

**GLOBAL SURVEYOR'S DAY  
SOFIA, BULGARIA, 21th of March, 2019**

# **Information system of cadastre in Bulgaria. Data and services**



**Cadastral and property register act - CPRA**  
(adopted 2001)



**CADASTRE**

**Cadastral map**  
Location, boundaries and extent of immovable property; State borders; Boundaries of administrative-territorial units

**Cadastral register**  
Right of ownership and other real rights over immovable properties

**Cadastral identifier** →

**Integrated information systems for cadastre property register (IISCPR)**

← **Cadastral identifier**

**PROPERTY REGISTER**

- lots of immovable properties
- acts recognizing or conveying right of ownership;
- acts establishing, conveying, modifying and terminating other real rights over immovable properties;
- interdictions and mortgages over the latter;
- other legal actions, circumstances and legal facts for which recordation is envisaged by law.



# GEODESY, CARTOGRAPHY AND CADASTRE AGENCY

## MAIN FUNCTIONS

### Cadastral and Property Registration Act

Cadastral map and  
cadastral registers

Acts, regulations,  
programs, concepts

Administrative and  
technical cadastral  
servicing

Register of licensed  
individuals and legal  
entities for cadastral  
activities

### Geodesy and Cartography Act

Topographic maps  
1:5000, 1:10 000

State levelling and sea-  
level networks

Geodetic networks

Register of geographic  
names

Topographic databases  
and geographic  
information system

## Sectors of operation and clients

### Sectors

Real estate  
market

Territorial and  
organizational  
planning

Infrastructure

Environment

### Clients

State  
administrations

Surveyors

Notaries

Registry  
judges

Real Estate  
Agencies

Banks

Citizens

# Data sources for creation of cadastral map and cadastral registers

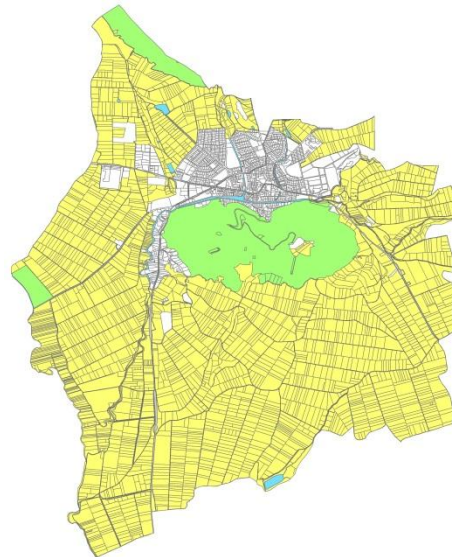
Data from digital map of the restored ownership of agricultural and forest lands



Data from previous cadastral, regulation or structural plans



The data that corresponds by contents and precision to the requirements determined by the Law is combined for creating digital cadastral map and cadastral registers.



Data collected via geodetic, photogrammetric and other measurements and calculations

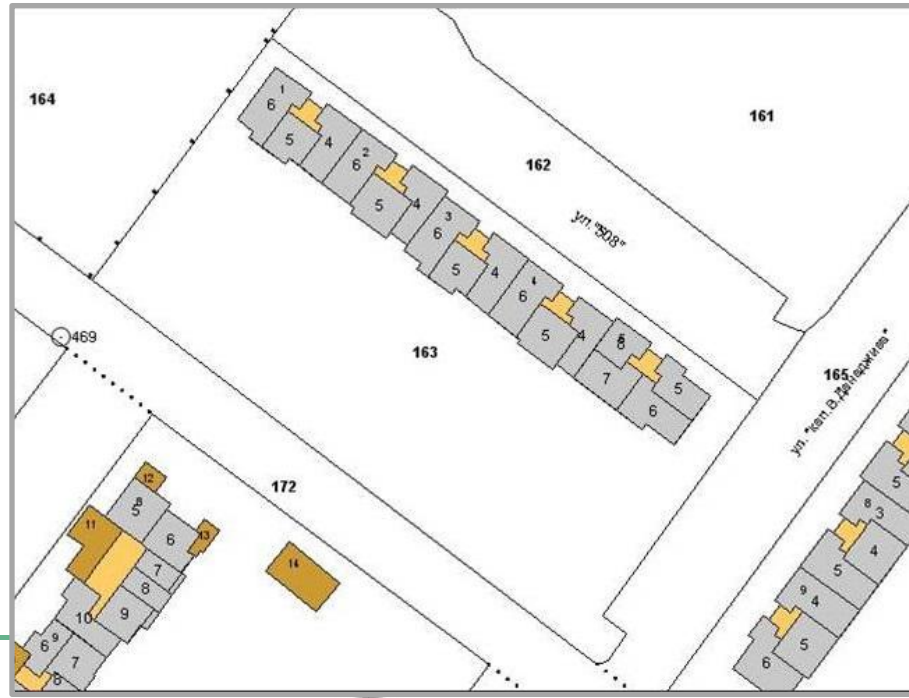
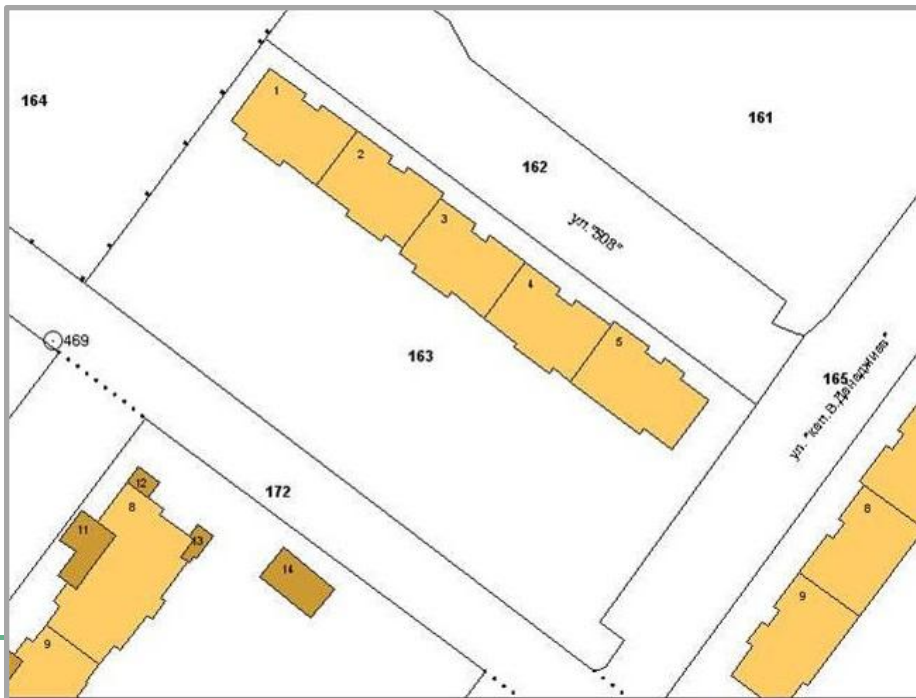


Data for the owners and holders of other real rights, gathered from the registers to the maps and plans and the registers of the municipal and regional administration



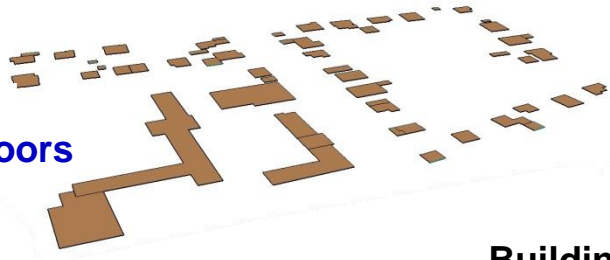
# Immovable properties, objects in the cadastre

- ❖ **Land property** is the basic unit of the cadastre, it is a part of the surface of the earth, including durably covered with water, defined by boundaries compliant with the right of ownership. The land properties fully cover up the territory of the country, defined by the state borders, without overlapping each other.
- ❖ **Building**, including also rough construction (building or structure which surrounding walls and roof have been made).
- ❖ **Self-contained object of property (SCOP) in a building or in a facility of the technical infrastructure** - part of the building or facility that has a self-dependent function and building with exposed walls. SCOP can be an apartment, office, studio, garage, store, etc.
- ❖ Each land property, building or self-contained object is attributed an identifier, a unique number by which the immovable property is singularly identified within the territory of the country.



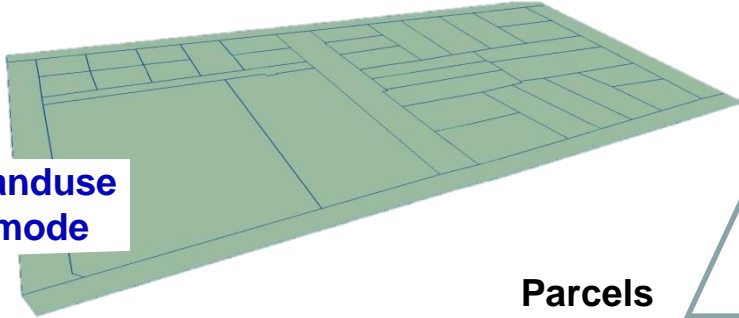


Identifier  
Built-up area  
Number of floors  
Use  
Address



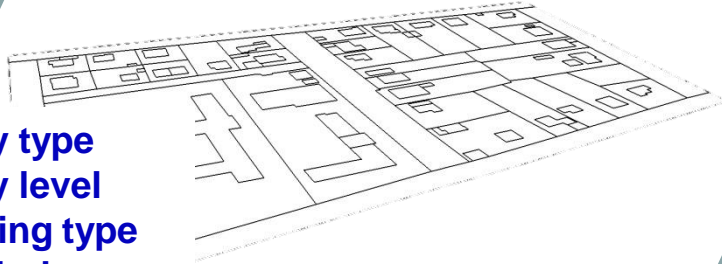
**Buildings**

Identifier  
Area  
Durable landuse  
Landuse mode  
Address



**Parcels**

Boundary type  
Boundary level  
Determining type  
Line symbol



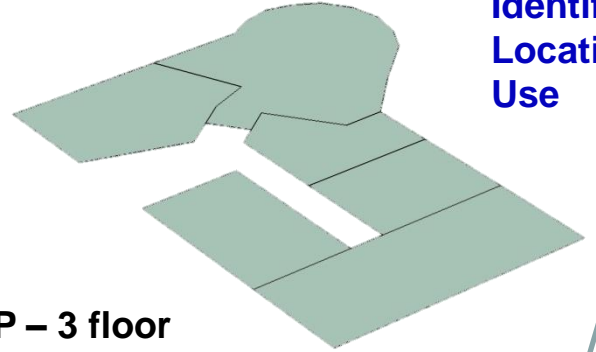
**Boundaries**

Geodetic coordinates  
Determining type  
Precision type

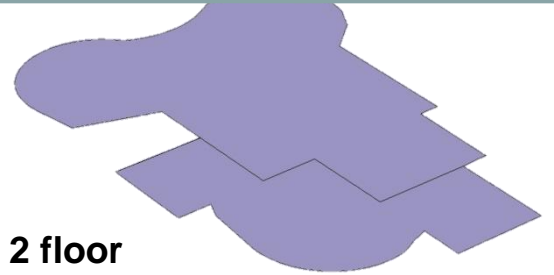


**Boundary points**

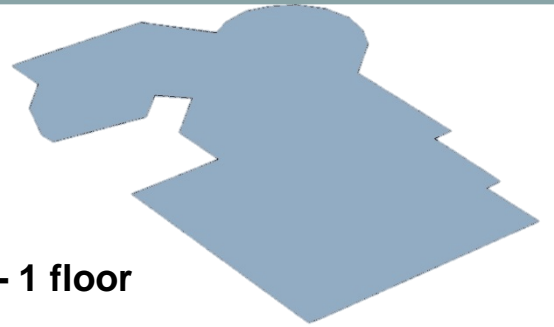
Identifier  
Location  
Use



**SCOP – 3 floor**



**SCOP – 2 floor**



**SCOP – 1 floor**



**Building**

# Cadastral registers

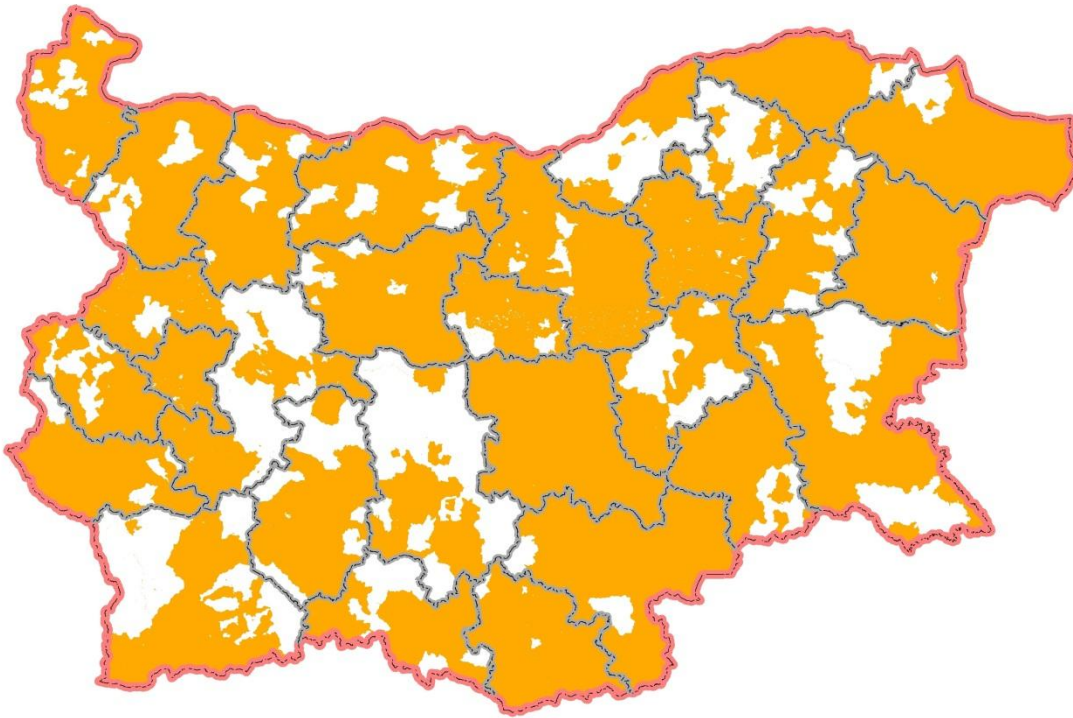
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- ❖ Cadastral register of the geodetic base points;
- ❖ Register of cadastral identifiers and their changes.
- ❖ Cadastral register of the immovable properties – main cadastral data and data about owners, including:
  - the basic data about the property;
  - the data about the owner of the immovable property and the act/deed from which the owner benefits his right;
  - the data about the other real rights over the immovable property;
  - the number of the lot of the property in the property register.

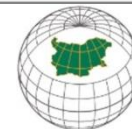
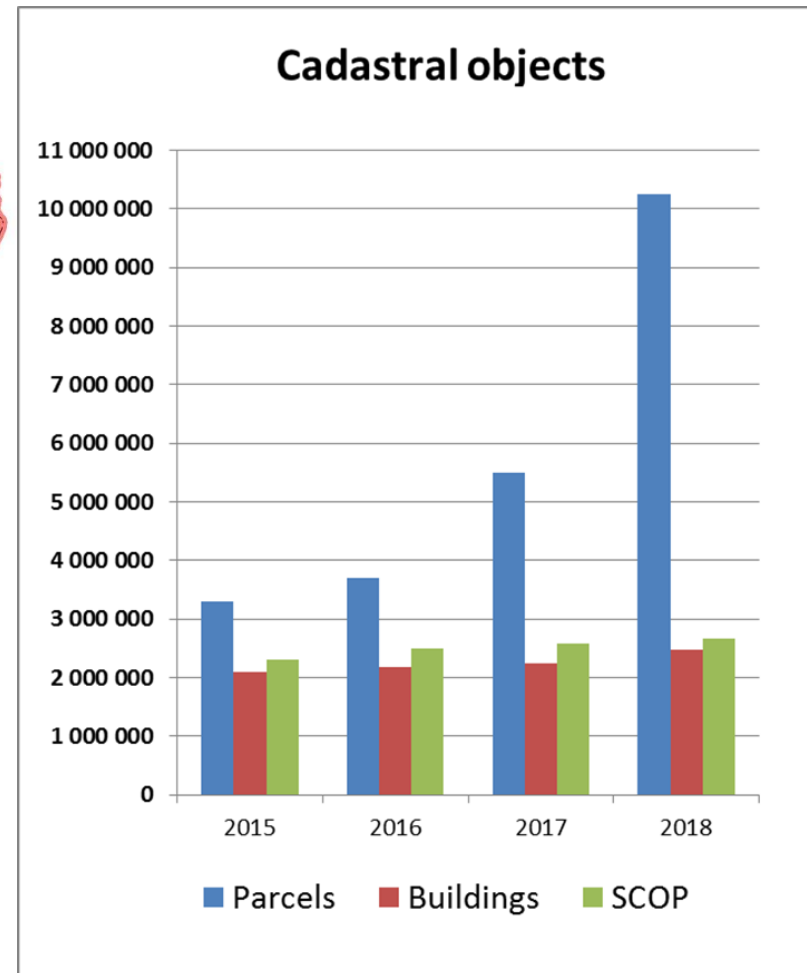


# Coverage with cadastral map and cadastral registers in compliance with the requirements of CPR Act

Jan 2019 – over 70% coverage



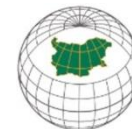
**10 249 912** land properties  
**2 483 239** buildings  
**2 673 626** self-contained objects





# Cadastral coordinate systems 2005

<b>Cadastral coordinate systems 2005</b>	
<i>Reference system</i>	Geodetic Reference System 1980 (GRS 80)
<i>Projection</i>	Lambert Conformal Conic
<i>Two Standard Parallels</i>	$\varphi_1 = 42^{\circ}00'00''$ $\varphi_2 = 43^{\circ}20'00''$
<i>Central Meridian</i>	$\lambda_0 = 25^{\circ}30'00''$
<i>Coordinates of central point of the projection</i>	$x_0 = 4\,725\,824.3591\text{ m}$ $y_0 = 500\,000\text{ m}$



# Accuracy of the cadastral map

## Error in the absolute position of a detail point

$$\Delta S = \sqrt{(X - X_k)^2 + (Y - Y_k)^2}$$

$X_k, Y_k$  - coordinates of the point on the cadastral map

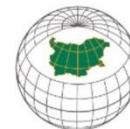
$X, Y$  - coordinates of the point obtained by control determination by land survey measurement and calculation

## Error in the distance between two detail points

$$\partial S = S - S_k$$

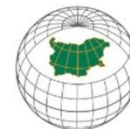
$S_k$  - distance between two randomly selected detail points in one or adjacent objects (landed properties or buildings) on the cadastral map

$S$  - distance obtained by control measurement on site between the same detail points



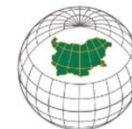
# Accuracy of the cadastral map for urbanized territories

<b>Where the coordinates of the points are determined by land survey measurements</b>	$\Delta S$ , cm	$\partial S$ , cm
For points of permanently materialized boundaries of landed properties and outlines of buildings in the main built-up domain	30	20
For points of non-permanently materialized boundaries of landed properties and outlines of buildings in the auxiliary built-up domain	60	40
<b>Where the coordinates of the points are determined from a graphic plan or a map</b>	$\Delta S$ , cm	$\partial S$ , cm
For points of permanently materialized boundaries of landed properties and outlines of buildings in the main built-up domain	60	40
For points of non-permanently materialized boundaries of landed properties and outlines of buildings in the auxiliary built-up domain	120	80



# Accuracy of the cadastral map for non-urbanized territories

<b>Where the coordinates of the points are determined by land survey measurements</b>	$\Delta S$ , cm	$\partial S$ , cm
For points of permanently materialized boundaries of landed properties and outlines of buildings	60	40
For points of non-permanently materialized boundaries of landed properties	120	80
<b>Where the coordinates of the points were determined from a graphic plan or a map</b>	$\Delta S$ , cm	$\partial S$ , cm
For points of all boundaries of landed properties	180	120



# Integrated information systems for cadastre and property register

## CADASTRE INFORMATION SUB-SYSTEM

Internet module  
“KAIS portal”

Record keeping  
module “KAIS Office”

GIS module  
“Cadastral map and  
cadastral registers”



GEODESY, CARTOGRAPHY  
AND CADASTRE AGENCY

over 35 000  
for change in  
cadastral map – in  
2017

Integration  
process –  
exchange  
of  
notification  
s via XML  
messages

over 600 000  
for change in  
cadastral register  
in 2018

## PROPERTY REGISTER INFORMATION SUB-SYSTEM

*Module - Registration  
of Documents*

*Module – Act entry  
and property lot*

*Module – Reports and  
Services*



REGISTRY AGENCY



# Internet module “KAIS portal” of the cadastre information system <http://kais.cadastre.bg>



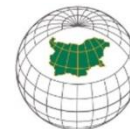
**Search  
Find  
View**



**Automatically  
generated  
queries**



**Application  
forms for  
requesting  
services**



# Internet module "KAIS portal" of the cadastre information system <http://kais.cadastre.bg>



**GEODESY, CARTOGRAPHY AND CADASTRE AGENCY**

Cadastral administrative information system

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Стефан Стефанов Петров

KNIK 844500 Account 38.20 lev



MAP

SERVICES

COMPLAINTS AND OBJECTIONS

ORDERS

APPLICATIONS

CHECK STATUS

HOW TO...

> User profile > Log off

Navigation and search tools including zoom, pan, and search icons.

Cadastral map

QUICK SEARCH ADDRESS IDENTIFIER OLD IDENTIFIER GEODESIC BASE OWNERS

Key words

SEARCH

Current map extent

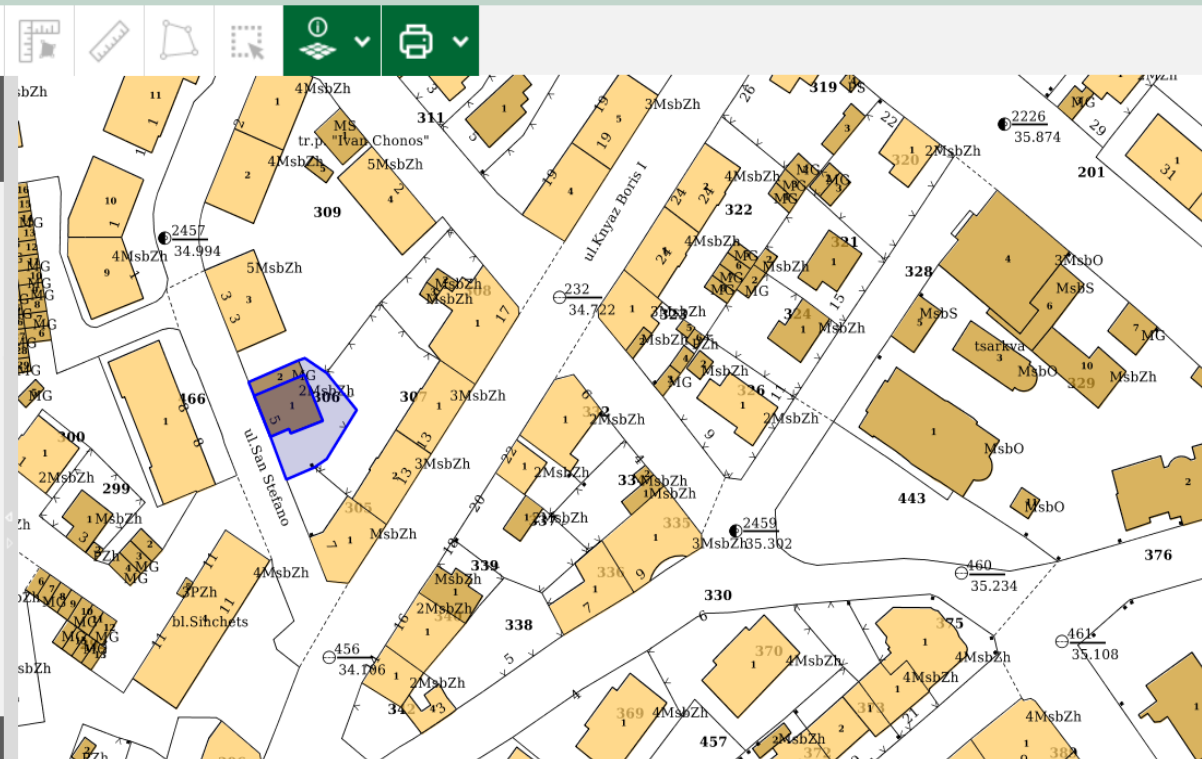
First 200 results

Immovable property 10971.501.306 gr. Vidin

Immovable 10971.501.306, oblast Vidin, obshtina Vidin, Vidin, ul. "San Stefano" № 5, property type Private, territory type Urban, usage type Low-rise buildings (up to 10 m), area 352 sq.m., old number 501.425.  
Order approving the cadastral map № **PD-18-5/28.01.2008** of IZPALNITELEN DIREKTOR NA AGKK

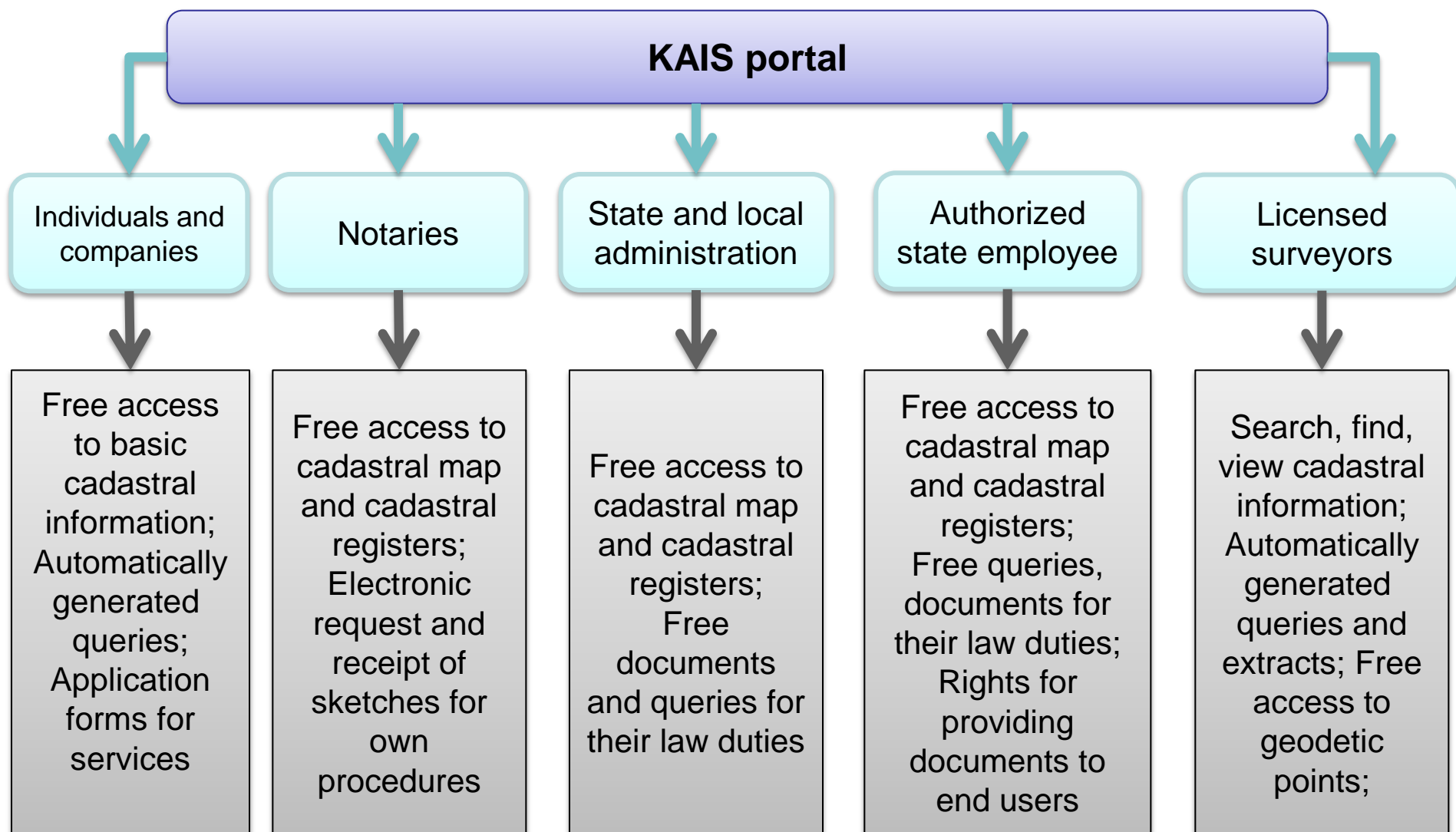
Building 10971.501.306.1 gr. Vidin

1 1 - 2 / 2



**GEODESY, CARTOGRAPHY AND CADASTRE AGENCY**

# Users of cadastral information



# Automatically generated queries in “KAIS portal”

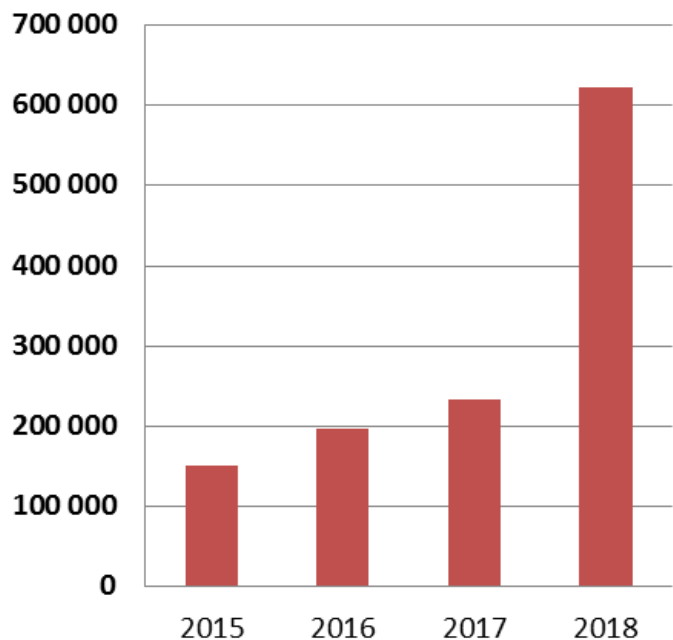
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- ❖ Real time queries, automatically generated by the system;
- ❖ Free references to basic cadastral data of the immovable properties to all users;
- ❖ Free references to ownership of the immovable properties to special users;
- ❖ Free information for geodetic base points and their coordinates;
- ❖ Reports in \*.pdf format from cadastral map and cadastral registers;
- ❖ A copy of the cadastral map and cadastral registers in digital vector format;
- ❖ Results are available on the screen or electronically in the client profile;
- ❖ For some reports of cadastral map and cadastral registers shall be paid fees, determined by a tariff adopted by the Council of Ministers.



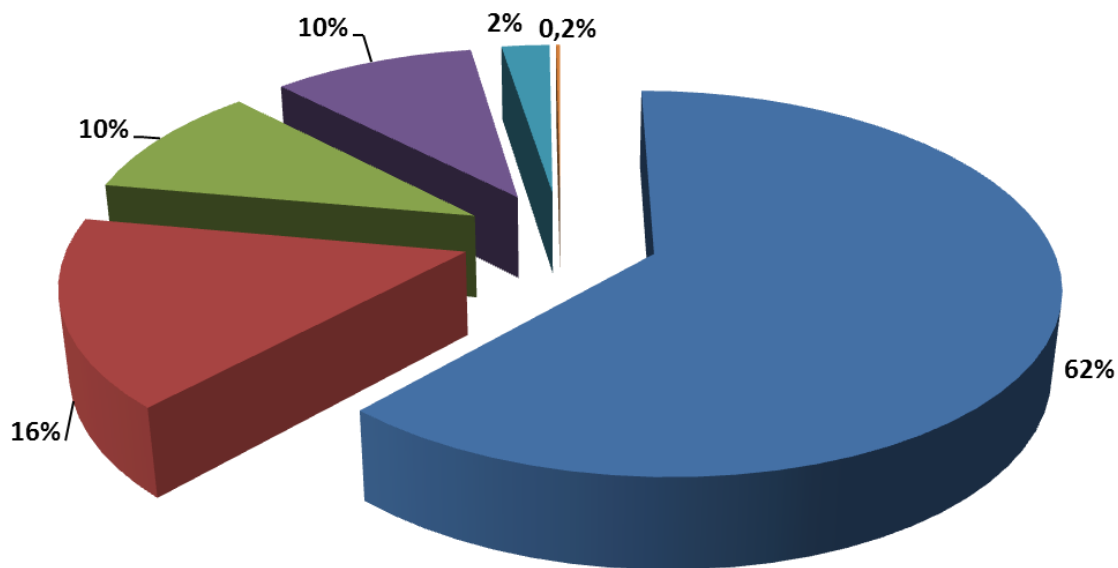
# Automatically generated queries in "KAIS portal"

## Number of queries in years



## Automatically Generated Queries in 2018

- Query of owners and holders of other rights of property from cadastral register
- Graphic query of a cadastral object with basic cadastral data
- Graphic query of a cadastral object with info for owners and holders of other rights
- Extracts of the cadastral map in vector format
- Extract from the register of the geodetic points
- Query of coordinates of border points

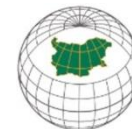




# Application forms for requesting services via "KAIS portal"

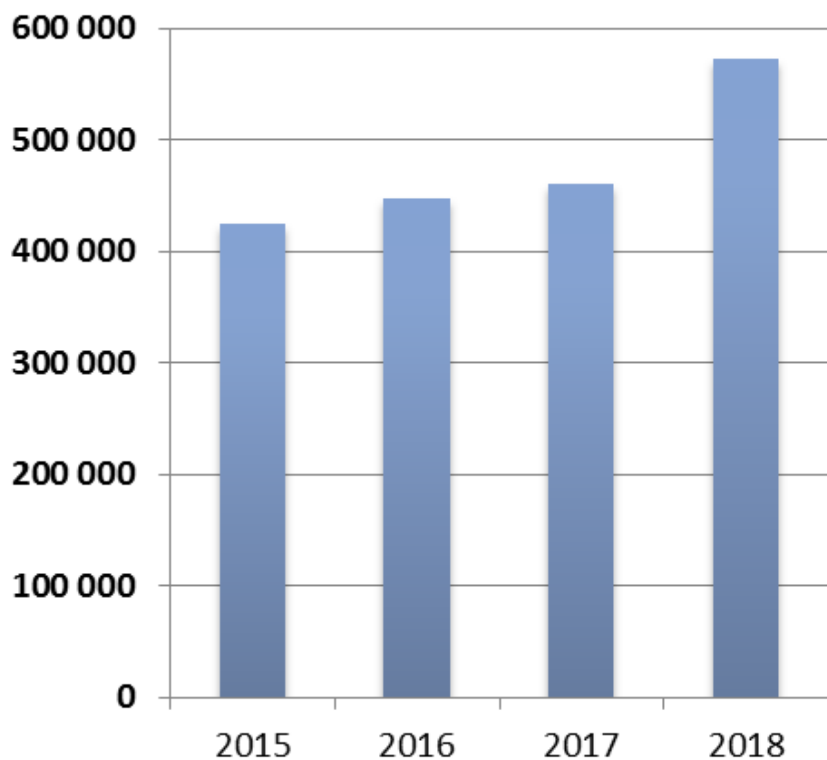
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- ❖ Application forms for a service are filled in and sent to GCCA for implementation;
- ❖ GCCA employees handle the request in the statutory deadline;
- ❖ Depending on the type of final document, the result can be available electronically in the client profile in KAIS or shall be received in the GCCA reception room;
- ❖ Application forms for some services require to be digitally signed by the client;
- ❖ For the services of cadastral map and cadastral registers shall be paid fees determined by a tariff adopted by the Council of Ministers.

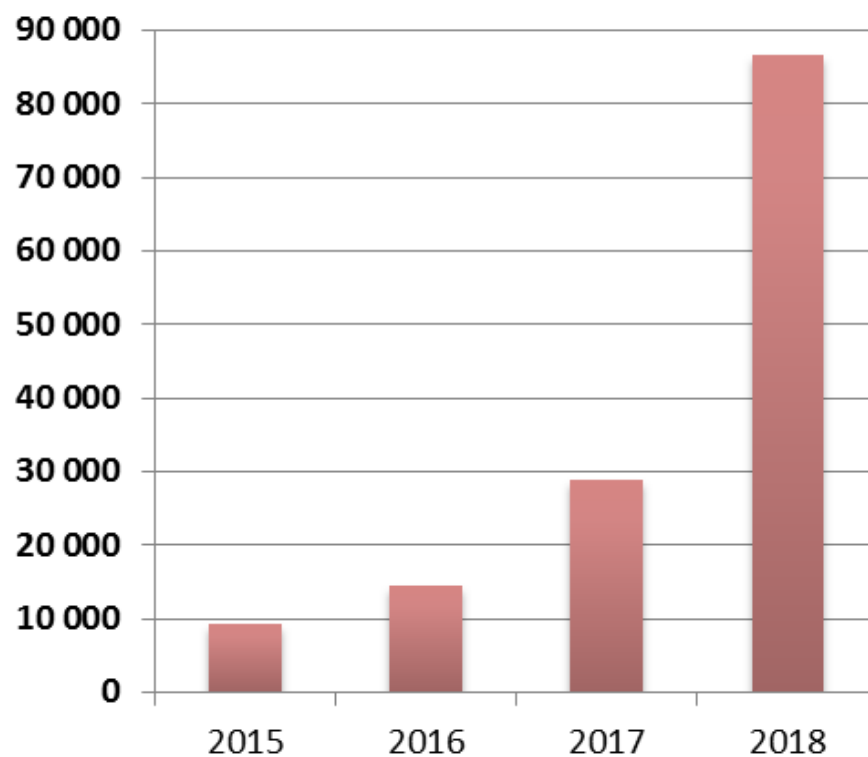


# Applications for services

## Number of applications for services

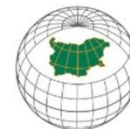


## Number of electronic applications for services



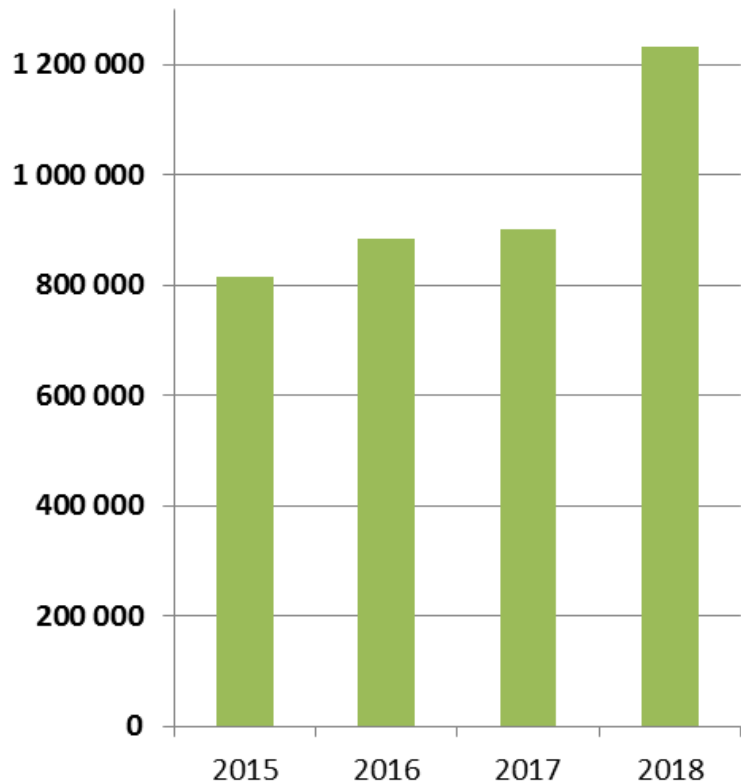
# Most required cadastral services

- ❖ Application of changes in the cadastral map and cadastral registers
  - Adding new immovable properties
  - Reflecting changes in the boundaries and attributes of immovable properties
  - Partition of land property
  - Consolidation of land properties
  - Reflecting changes for buildings that are removed
  
- ❖ Issuing legal documents of immovable properties
  - Sketch of a land property or a building
  - Scheme of a self-contained object
  - Extracts from the cadastral register of real estate
  - Certificates for cadastral objects
  
- ❖ Copy of the cadastral map in vector or graphic format



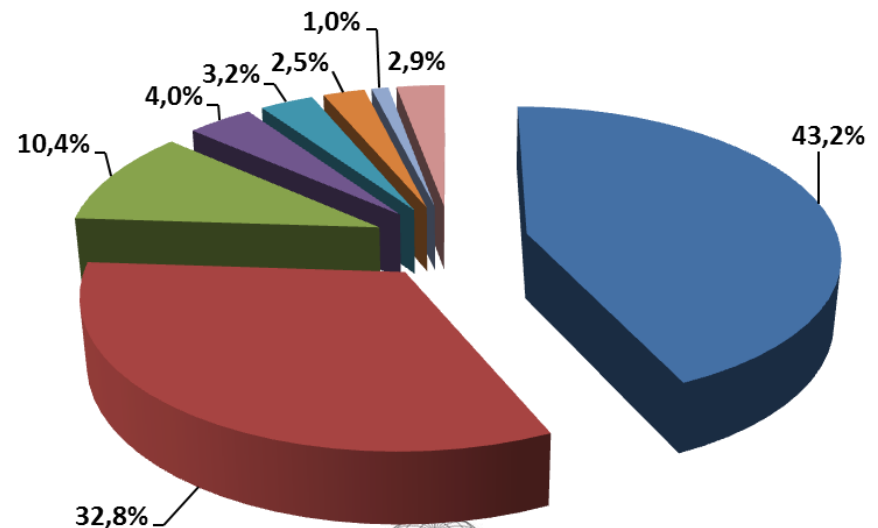
# Requested cadastral services

## Number of requested cadastral services

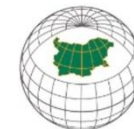
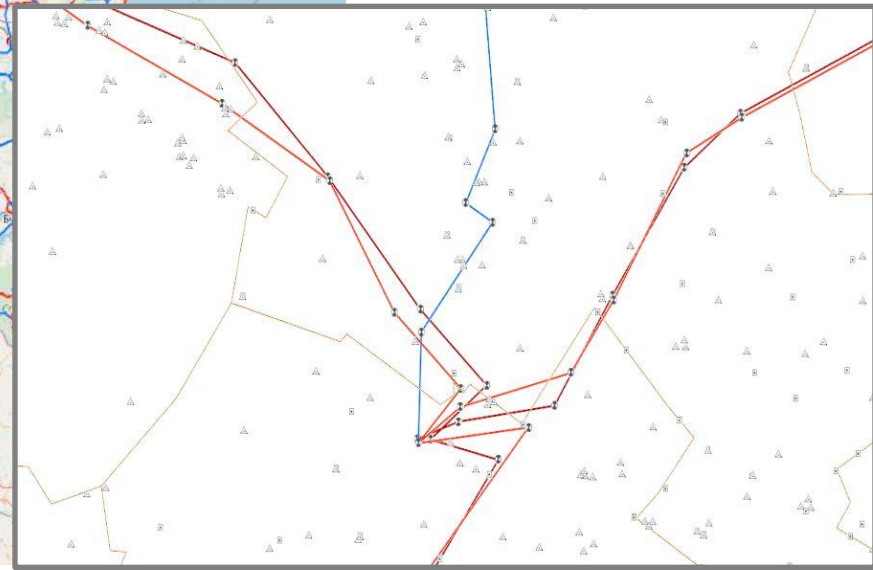
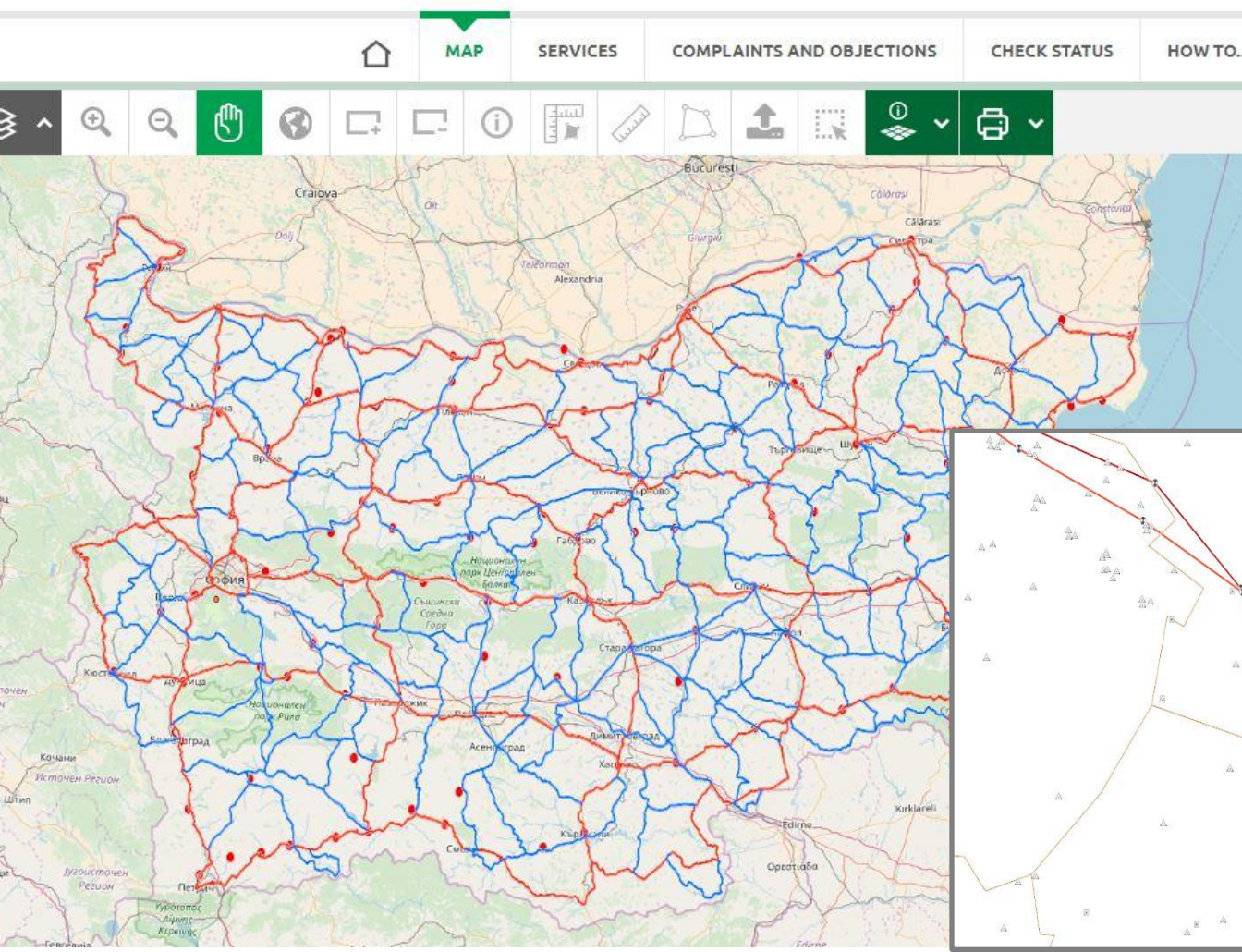


## Requested cadastral services in 2018

- Sketches and Schemes of cadastral object
- Application of changes in the cadastral register
- Certificates for cadastral objects
- Application of changes in the cadastral map
- Determining and maintaining a cadastral identify
- Other administrative works
- Copy of the cadastral map in vector or graphic format
- Other services



# Other data in KAIS portal Geodetic networks





# Other data in KAIS portal

## Scanned topographic maps M1:5 000 and 1:10 000



**GEODESY, CARTOGRAPHY AND CADASTRE AGENCY**

Cadastral administrative information system

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MAP

SERVICES

COMPLAINTS AND OBJECTIONS

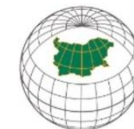
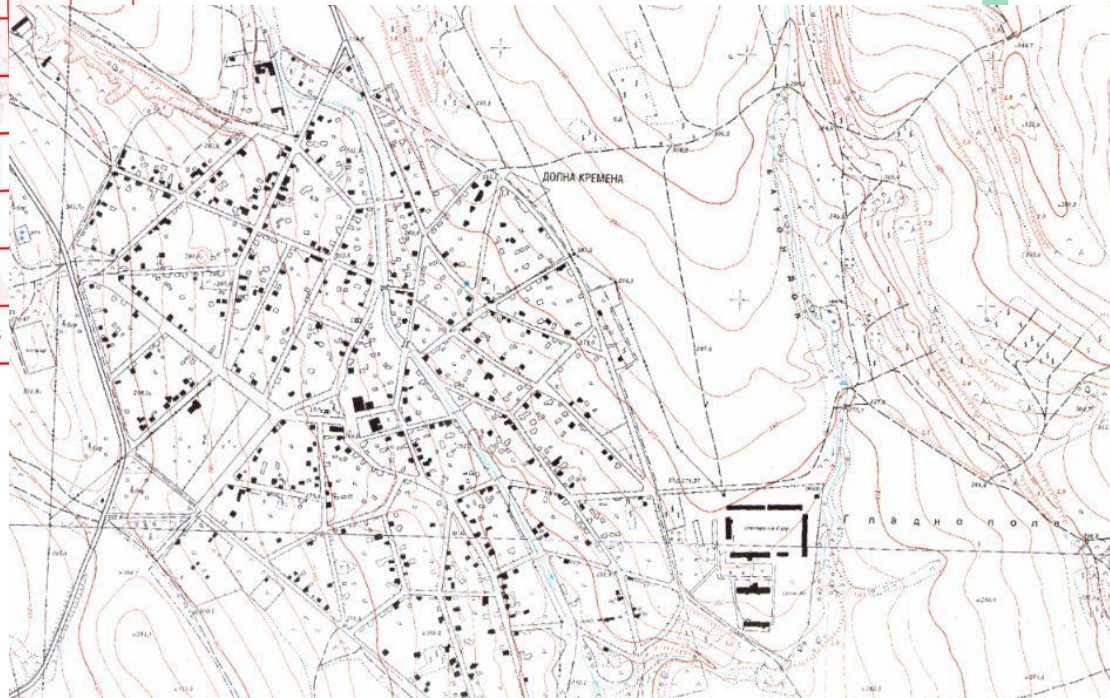
CHECK STATUS

HOW TO...

> Log in > Registration



L-34-141	L-34-142	L-34-143						L-35-137	L-35-138	L-35-139	L-35-140		
K-34-9	K-34-10	K-34-11	K-34-12	K-35-1	K-35-2	K-35-3	K-35-4	K-35-5	K-35-6	K-35-7	K-35-8	K-35-9	K-35-10
K-34-21	K-34-22	K-34-23	K-34-24	K-35-13	K-35-14	K-35-15	K-35-16	K-35-17	K-35-18	K-35-19	K-35-20		
	K-34-34	K-34-35	K-34-36	K-35-25	K-35-26	K-35-27	K-35-28	K-35-29	K-35-30	K-35-31	K-35-32		
K-34-45	K-34-46	K-34-47	K-34-48	K-35-37	K-35-38	K-35-39	K-35-40	K-35-41	K-35-42	K-35-43	K-35-44		
K-34-57	K-34-58	K-34-59	K-34-60	K-35-49	K-35-50	K-35-51	K-35-52	K-35-53	K-35-54	K-35-55	K-35-56		
K-34-66	K-34-70	K-34-71	K-34-72	K-35-61	K-35-62	K-35-63	K-35-64	K-35-65	K-35-66	K-35-67	K-35-68		
	K-34-82	K-34-83	K-34-84	K-35-73	K-35-74	K-35-75	K-35-76	K-35-77	K-35-78	K-35-79	K-35-80		
	K-34-84	K-34-85	K-34-86	K-35-86	K-35-87	K-35-88	K-35-89						
K-34-106	K-34-107												



**GEODESY, CARTOGRAPHY AND CADASTRE AGENCY**

# Other data in KAIS portal

## INSPIRE – Administrative, parcels, buildings



GEODESY, CARTOGRAPHY AND CADASTRE AGENCY

Cadastral administrative information system

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MAP

SERVICES

COMPLAINTS AND OBJECTIONS

CHECK STATUS

HOW TO...

> Log in

> Registration

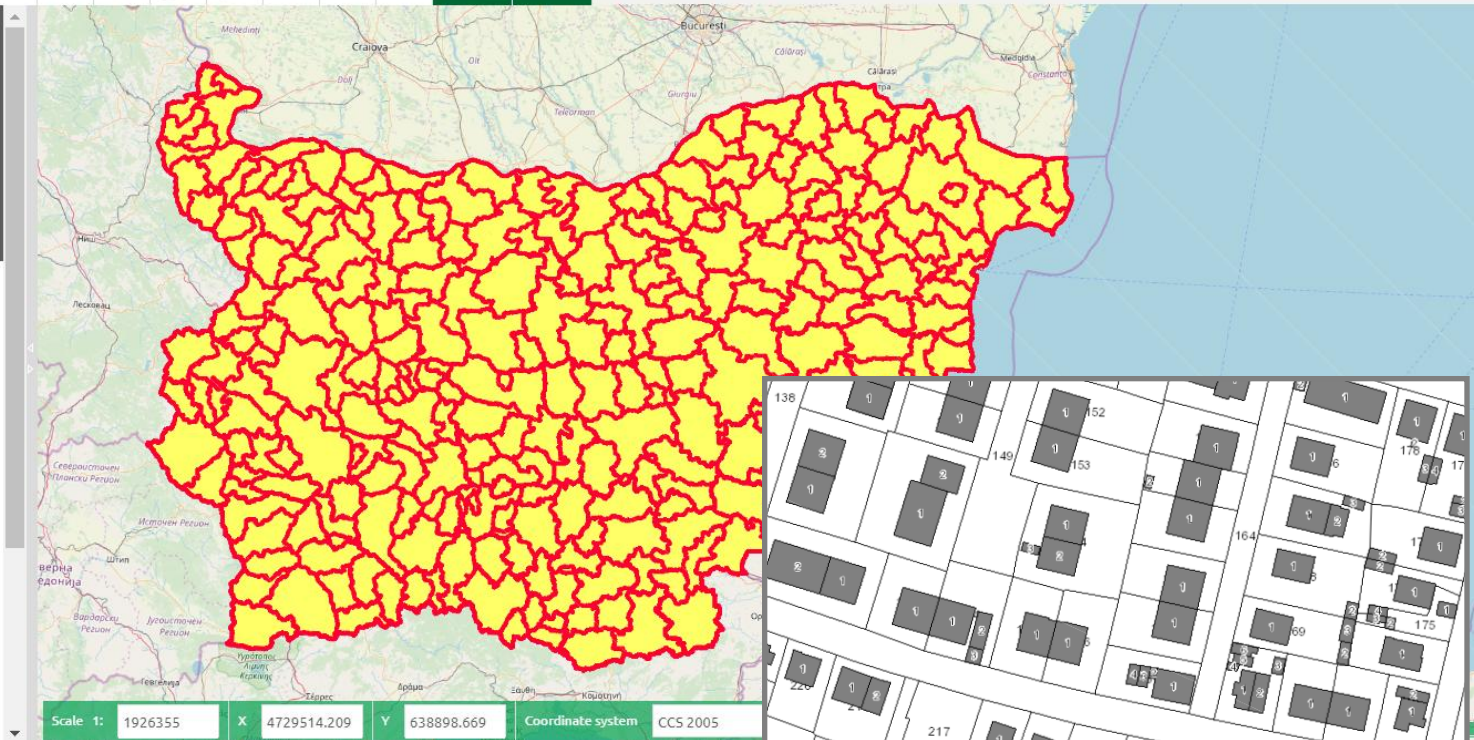


**CHOOSE VIEW:**

- Cadastrе
- Project CMCR
- Cartography
- Geocartfund
- Black Sea coast
- Inspire

**CHOOSE BASE MAP:**

- Administrative n...
- Aero-photo ima...
- No base map



- European Directive (2007/2/EC) INSPIRE
  - Building surface
  - Cadastral parcels
  - Cadastral regions
  - Administrative boundary 5-th order (Regions)
  - Administrative boundary 4-th order (EKATTE)
  - Administrative boundary 3-rd order (Municipality)
  - Administrative boundary 2-nd order (Province)
  - Administrative boundary 1-st order (Country)
  - Administrative Units 5th Order (Regions)
  - Administrative Units 4th Order (EKATTE)
  - Administrative Units 3rd Order (Municipalities)
  - Administrative Units 2nd Order (Provinces)
- Cadastral offices
- Black Sea coastal area
- Protected areas in Natura 2000

Scale 1: 1926355 X 4729514.209 Y 638898.669 Coordinate system CCS 2005



# Other data in KAIS portal

## Protected area NATURA



**GEODESY, CARTOGRAPHY AND CADASTRE AGENCY**

Cadastral administrative information system

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MAP

SERVICES

COMPLAINTS AND OBJECTIONS

CHECK STATUS

HOW TO...

> Log in > Registration



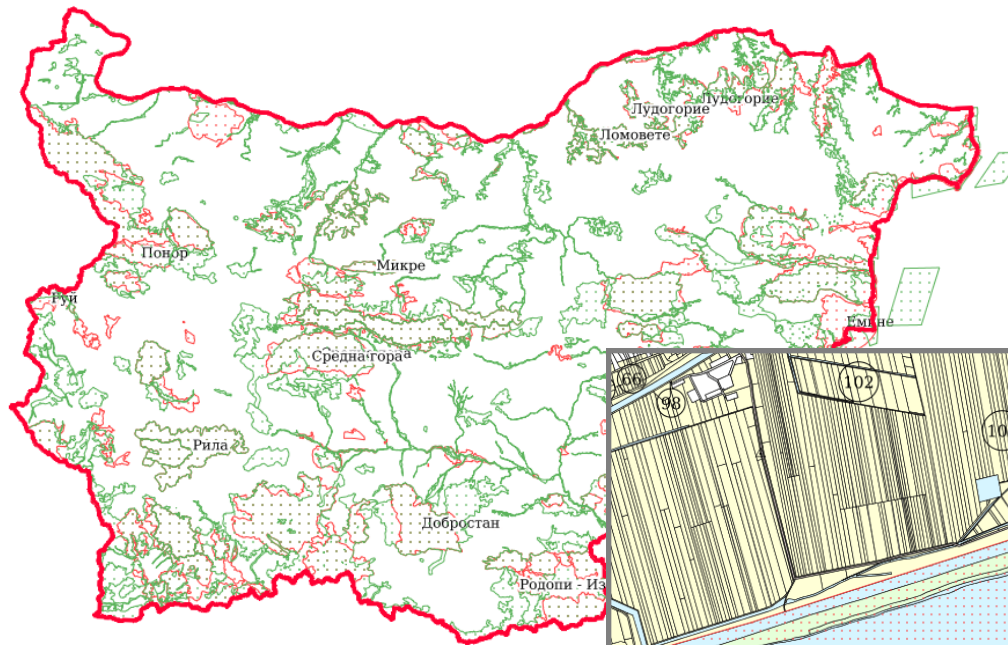
CHOOSE VIEW:

- Cadastre
- Project CMCR
- Cartography
- Geocartfund
- Black Sea coast
- Inspire

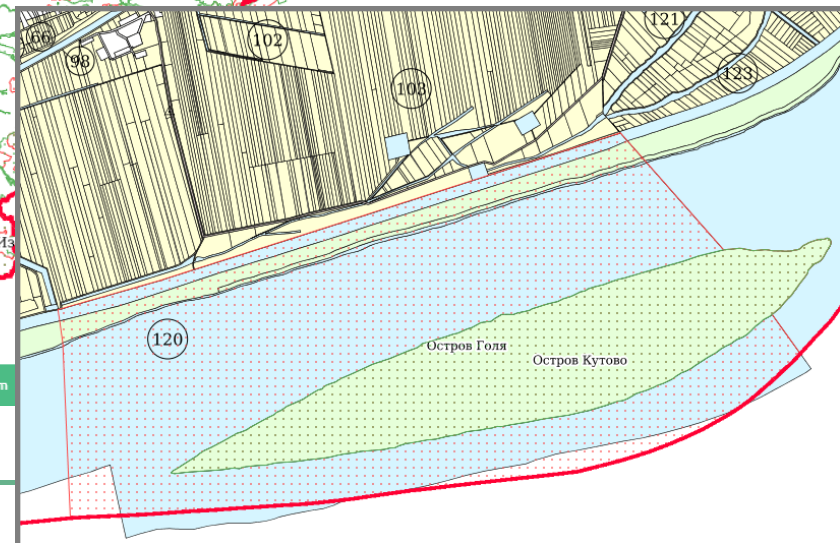
CHOOSE BASE MAP:

- Administrative map
- Aero-photo image
- No base map

- European Directive (2007/2/EC) INSPIRE
- Cadastral offices
- Black Sea coastal area
- Protected areas in Natura 2000
  - Special Areas of Conservation (pSCI/SCI/SAC)
  - Special Protection Area (SPA)
- Cadastral map
- Unapproved Cadastral map
- Geo-network
- Photogrammetric mapping and materials
- Grids (CRS 1950)
- Grids (CRS 1970)
- Grids (CRS BGS2005)
- Large scale topographic maps
- Administrative map



Scale 1: 1926355 X 4713327.718 Y 678906.834 Coordinate system



# Geographic names

<http://geonames.cadastre.bg>



рила

Търсене

Намерени са 43 резултата (1-30)

Резултати [Разширено търсене](#)

**община Рила**

област КЮСТЕНДИЛ

**град - общински център Рила**

община РИЛА, област КЮСТЕНДИЛ

**планина Рила**

Рило-Пиринска група, Рило-Родопска област

**природен парк Рила**

Югозападна Рила, Рило-Пиринска група, Рило-Родопска област



Европейски съюз



Европейски социален фонд  
Инвестиции в хората



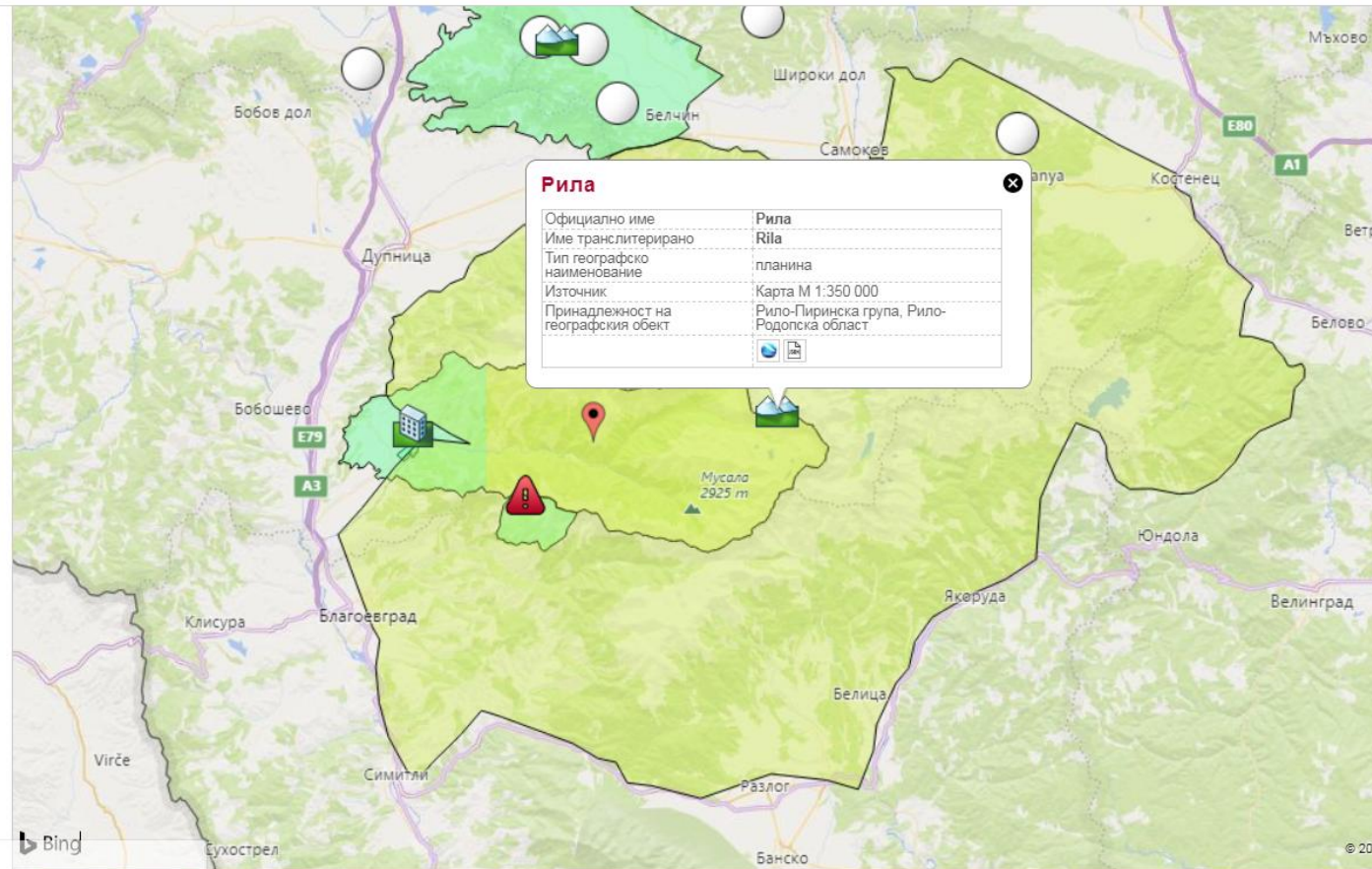
ОПАК. Експерти в действие

Проектът е осъществен по Договор № 12-32-13/2012 г. с финансовата подкрепа на ОПАК, съфинансирана от ЕС чрез ЕСФ

41° 49' 53" N 22° 50' 07" E

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[geonames.cadastre.bg/index.php](http://geonames.cadastre.bg/index.php)



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