

## DEVELOPMENT OF BUSINESS PROCESSES FOR THE LAND INFORMATION SYSTEM TO THE SUBSIDIARIES OF “ROSNEFT”

М.А. Снегирева

Научный руководитель: Напршкин А.А.  
Томский политехнический университет  
militta.anj@gmail.com

### INTRODUCTION

Geographic information systems and technology (GIS) are an integral part of the global informatization of our society. Today, these systems help to solve many problems related to the analysis and spatial and attribute data processing in almost all areas of human activity: politics and economy, science and education, health and ecology, defense and public peace protection, management and planning. The sphere of land development and land management is one of GIS priorities, and land management was first where GIS took its rise in. Geo-information component in the form of a Land Information System (LIS) is intended to work with data of land management and land cadaster of Tomsk region.

### LAND MANAGEMENT MAINTENANCE

#### *Land management*

**Land management** – is a scope of activities connected with land condition analysis, planning and organization of land use management and its protection, the definition of the location and (or) the establishment of land management objects boundaries, organization of rational land use in agricultural industries by citizens and legal entities, and organization of areas used by communities of small Indigenous folks of the North, Siberia and far East of the Russian Federation and certain people belonging to indigenous folks of the North, Siberia and far East of the Russian Federation, for their traditional way of life (farm boundary adjustment) [1].

Land surveying work (land management) is carried out to establish, reinstate and assign land ownership and land use borders, to estimate the actual area and location of land boundaries. The basic document of the land management process called “Land file” (from 2008 “Land plan”) is passed on the stage of land cadastral registration.

**Land Plan** is a document drawn up on the base of the proper area cadastral plan or proper landed area cadastral extract which includes specified data about forming land (lands) or a part (parts) of a land introduced in property state cadaster or new specified data about land (lands) necessary for entering in property state cadaster [2].

Land management is one of stages of land state cadastral registration. Geodetic engineering is the first stage when registering title to land, since land cadastral passport (cadastral plan) is made on a base of it.

**Cadastral passport** – in an extract from the property state cadaster, which contains data about the property and which is necessary for state registration

of rights on immovable property and transactions with it [3].

When taking territorial management land boundaries are being estimated and conformed and actual land area is being calculated. Land plan is obtained as a result of the territorial land management and sent to the Federal Service for State Registration, Cadaster and Cartography agencies for endorsement and inclusion in the Unified State Land Register.

#### *Allotment forming*

To get an access to the land it is necessary to start a process of land allotment and withdrawal for mining activity on the basis of the Land Code of Russian Federation Article 27 item 1 and Article 24 respectively.

According to mining and land laws the right to use subsurface resources is not accompanied by the right to use the land necessary for activities of subsoil use. In addition, after the issue of subsoil area license government practically does not have an obligation to support a subsoil user in the process of acquisition of the necessary rights to the land.

At the pre-licensing stage the preliminary endorsement of the proper land allotment for the purpose of subsoil use is carried out with the land management agency or with the owner of the land (article 11 of the Russian Federation Law “On subsoil”).

The land allotment in the final boundaries and registration of subsoil user land rights are implemented after mining lease receipt, approval of subsoil use and land reclamation plans, and restoration of previously used area (article 11 of the Russian Federation law “On subsoil” and article 83 of the Land Code of Russian Federation). It is prohibited to work on the land without rights registration (article 125 Land Code of Russian Federation), and to construct and reconstruct objects before the approval of the land project and the land allotment as well (article 43 Russian federation law “On environment protection”).

#### *Land information system*

Land information system is a geographic information system (GIS) of land-resource and land-cadaster specialization.

In practical tasks the concepts of GIS and LIS are sometimes equalized. For example, GIS, in some sources, is referred to Geographic Information System, in others – to Land Information System. Therefore, it is necessary to divide the concept of GIS and LIS used in State Land Cadaster (SLC).

**Information system** is organizationally ordered set of documents and information technologies, implementing information processes.

#### LAND INFORMATION SYSTEM FOR "TOMSKNEFT"

Land Information System is based on a large number of shortcomings in the process of land documents management:

- Non-transparency of technological process in terms of data. The quality of the process strongly depends on the human factor, it is impossible to track the history of documents modifications.
  - It is impossible to fully monitor the process of conducting land issue (documents), including tracking their status during the life cycle and the location in the data set.
  - The cumbersome approval procedures and the process of documents confirmation.
- The Land Information System will solve the following processes:
- Establishing a unified database of projects and their sites;

- Formation of a unified repository of land documents: title and certifying documents, cadastral documentation and other documents arising during cadastral operations and land rights registration.

- Documents retrieval by projects and sites belonging to them.

The new system will allow user to solve the following tasks:

- Create projects in LIS;
- View and edit projects and sites data;
- Attach documents to sites and projects;
- Retrieve documents;
- Transfer projects and sites through stages;
- Unload map data.

Modified Land Information System will organize the data synchronization between geodatabase of two subsidiaries of "Rosneft" company.

According to all tasks a new business-process of Land Information System of "Rosneft" subsidiaries was developed (Fig. 1).

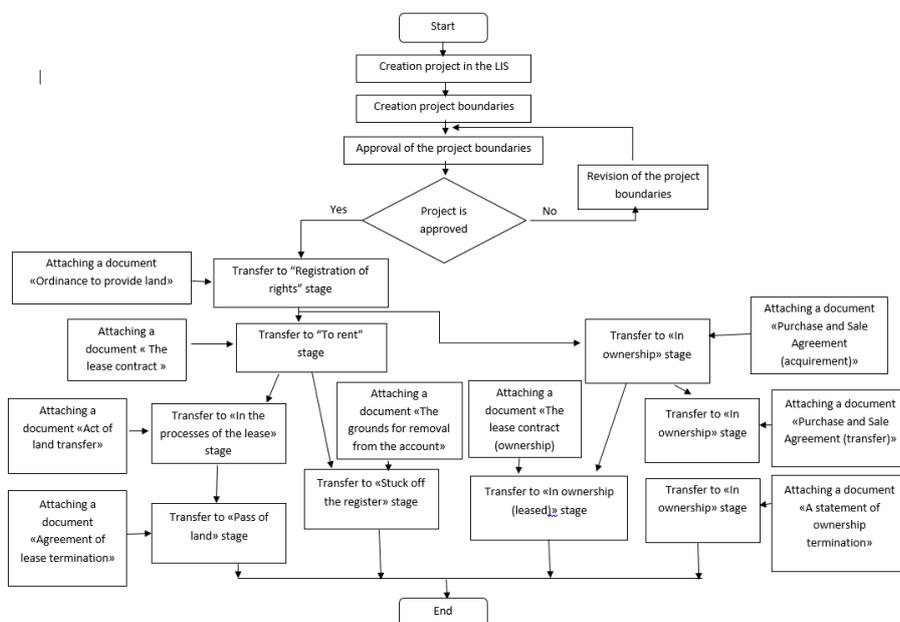


Fig. 1. The main business

#### CONCLUSION

Keeping land management is not a simple and definite process. Every subject of the Russian Federation has its own methods of land document management. For its organization in each company individual approaches and tool are used. Despite the fact that paper and mail organization is already out-of-date it still takes place in some companies.

The Land Information System was introduced in subsidiaries of "Rosneft" to simplify the conduct of land management affairs. This system allows simplifying processes of projects management. Land Information System will simplify the complexity of business processes of land and documentation development and maintenance. In addition, it will reduce the impact of

human factors, automating land and projects life cycle management as it possible.

#### REFERENCES

1. Землеустройство // Управление федеральной службы государственной регистрации, кадастра и картографии. URL: <http://to70.rosreestr.ru/kadastr/zemlya/zemystr>.
2. Межевой план земельного участка // Правовой центр «Два М». URL: <http://www.2m.ru/content/service/cadastral/4.php>.
3. Кадастровый паспорт // Единый центр документов. URL: <http://www.7771000.ru/info/kadastryj-pasport-idx-661>.
4. Роснефть. URL: [http://www.rosneft.com/about`](http://www.rosneft.com/about)