REPUBLIC OF ESTONIA
LAND BOARD

A hundred years of the Republic of Estonia

# Land Cadastre in Estonia

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Q-KEN Tallinn 06.12.2018

## *Content of the presentation*

An overview of the Estonian Land Cadastre

Scope of cadastral data

Licensing, cadastral surveying

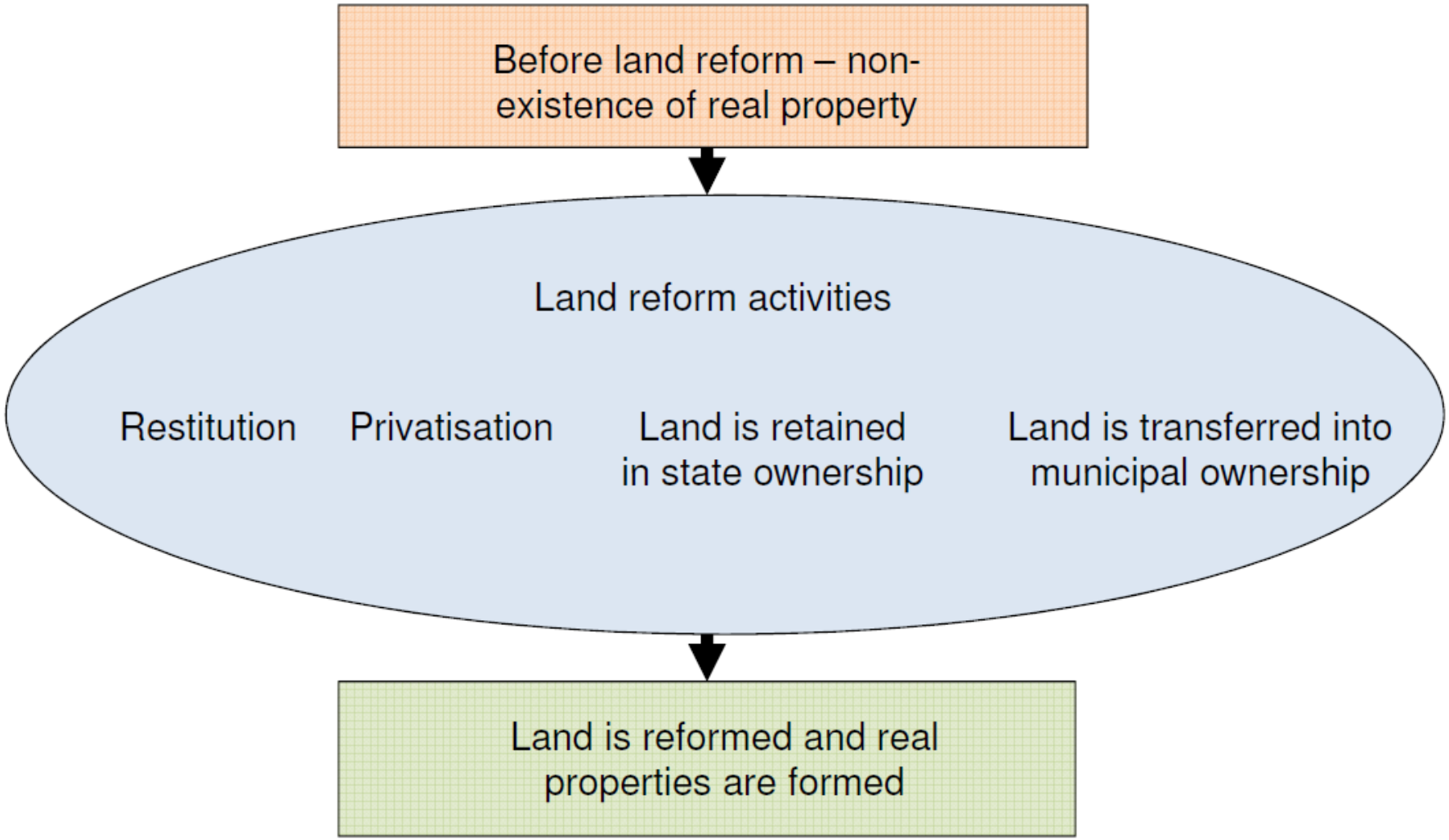
Quality issues we are dealing with

New developments

# *History*

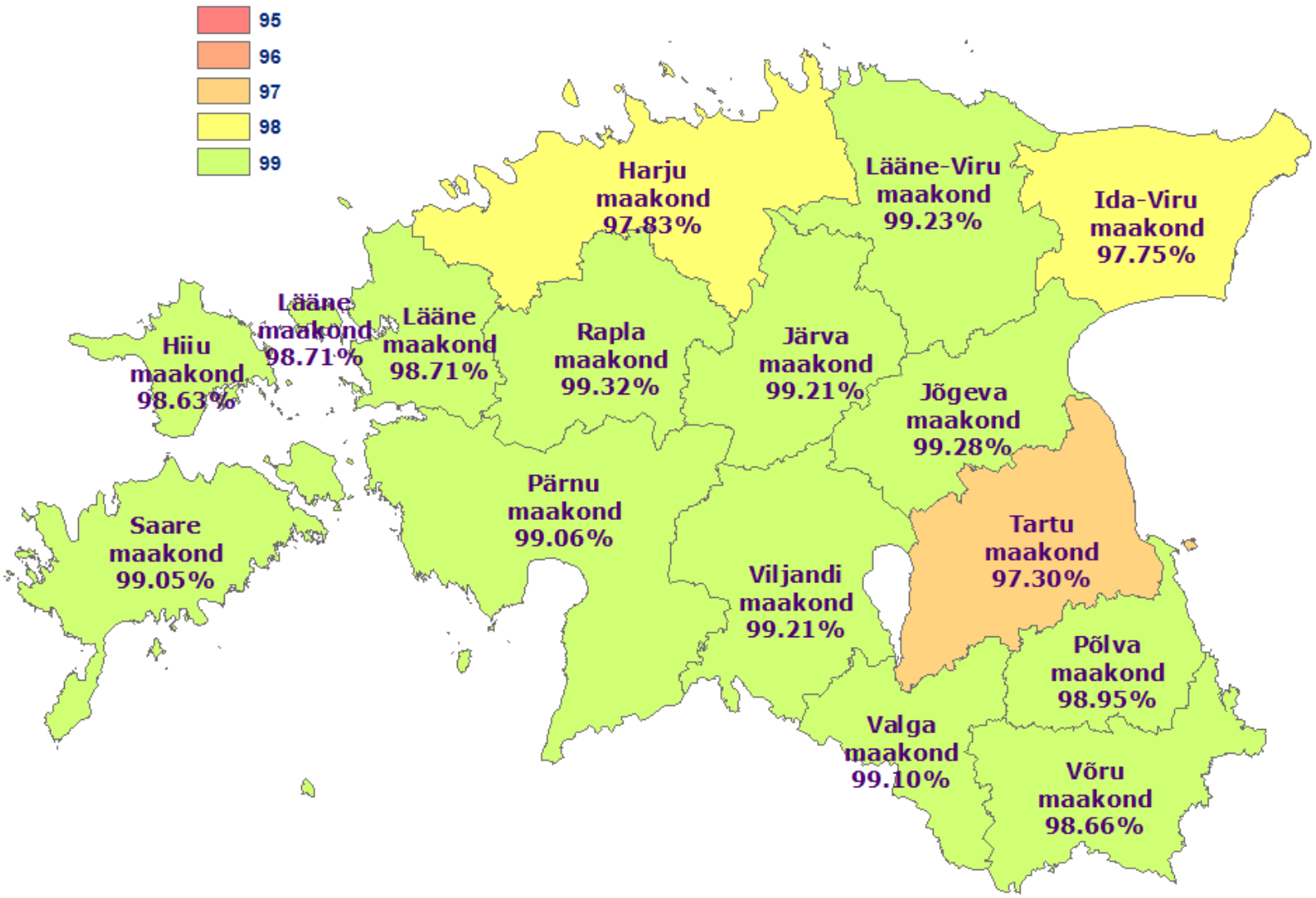
- ✓ 13th century the “bushel-book” was established. The predecessor of the Estonian land cadastre. Purpose to take an inventory of peasants’ duties.
- ✓ In 1918 the Estonian independence was declared and Cadastral Offices were founded. Pretty similar structure of today’s land cadastre.
- ✓ 1940-1991 Soviet Union occupation in Estonia. Land was nationalized and cadastral registration was stopped.
- ✓ In 1991 private ownership restored. Today’s land cadastre was founded with purpose cadastral parcel registration for land reform.

# *Land Reform in Estonia*

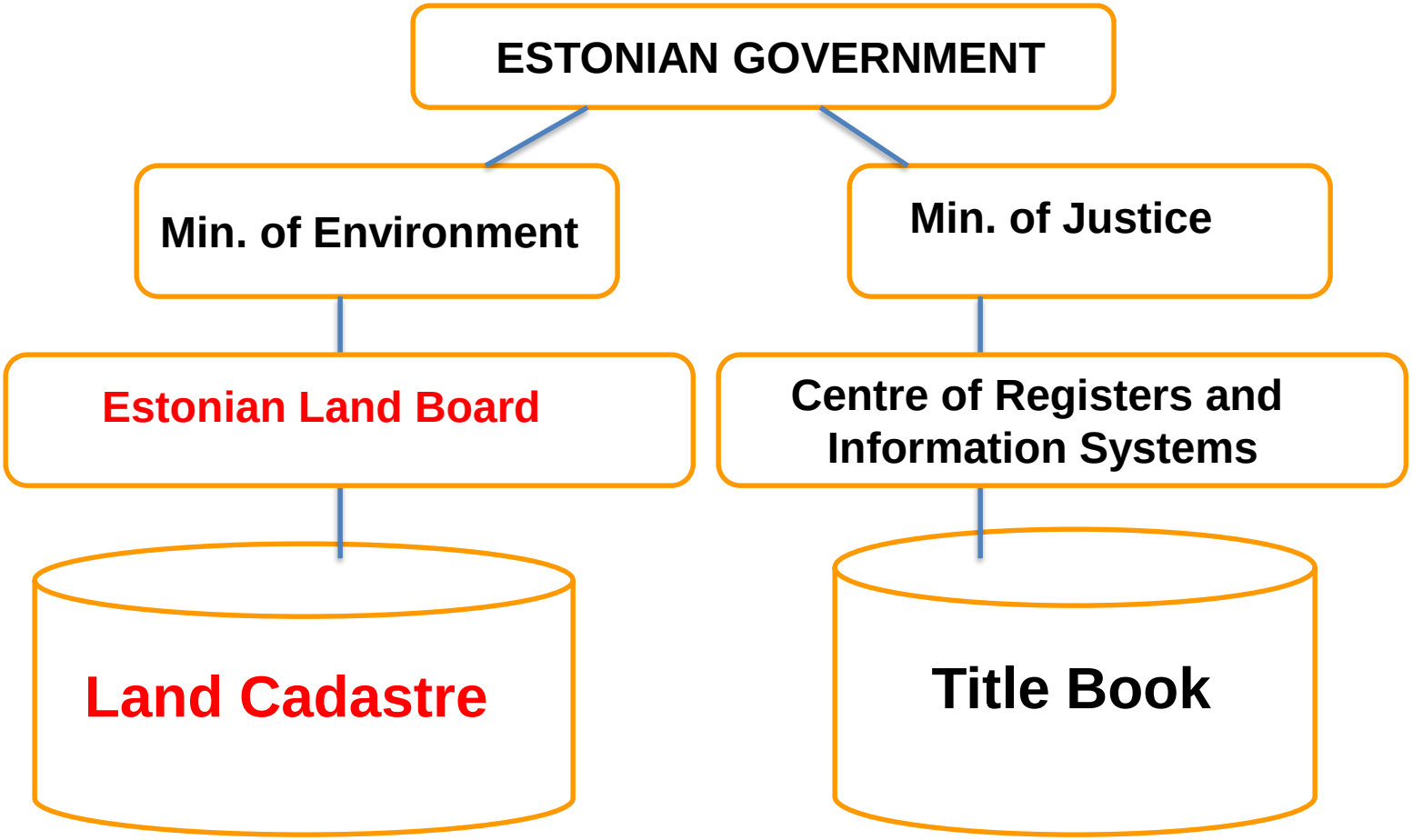


# Land registred in Land Cadastre
## % of county territory

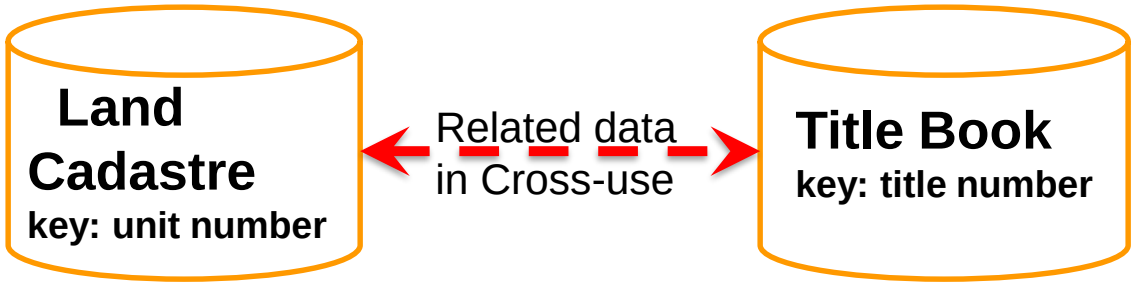
# *Land Reform in Estonia*



# *Administration*



# Administration




Data about **parcels** incl.

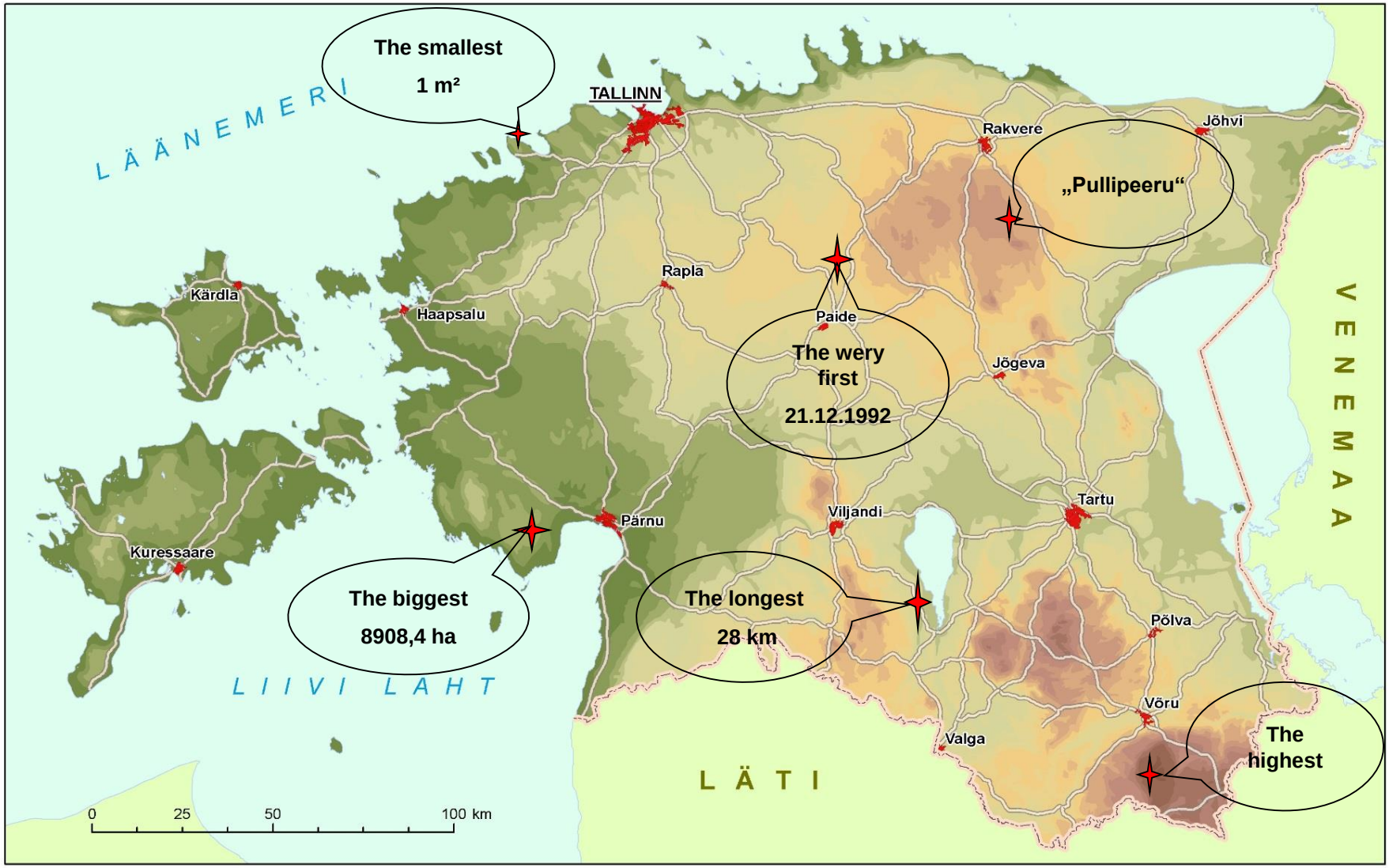
- boundaries;
- location;
- address;
- area;
- land use type;
- restrictions;
- survey data;
- valuation data;
- etc..

Data about **titles** incl.

- owner;
- mortgage;
- easements;
- transactions;
- etc.

**45 277km²**
**240 x 350km**
**1,3 million inhabitants**
**28 inhabitants per km²**

# *Estonia as we see it*



# *Scope of cadastral data*

**Cadastral parcels (as of November 2018)**

- ✓ **705 684 cadastral parcels**, i.e. **99,0 %** of Estonian land is registered in the cadastre
- ✓ **80%** of them have documents digitalized in the cadastral archive

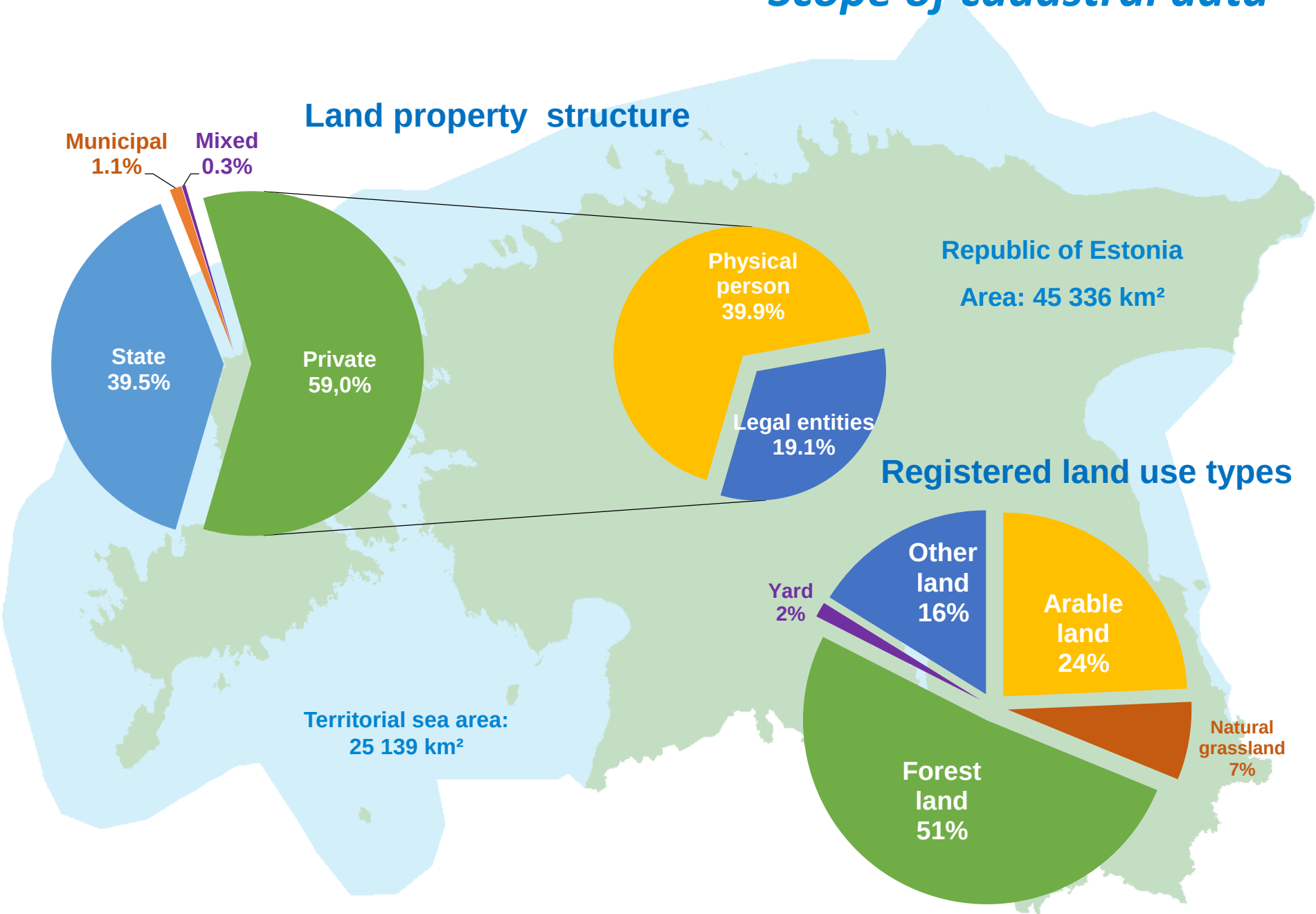
**Objects causing restrictions and zones of restrictions**

- ✓ Over **59 000 km² of area objects** (e.g. protected area, mineral deposit, etc)
- ✓ Over **142 000 km of line objects** (e.g. lines, roads, etc)
- ✓ Over **123 000 of point objects** (e.g. single objects of nature or heritage conservation)

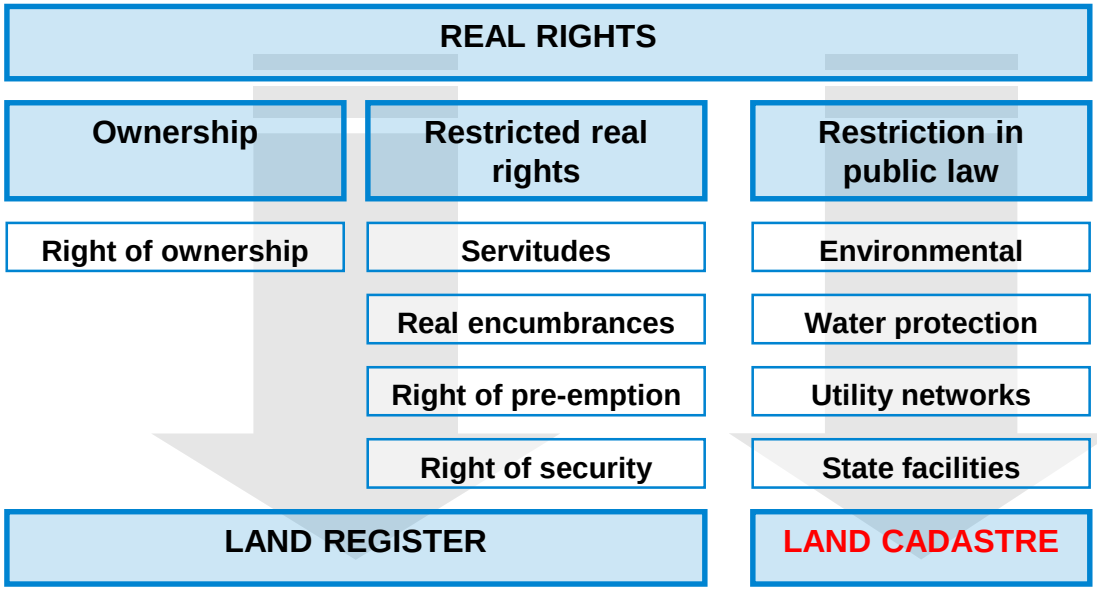
**Administrative boundaries**

- ✓ **15** Counties; **79** Municipalities; **4451** Villages

# Scope of cadastral data



# Restrictions



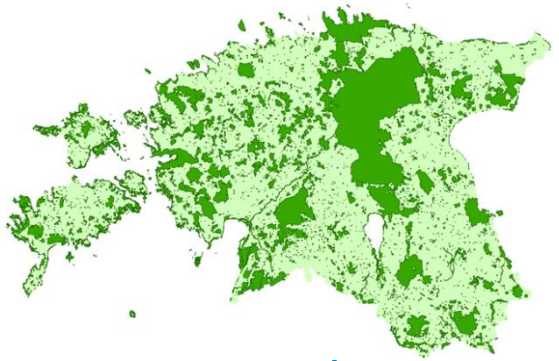

***Legal ground for restrictions***

# *Restriction information system*

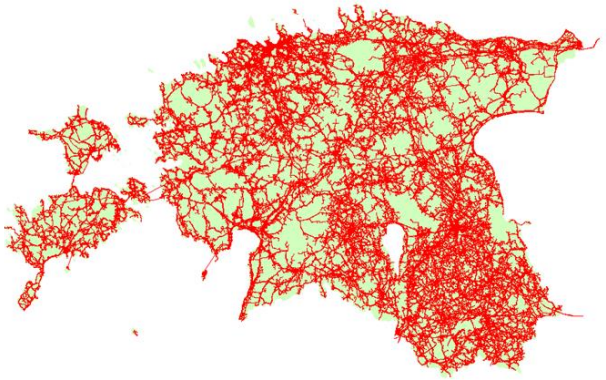
Exchange of data between:

- ✓ 7 different state registers
- ✓ 23 different utility network corporations

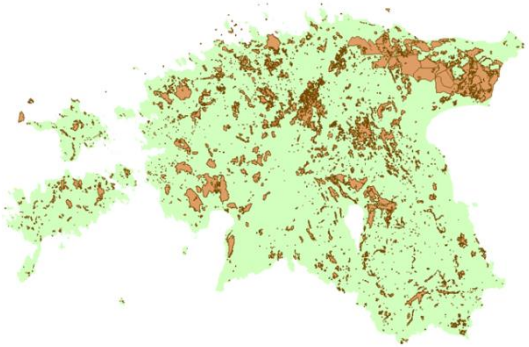
**Protected natural objects**



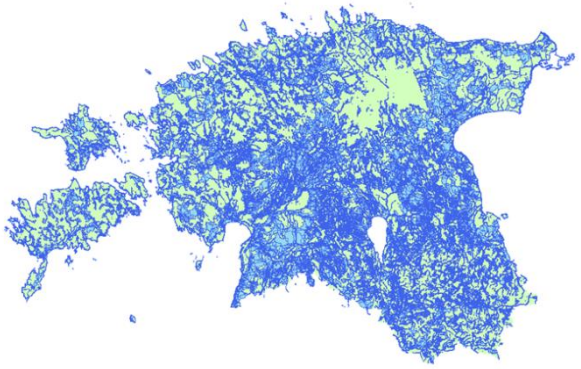
**Technical facilities**



**State essential facilities**

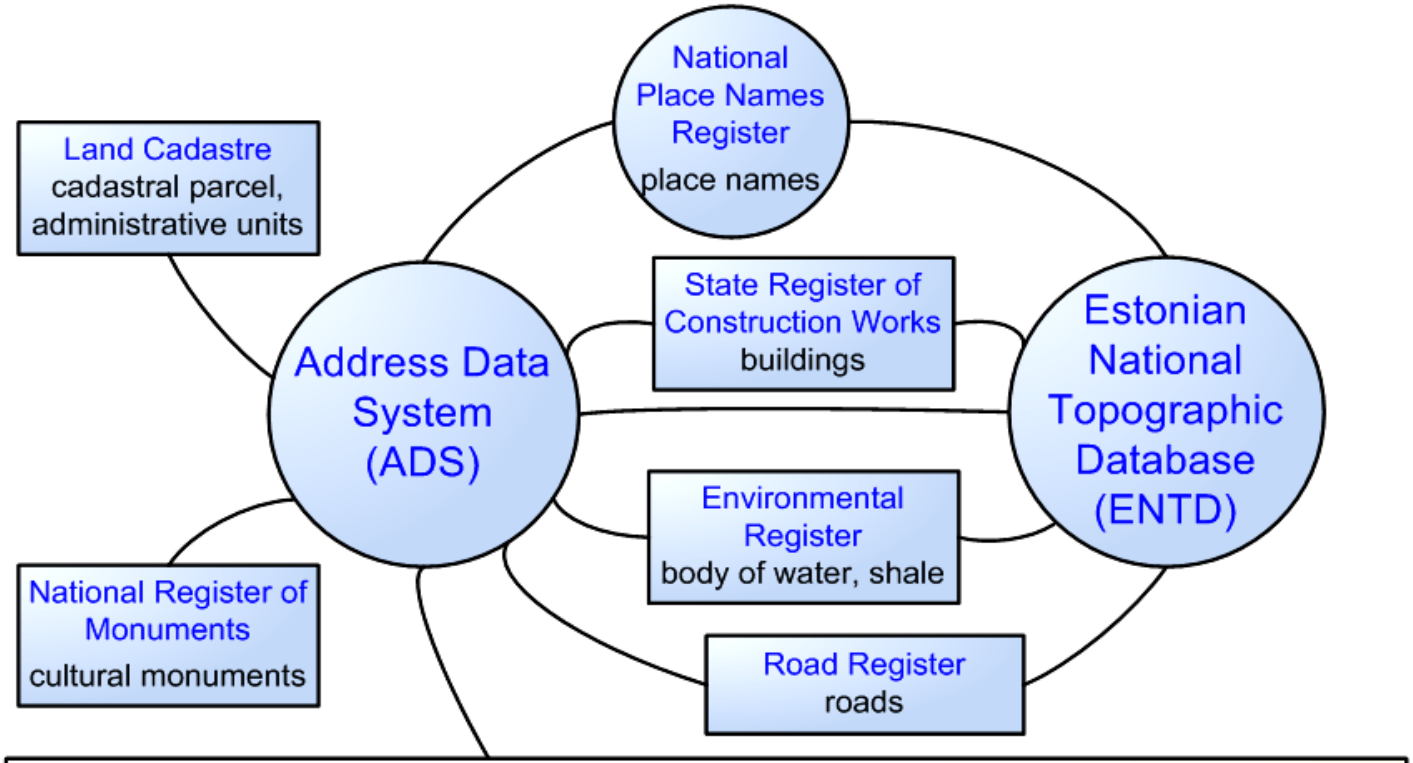


**Water protections**



***Restrictions are covered ~87% of cadastral parcels***

# *Adress Data System*




**Registers and information systems which use the data, public and private sector**

for example: Population Register, Commercial Register, Land Register, Police Information System, Rescue Board, Alarm Centre, local governments, Estonian Post Ltd, Estonian Energy Company, communication company etc....

# *Land surveyors*

Only private land surveyors in Estonia (+10 in Land Board)

- ✓ 605 licences issued during 26 years
- ✓ 354 valid licences today:
  - 215 Physical persons
  - 139 Juridical persons → no longer than July 2020!

    .....
  - 303 termless → no longer than July 2020!
  - 51 with 5 years validity
- ✓ 189


***Only 150 of them are really active today***

# *e-Cadastre functional specifications*

- ✓ Managing cadastral data must be used **open-sourced expandable software** based on baseline security system (Estonian ISKE standard)
- ✓ Identifying clients based on **ID-card** or **Mobile-ID** and able to store digital signatures
- ✓ All cadastral procedures are **paper-free** and based on digital files
- ✓ Ready for **3D** spatial data storing and representation
- ✓ Digital archive is able to store full cycles digital life of **electronic documents**

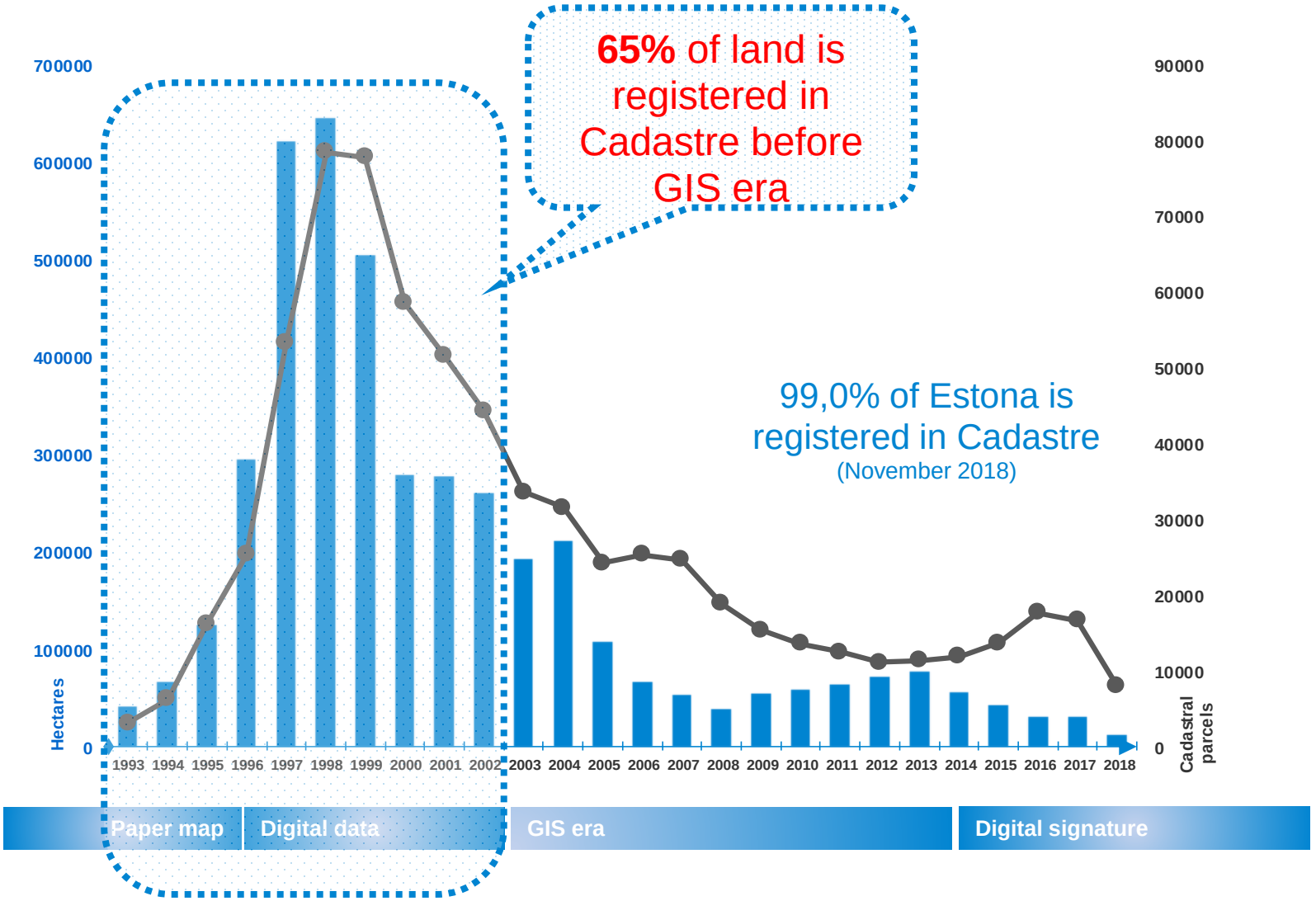
***User friendly and customizable settings***

# *e-Cadastre workbench*

- ✓ **Virtual office**, created for surveyors to manage their surveying files and submit a data to the cadaster
- ✓ **Procedure module**, created for cadastral registrar to controlling received data and register cadastral proceedings
- ✓ **Map**, created for surveyors and cadastral registrar map proceedings
- ✓ **Digital archive**, created for managing all cadastral digital files
- ✓ **Statistical module**, created for managing cadastral data statistics and observing proceedings
- ✓ **Administration module**, created for managing user rights and software settings

***All in one interface solution***

# *Why we have quality issues?*



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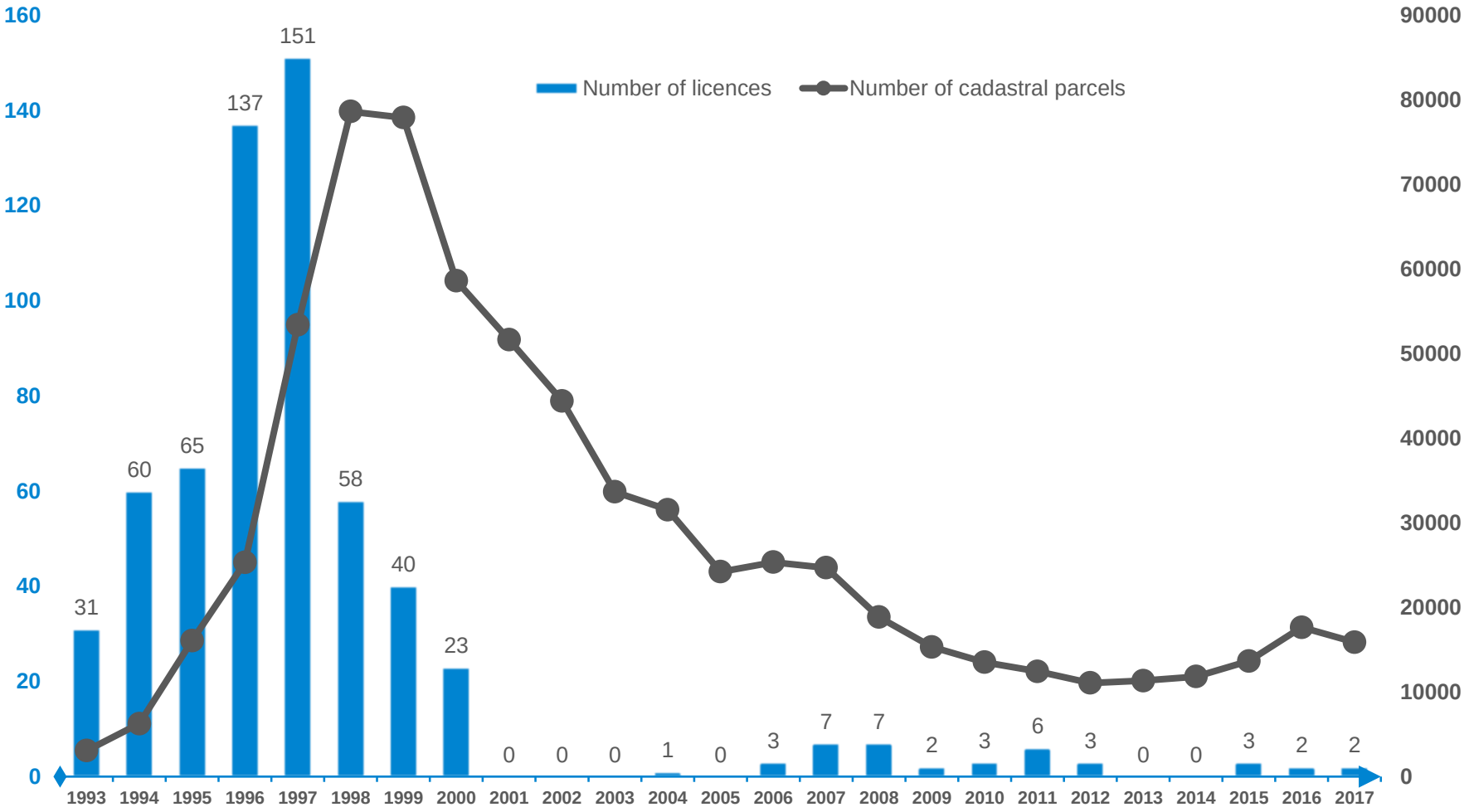
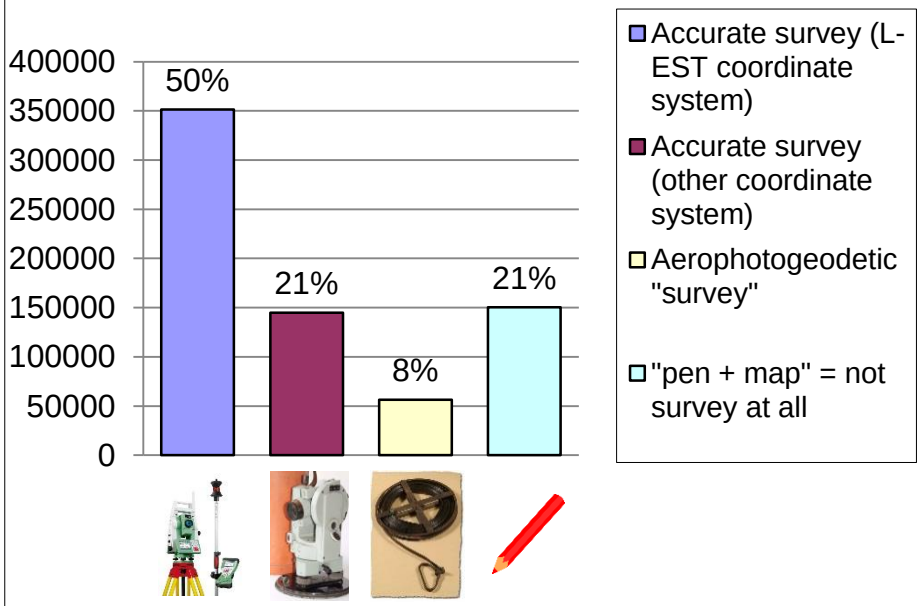


# *Why we have quality issues?*

- ✓ § 10 in old Land Cadastre Act *„The plan of the cadastral parcel is the source document proving the location of the cadastral boundaries in the cadastre“.*
- ✓ Quality vs quantity
- ✓ 4 „methods“ of cadastral parcel formation
- ✓ Inaccuracy of maps
- ✓ Outdated legislation
- ✓ Dependence on the quality of the info provided by land surveyors
- ✓ Owner’s mentality
- ✓ …

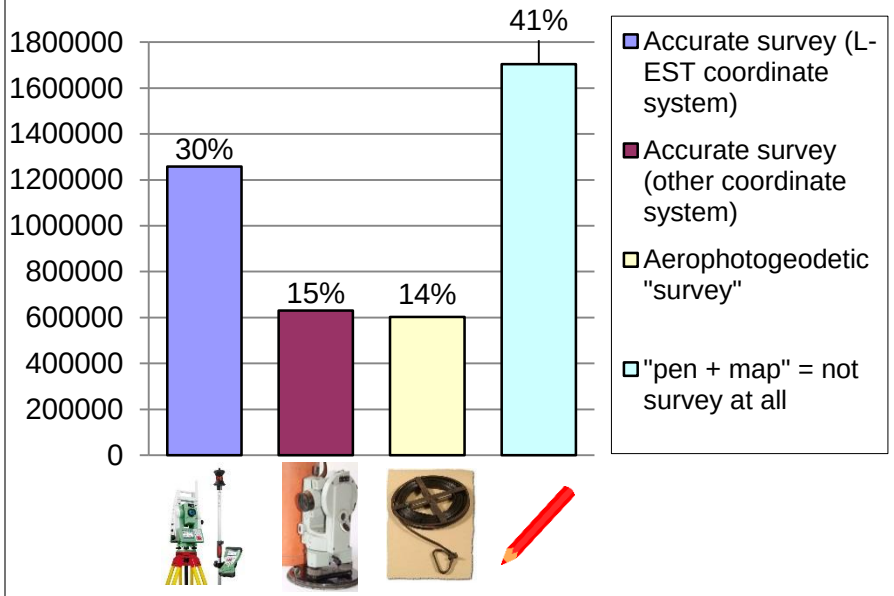
# Why we have quality issues?

### Number of cadastral parcels




***Only half of the 705 684 parcels have accurate boundaries!***

### Area of cadastral parcels

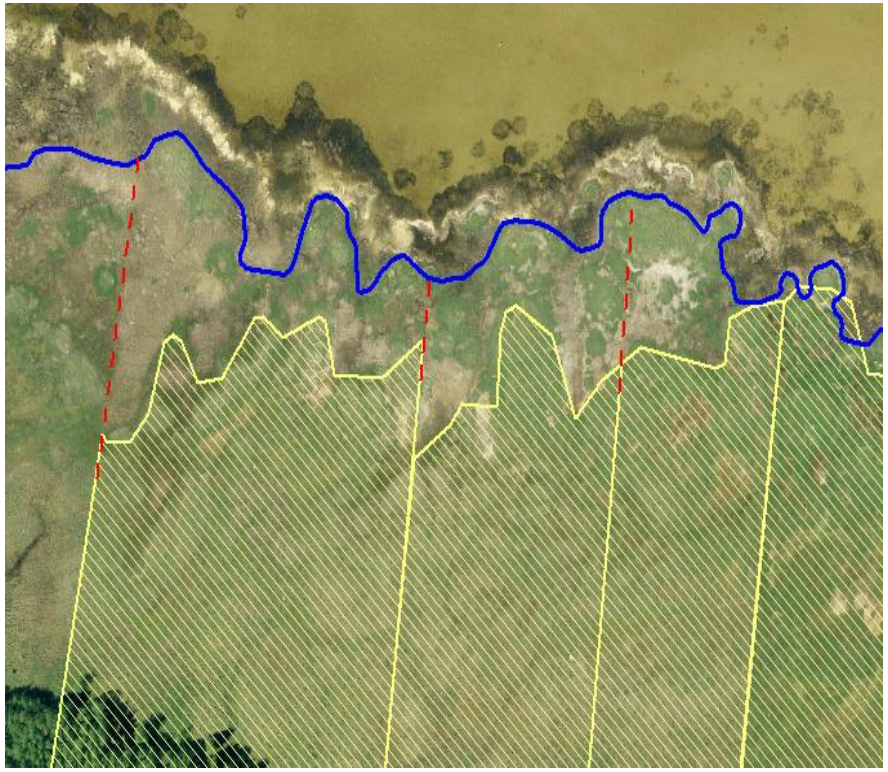


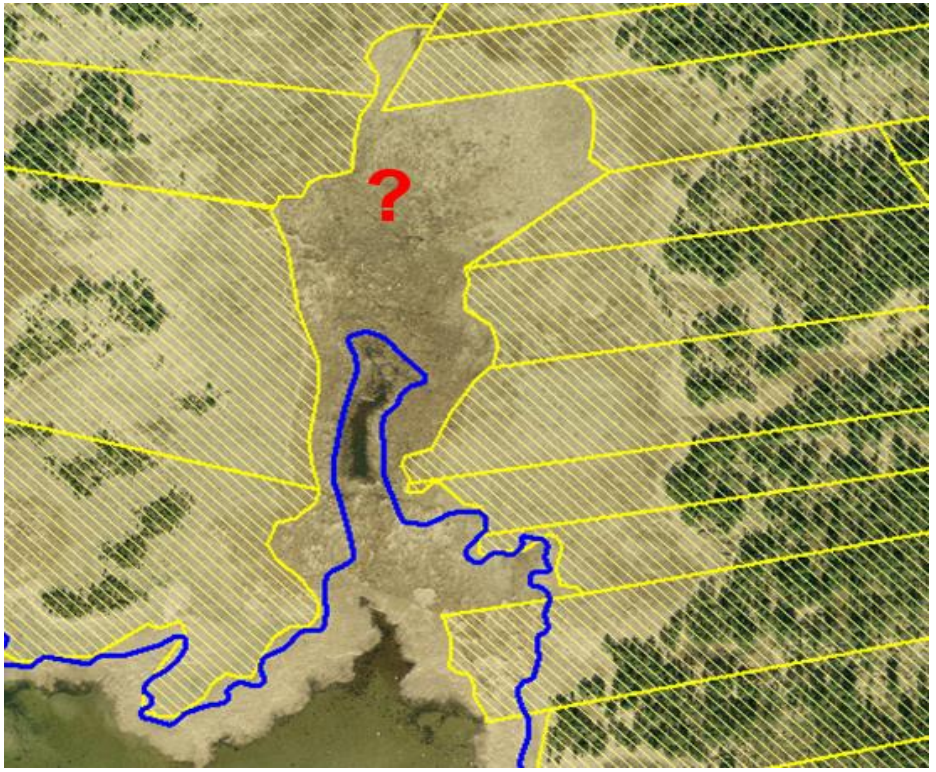

4 methods of cadastral parcel formation (the way of cadastral survey) was allowed during the land reform.

# *Quality issues*

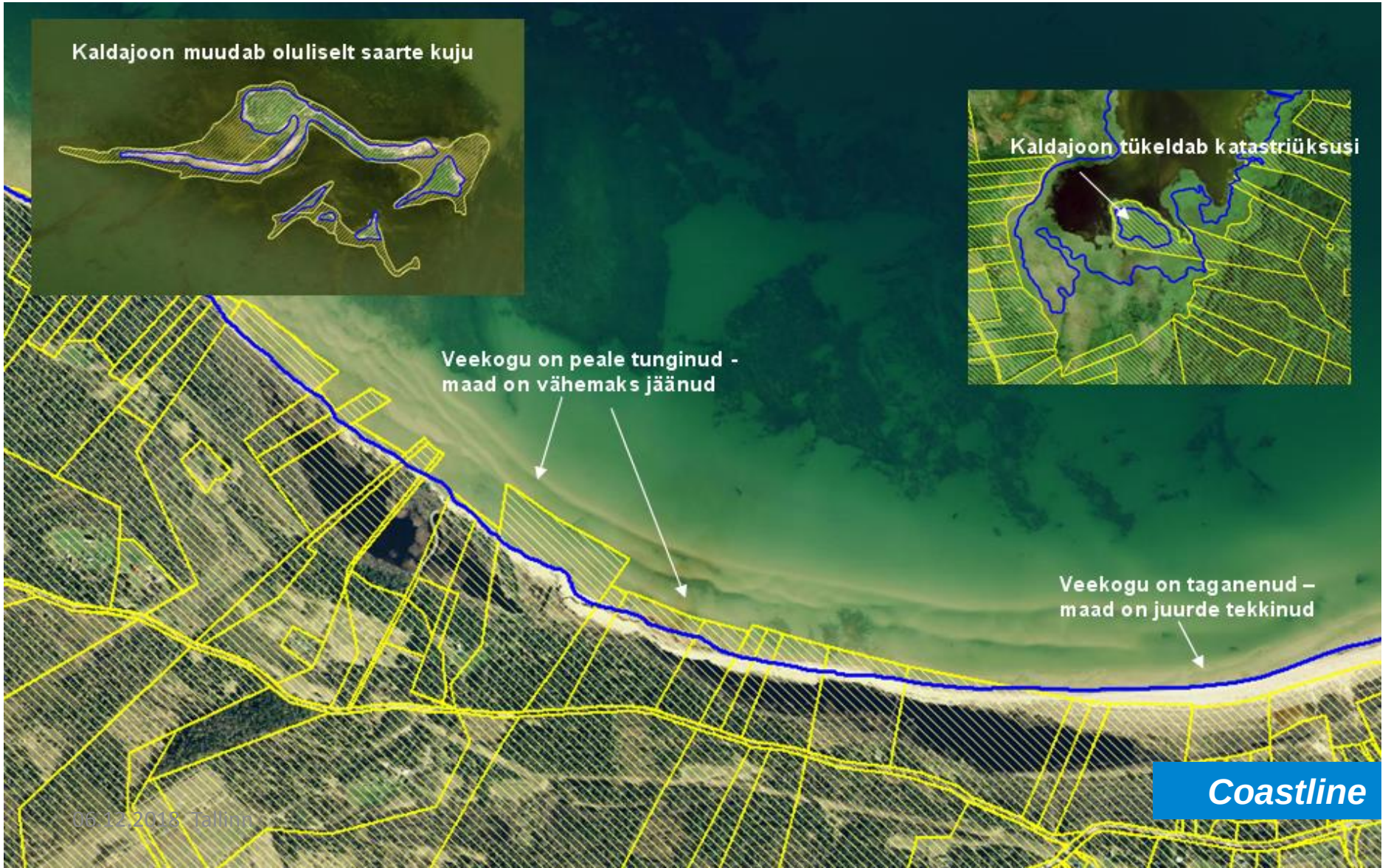
The difference in boundaries on the cadastral map and in the field

# *Quality issues*





# *Quality issues*




**Coastline**

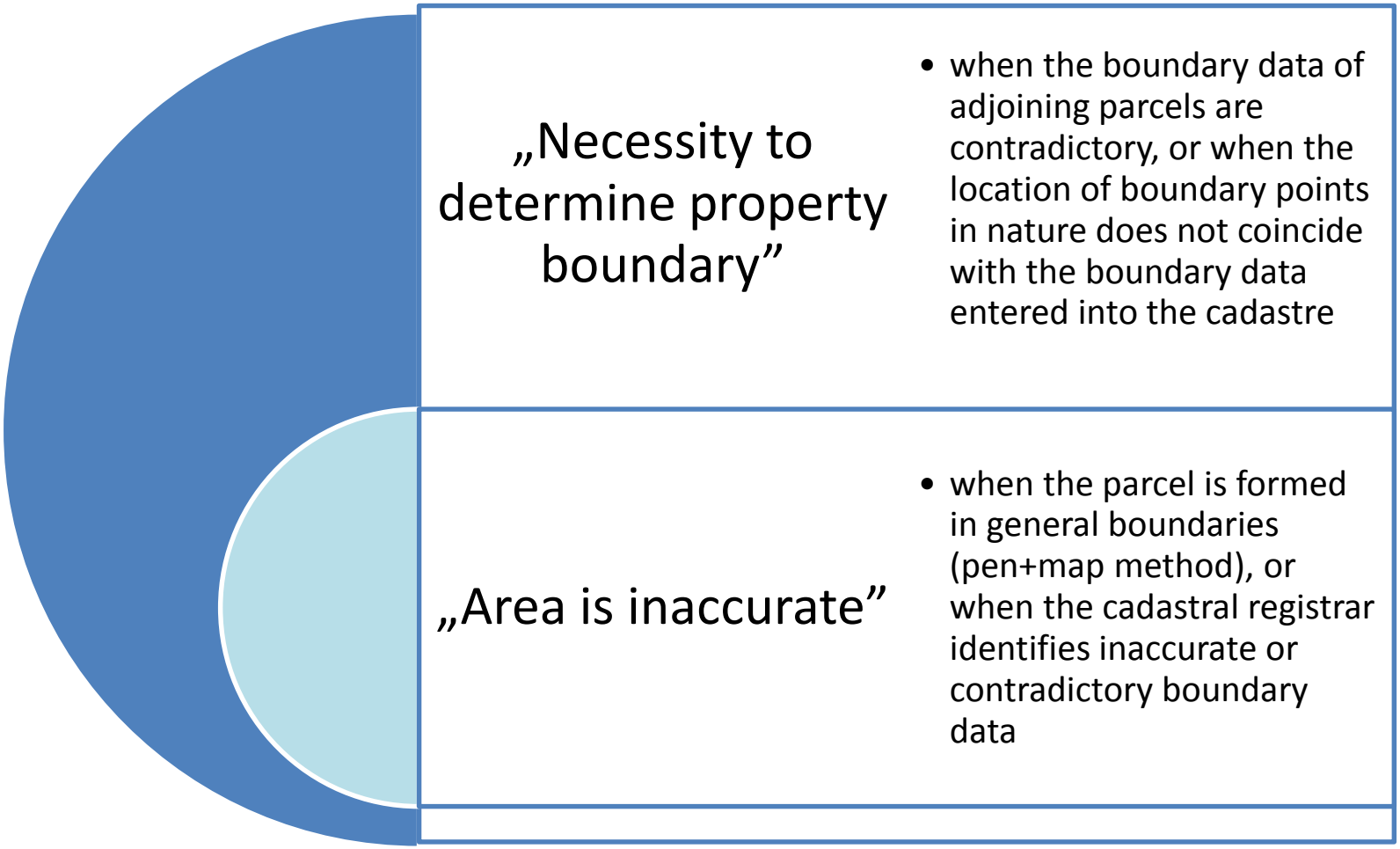
# *Quality issues*

- ✓ 11 000 overlaps on cadastral map (are they real overlaps of ownership?)
- ✓ 100 000+ „empty spaces“
- ✓ Buildings are locating on the several parcels simultaneously
- ✓ Actual area of the parcel (in the field) vs registered area (in land cadastre) = our best knowledge vs legal area.
- ✓ …

## *Legal umbrella for developments*

1. Acquisition of Immovables in Public Interest Act (01.07.2018)
2. Land Cadastre Act (amendment 01.07.2018)
3. Land Consolidation Act (amendment 01.07.2018)
4. The Procedure for the Formation of Cadastral Parcel (14.08.2018)
5. Spatial Data Act (amendment 01.07.2018)
6. Law of Property Act (amendment 01.07.2018)

**New principle - there may be several notations concerning the parcel in the Cadastre. Notations are entered into the Land Register (Title Book) as well. Notations are made public!**



**New principle – cadastral registrar has right to form cadastral parcel**

| | |
|---|---|
| Owner of immovable | • Applies for terms of parcel formation |
| Cadastral registrar | • Decides on the extent of survey and form of data submission<br>• May allow partial surveying<br>• May join or divide parcels |
| Land surveyor | • Demarcates and surveys the boundary<br>• Informs ETD of inaccuracies in nature<br>• Informs cadastral registrar of inaccuracies concerning restrictions<br>• Must introduce the boundary to the involved owners<br>• Must determine the boundary in the case of contradictory data |
| Cadastral registrar | **Forms the cadastral parcel, determines the area, determines land use/cover and registers the parcel** |

**New principle - Correction of cadastral data. The list of possibilities is much longer now.**

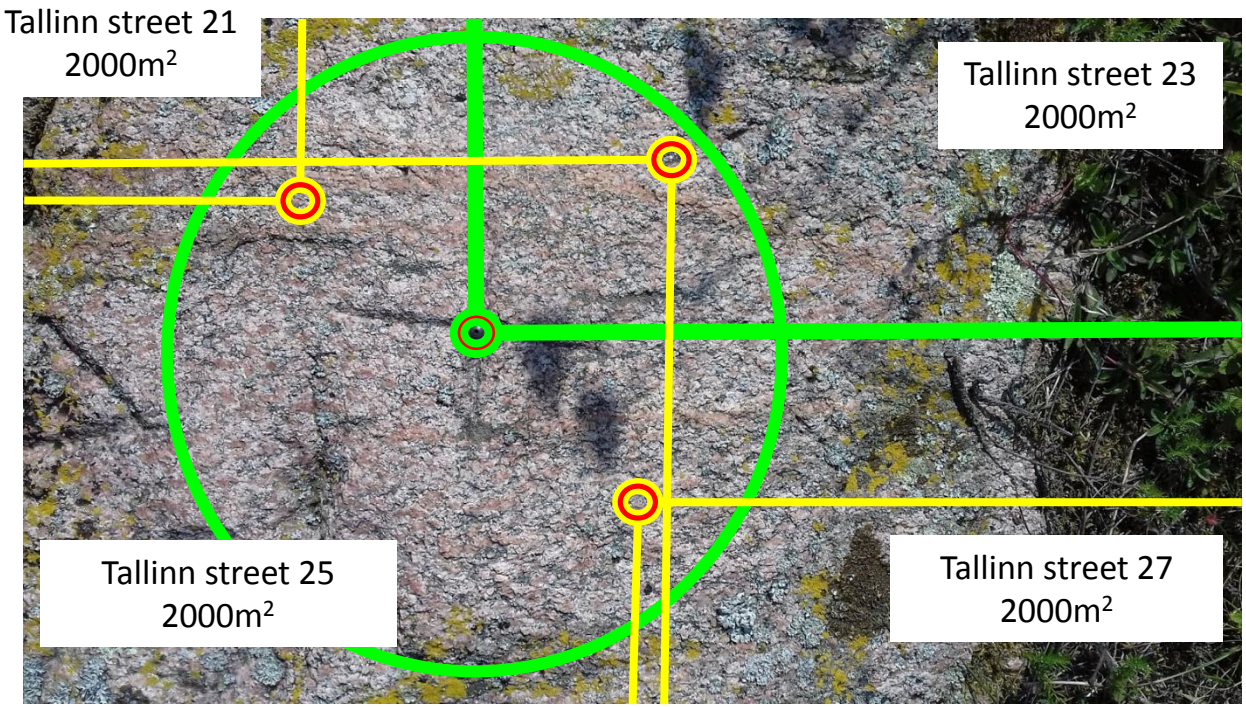
- The cadastral registrar has the right to correct cadastral data on the basis of cadastral surveys.

- The cadastral registrar has the right to correct cadastral data without a cadastral survey if the following has been established:
  1) more exact base data of the boundaries and location;
  2) variation from the geodetic network or backdrop map;
  3) a conversion mistake
  4) an error in making the cadastral entry.

- the owner of the immovable shall not be involved provided that the boundary of the cadastral unit in the field is not subject to change.

**New principle – boundary points of different parcels will be aligned**

**From two layer → one layer**



**New principle – boundary points of different parcels will be aligned**

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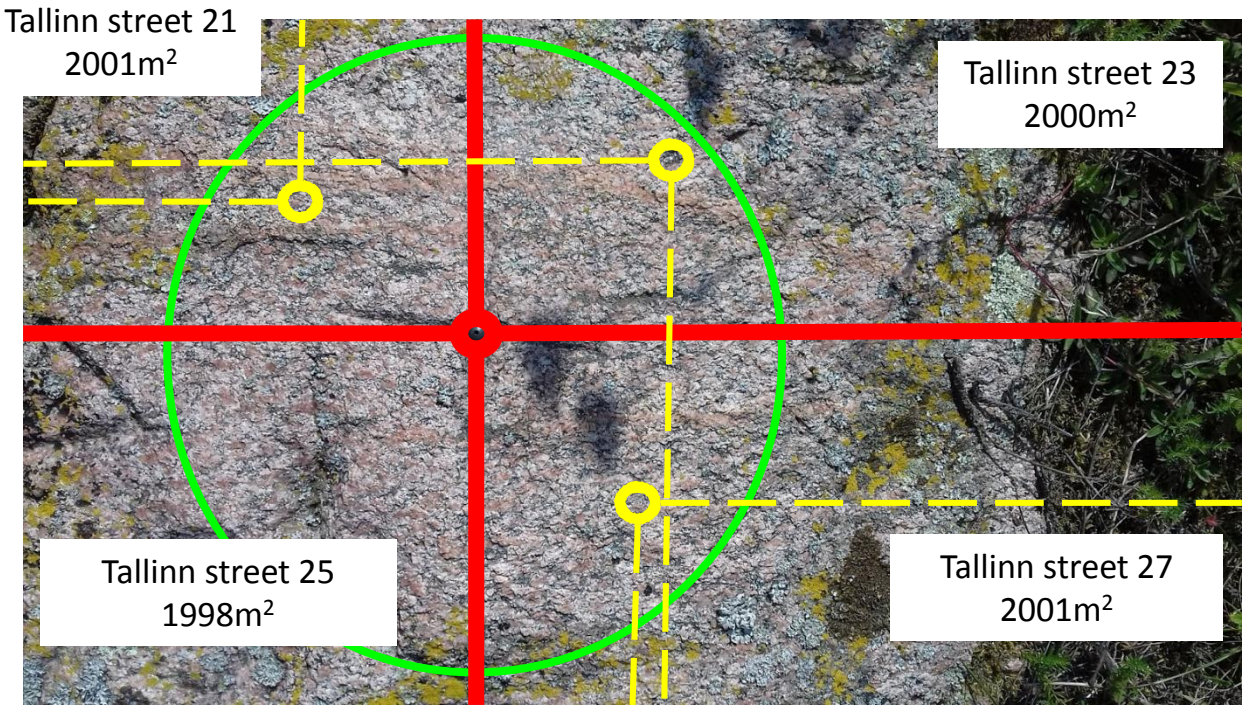
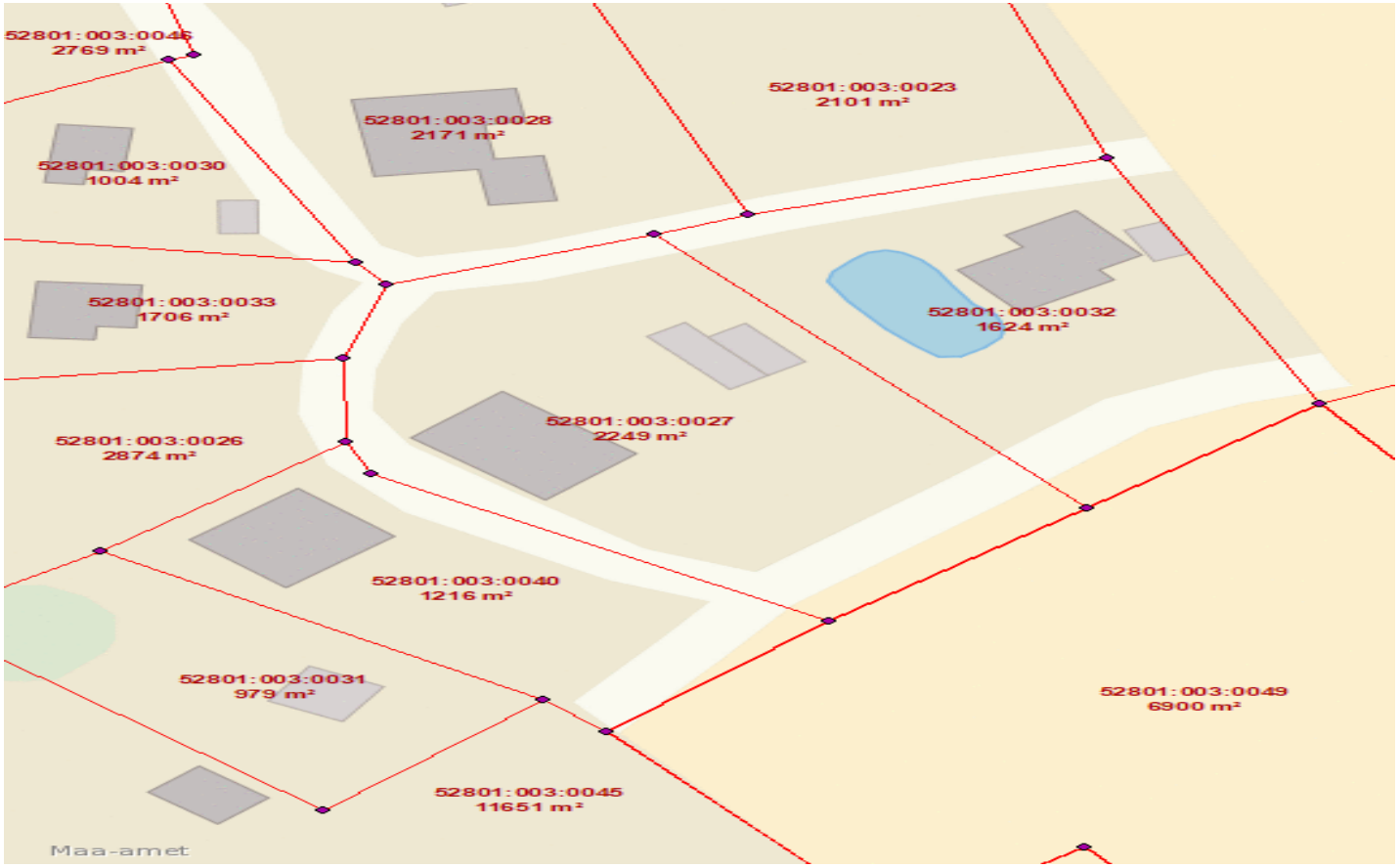
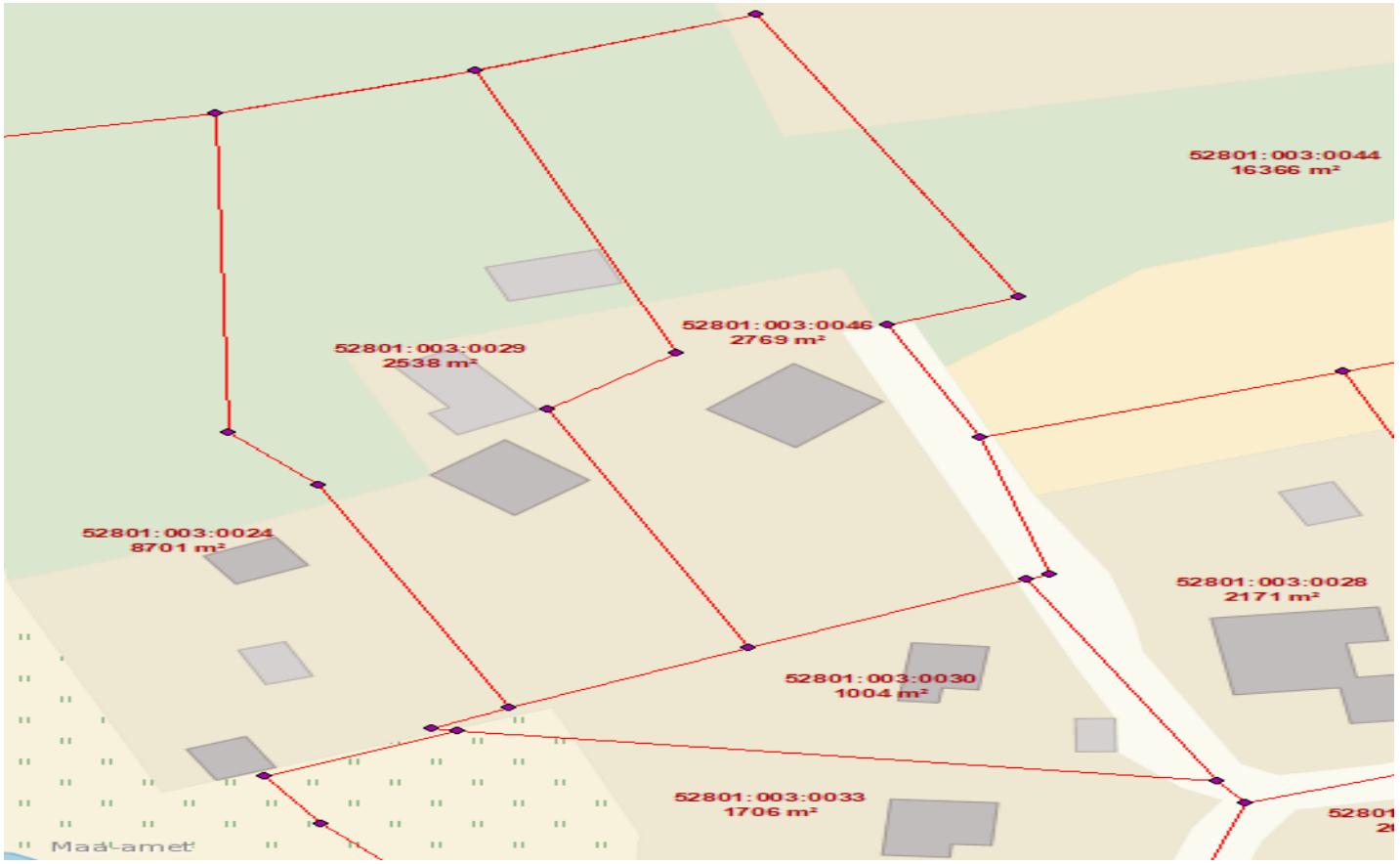


**New principle – some boundaries in the cadastral map will be matched with ETD (Estonian Topographic Database)**

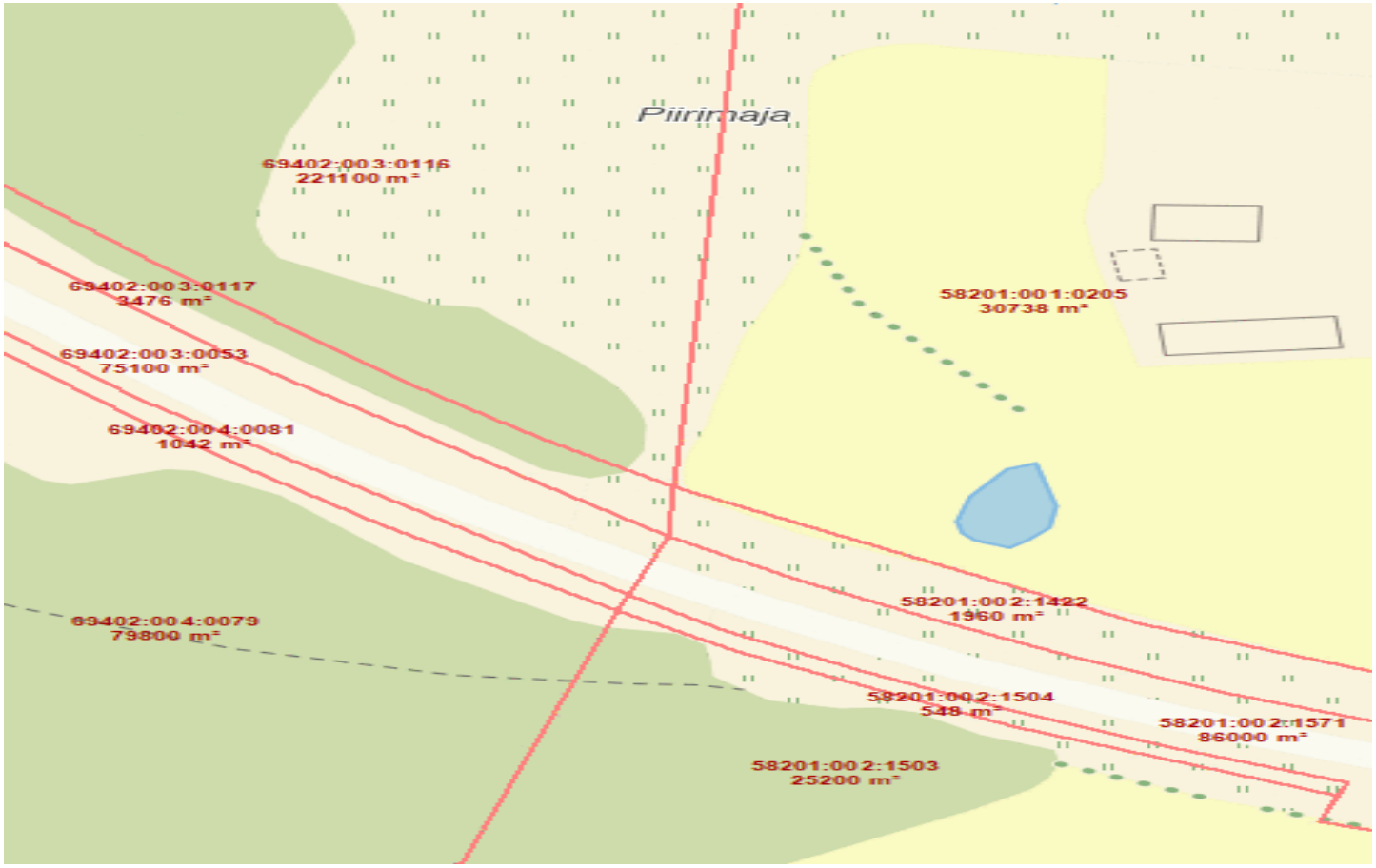
**Example 1: The cadastral registrar decides which boundary points will be surveyed**



**Example 2: The cadastral registrar may divide cadastral parcels electronically, provided that suitable base data are available**



**Example 3: The cadastral registrar may carry out land consolidation electronically, provided there is no need to determine a new boundary point in the field.**



## New principle – topographic database integrated to cadastre

- The map of land use/cover types is compiled based on the Estonian Topographic Database (ETD)
- The map of land use/cover types contains the following land use types: arable land, natural grassland, forest land, yard land and other land.
- Cadastral boundary data will be linked to topographic data to track the changes
- The areas of land use/cover types for every parcel will be calculated <u>once a year</u>


## *Open data since 01.07.2018*

- Cadastral parcel data
- Assessed values
- Areas of restrictions (areas of influence)
- Core data from ETD, Thematic datasets for entire Estonia (buildings, transportation etc.)
- Basic Map 1:10K in raster and vector format, 1:20K, 1:50K, 1:250K.
- Soil Map
- Geological Base Map
- Orthophotos since 2002 (RGB, False-color CIR, False-color forestry NRG, densely populated urban areas)
- Elevation Data (Raw LiDAR data, Digital Terrain Model, Digital Surface Model, Canopy Height Model, Shaded relief imagery

## *Challenges for future*

1. Development from registration of cadastral parcels to the environment of land procedures, which allows an easy, quick and cheap performance of land management increasing thus the turnover in the property market.
2. Land consolidation module development in e-Cadastre workbench.
3. Approvals module (for different authorities) development in e-Cadastre workbench.
4. Visualization of all kind of restricted real rights (servitudes, encumbrances) having spatial extent.
5. From July 2020 only physical person can be cadastral surveyor.
6. Ongoing communication.

# *Are they land surveyors?*

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REPUBLIC OF ESTONIA
LAND BOARD

A hundred years of the Republic of Estonia

# Thank you for attention

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