection is important not only in the country but on European level as well.

- The cadastre is more the cadastre of real estates and not the cadastre of owners or citizens.

- There are many voices that not regulated possibility for anyone to obtain the whole portfolio of real estates possessed by one citizen either countrywide or even on European level is an obvious intolerable privacy violation.

- Similarly, many voices see as privacy violation also unlimited disclosing of particular or aggregated data on specific creditors or debtors.

- This issue is closely connected with possibility to provide sensitive information like “open data” with a defined protocol.
Main objectives and tasks of ÚGKK SR

• Improve the quality of cadastral data
• Integration with other information systems of public administration
• Transition to modern database solution
• Conclude work on paper ownership documents
• Creation of a reliable system for the retrospective data analysis
Live preview of MAPKA and CICA applications

http://mapka.gku.sk/mapovyportal/  
https://cica.vugk.sk/default.aspx
Thank you for your attention

Erik Ondrejička