
STRATEGIC PLAN OF THE AGENCY FOR REAL ESTATE CADASTRE FOR THE PERIOD 2017 – 2019

1. INTRODUCTION

The strategic plan of the Agency for Real Estate Cadastre (hereinafter – AREC) for the period 2017 – 2019 is prepared pursuant to Article 4, paragraph (2) of the Law on Real Estate Cadastre.

AREC, by improving the administration and management of land, orients efficiently and effectively towards the users, by supporting the socioeconomic development of the Republic of Macedonia. Since 2007, AREC has been successfully working with strategic business plans as a method to improve its activities. The purpose of this document is to develop a strategy for AREC for the period 2017 – 2019 which will be focused on the users, creating an efficient, reliable and secure electronic geo-cadastral information system (hereinafter – GCIS), as well as strengthening the institutional capacities.

The transfer of the strategic issues and conditions into the business goals provides a practical framework, as well as basis for the annual planning of the work of AREC.

The display of the strategic plan is based on a logical method which progresses step by step:

- Description of the current state of AREC, which also includes an analysis of the strengths and weaknesses, opportunities and threats (SWOT – analysis) where all of these elements were identified;
- Description of the surrounding business environment and trends, including relevant laws, policies, directives and plans, identifying the customers and other factors including their situation and requirements, as well as identifying the stakeholders and
- Defining the desired future state of AREC, including the vision and strategies – and most importantly – identifying the long-term and short-term goals, activities (including identification of who will do what and when), necessary resources, organization and requirements for reports on the job.

**Mission**

AREC is a service–oriented institution which provides secure and efficient access to digital data from the GCIS through e–services, electronically maintains the Real Estate Cadastre and the Cadastre of infrastructure facilities, establishes an Address Register and a Register of construction land, creates conditions for the establishment of mass assessment and 3D Cadastre, establishes and maintains public access to the National Spatial Data Infrastructure, strengthens the human resources and capacities in order to adequately meet the requirements of the new programs, systems and methods, aiming towards a complete self–financing.

**Vision 2019**

AREC is a contemporary self–financing institution with fully established primary and secondary business processes that enable the exchange of high quality and updated digital data and services at national and regional level, contributing to the economic growth and development of society.

**2. TASKS AND RESPONSIBILITIES OF AREC**

Within its competencies, AREC has an impact on the strategic priorities of the Government of the Republic of Macedonia, and they are:

- Increasing the economic growth and the employment rate, higher living standards of the citizens and a better quality of life and
- Integration of the Republic of Macedonia in the European Union and NATO

The strategic priorities of the Government of the Republic of Macedonia which are in correlation with AREC are:
- Integrated, efficient and modern operation of the administration and provision of services which are fully adapted to the citizens and the business community

Pursuant to the Law on Real Estate Cadastre, AREC is competent for:

- Management of GCIS;
- Performance of basic geodetic works;
- Survey of real estate in service of the Real Estate Cadastre;
- Survey and maintenance of the state border;
- Performance of geodetic works for special purposes;
- Establishment and maintenance of the Real Estate Cadastre;
- Establishment and maintenance of the infrastructure facilities as part of the Real Estate Cadastre;
- Mass assessment of the real estate registered in the Real Estate Cadastre;
- Establishment and management of the Graphical Register of Construction Land;
- Production of topographic maps;
- Keeping a Register of spatial units;
- Keeping a Graphical register of streets and house numbers;
- Establishment, maintenance and provision of public access to the National Spatial Data Infrastructure in accordance with a separate law and
- Monitoring the performance of the sole proprietors, authorized surveyors and trade companies for geodetic works.

AREC operates on the principles of legitimacy, expertise, efficiency, transparency, service orientation, professionalism and responsibility for the work that it carries out and the results that it achieves.

The established Real Estate Cadastre on the entire territory of the Republic of Macedonia, as well as the fast and quality maintenance, undisputedly contributes to the improvement of the legal security for foreign and domestic investors and to the decision – making to invest in the Republic of Macedonia. The growing number of foreign and domestic investments, especially Greenfield investments, have a direct impact on the first priority of the Government of the Republic of Macedonia, i.e. increase of the economic growth and the competitiveness on a permanent basis, higher employment rate, higher living standards and better quality of life.
3. SPECIFICITY OF AREC

It is necessary to improve the services of AREC in order to meet the needs and demands of the society in a better way. In general, the services should be transformed into modern, market–oriented services which will focus on the customers and their needs and demands in order to provide accurate, high quality and timely services and products in accordance with the modern principles and trends. For successful implementation, it is important to understand the global trends in the field of information and communication technologies and systems for land administration.

The global and European trends in the field of geospatial data are aimed towards opening data from the public sector and creating services for the customers, by establishing a service–oriented architecture. These initiatives are affecting the national, and the regional, European and global level.

At national level, it primarily involves horizontal linking of the institutions. At regional, European and global level, it involves linking of the existing basic national services with the regional and European and global consumers. This enables the private sector to build applications based on rich sources of geospatial data, referent at European level, for the needs of business and citizens, which consequently involves a pan–European cooperation on different levels.

The initiatives of the directive for reuse of the public sector information, the INSPIRE Directive, development of services for global monitoring in order to protect the environment, management of global geospatial data (UN-GGIM) for Europe and the Digital Agenda of Europe are aimed at:
- Building a digital European market with the use of geographic information;
- Establishment of interoperability and standardization through a combination of the national data sources;
- Creating trust and security by building authoritative data sources and
- Establishment of global mechanisms for management of the geospatial information.

The directive for reuse of the public sector information, which was adopted in 2013, is aimed at enabling the use of public sector information for commercial and non-commercial purposes. The directive provides that the information must be available for reuse, and it must be done under non-discriminatory conditions. The directive for public sector information was reaffirmed in May 2010 with the promotion of
the Digital Agenda for Europe, as its component. In this context, the term “open data” means provision of free and accessible data without restrictions that can be used for different types of innovative applications. The purpose of this policy is that the government data is made available for purposes other than those for which they were collected. This is one of the main bases of the policies of the EU Digital Agenda. The provision of information without a compensation from the Cadastre has its financial consequences. The dilemma remains about which data would be considered open data, and questions remain regarding the right to privacy, the impact of the market and the finances. Namely, the open data represent a financial burden for the institutions responsible for such data. One of the options for facilitation is to fund these costs with the government budget. All these questions should have been answered in the “plan for implementation of open data”. Hence, AREC should prepare an analysis of the barriers identified in the publication of the data from the register of REC, and it is necessary to identify the legal and financial risks, the right to privacy and the impact of the market. Open data are data generated by bodies and institutions from the public sector in the process of performing their duties, and which are published in order to be used by legal and natural entities for the development of new information, contents, applications or services.

The use of open data should encourage:

- Innovations and development of new information, contents and applications by combining or crossing the data;
- Creation of new services, employment and social participation;
- Improvement of the quality of the public sector data;
- Development of the information society in the Republic of Macedonia

Within the platform for open data of the Ministry of Information Society and Administration, AREC participates with two data sets, and: statistics by municipalities and a pricelist. Given that the number of institutions and datasets which are available on the open data platform is large, AREC should have a clear vision of which new sets should be placed on this platform as open data considering the benefits of the open data concept.

E – Government and interoperability

The Agency for Real Estate Cadastre is a participant in the project “Interoperability as a provider and recipient of services”. AREC participates with 5 services regarding the provider of services part, and:

Regarding the recipient of services part, AREC receives services from the Central Register for the current situation. Given that the number of users and services on the Interoperability platform is growing, AREC should consider which new services would be beneficial for AREC to integrate in its system. The initiative of the United Nations to manage the global geospatial information (UN-GGIM) aims at establishing a single agenda for development of global geospatial information and use of data for resolving key global challenges. The main objectives of the UN Committee are to promote the common principles, policies, methods, mechanisms and standards for interoperability and transboundary exchange of geospatial data and services.

On the fourth forum of the United Nations for management of global geospatial data (UN-GGIM held in Addis Ababa, Ethiopia, from 20 to 22 April 2016) the participants published – the Addis Ababa Declaration – from management of geospatial information to good land management. The Declaration represents a platform for implementation of the Agenda 2030 – Global land management and sustainable development. Through this declaration the member states reaffirm again the importance of the ownership right and the use of land as a basic human right. It was found that a prerequisite for implementation of the Agenda 2030 is the introduction of modern systems for land management, and the established land administration represents a backbone in the process of implementation of effective government policies. AREC is a member of the United Nations for management of global geospatial information – UN-GGIM for Europe since its founding. The European spatial data infrastructure represents the establishment of a base for geospatial services that enable easy access to the authoritative geographic referential data. In this regard, special attention is paid to the quality of the delivered services (availability, performance and capacity), in order to make it easier for the consumers to use the spatial data infrastructure. The EULIS – initiative involves establishment of a European land information service that provides a single access to the European electronic information related to real estate. This provides access to the real estate services from the national portals through a single portal based on the EULIS – platform. The development of the transnational exchange of real estate information from the national registers and its integration into a wider European context is recognized by the European Commission. The access to this data enables the business sector to get involved in the management for industrial risks, production of maps for forecasting hazards and for financial services, such as insurance services. It
is evident that the European businesses are seeking a wider access to the cadastral database, as well as to property data.
At the World Cadastre Congress in Istanbul on 23.04.2015 the Istanbul Declaration on Cadastre was signed, and one of the signatories was AREC.
The text of the declaration is based on the statements of the United Nations and the FIG – International Federation of Surveyors. Through this declaration of the World Summit a global call was sent to all countries about the importance of establishing a functional Cadastre that should guarantee ownership, reduce land conflicts, support the taxation of real estate, provide guarantee in lending, improve urban planning, infrastructure and environment development in order to obtain a sustainable development of society as a whole.

**Participation of AREC in European projects**

EuroGeographics is a nonprofit association of national agencies for Cadastre and cartography in which over 46 European countries are members and whose aim is the cooperation and exchange of knowledge and best practices in the field of geographical information, Cadastre and land registers.
AREC is a full member of this association since 2007 and is actively involved in the projects related to the production of pan-European products, and EuroBoundaryMap, EuroGlobalMap and EuroRegionalMap.

**Global mapping**

Global mapping is an international initiative whose aim is the development of homogenous geographic datasets in order to contribute to the sustainable development on a global level. The provision of a basic framework set of geographic data enables the monitoring of environmental changes in the world. As of 2016, this initiative is directly coordinated by the United Nations. Following the European trends, AREC aims to establish a modern GCIS based on standardized digital data and information which will enable access, use, distribution and publication in electronic form signed with a valid certificate. AREC currently administers over 712 contracts for the use of the e-counter service, administers the contracts for the use of WMS – services, the WACH – DOG – service, contracts for the use of MAKEDIT – software, contracts for the use of the MAKPOS – system. Currently 167 legal entities participate in the system, contracts for the use of the software for transformation of coordinates MAKTRAN. At the end of 2015, AREC promoted the distribution system [http://ossp.katastar.gov.mk/OSSP/](http://ossp.katastar.gov.mk/OSSP/) that enables access to data from the Real Estate Cadastre, geodetic and cartographic data, as well as data from the register of spatial
units for the whole territory of the Republic of Macedonia. By 30.06.2016, this date inclusive, there was a total of 5266 requests on the portal made electronically with a total of 10 360 products in electronic and/or hard copy from legal and natural entities. The activities of AREC in the following period should contribute to an increased customer satisfaction by enabling faster Internet services. They will also contribute to the increase of the transparency and the use of digital plans and cadastral data. The data are necessary for spatial and urban planning, social services, environmental protection, etc. In performing its reform activities, AREC follows the principles of modern commercial work, continuous improvement of services and institutional development in order to transform itself into a modern and efficient national Agency for Real Estate Cadastre, based on financial independence and aims towards self-financing.

In order for AREC to achieve its goal and become service and customer-oriented, it is important for it to focus on the current and future users and their requirements.

3.1. ANALYSIS OF THE STRENGTHS AND WEAKNESSES, OPPORTUNITIES AND THREATS (SWOT)

3.2. Strengths:

- A unique institution for management of GCIS;
- Established and integrated Real Estate Cadastre in the Republic of Macedonia;
- A new modern and efficient electronic cadastral system implemented on the entire territory of the Republic of Macedonia;
- Implemented ISO standard;
- A functional system for electronic payment of services (POS terminals and internet virtual POS);
- Digitally integrated alphanumeric and graphical data for the Real Estate Cadastre in a single centralized database;
- Enabled online access to the data of AREC;
- Operational electronic counter for professional users;
- Established digital archive for the period from 2014 to the present;
- Established system for electronic management of resources and documents;
- Possession of a powerful and reliable hardware platform for existing and future software systems;
- Built capacities for management of complex projects;
- User – oriented institution;
- Strong support from the Government of the Republic of Macedonia to reform the Cadastre;
- Improved image of the Agency as a result of the implemented reforms;
- Possession of an archive of geospatial data and a set of documents with permanent value;
- Established GNSS – system which allows the application of modern technologies for satellite geo – positioning;
- Established national geodetic networks by European standards;
- Simplified procedure for maintenance of the Real Estate Cadastre with an experienced geodetic and legal staff;
- An operating system for production of standardized digital Geodetic Reports (MAKEDIT);
- Distribution of geospatial data through other legal entities (notaries, private geodetic companies, local authorities, ministries, contractors, appraisers, banks, etc.);
- Digital topographic maps in scale 1:25 000 and 1:50 000 for the entire territory of the Republic of Macedonia;
- A legal obligation is introduced for the bodies performing public authorities (courts, ministries, state administration bodies and local government units) to submit electronically the documents containing legal basis;
- 52 % of the cases are received electronically;
- The number of users at the counters of the Agency is reduced;
- A Functional Cadastre of infrastructure facilities as part of the Real Estate Cadastre;
- A Functional Price register;
- AREC is the coordinator for NSDI activities in the Republic of Macedonia and maintains the national geo-portal;
- Established international cooperation (signed memorandums with cadastral institutions from the region and beyond) and
- Membership in international associations and organizations in the field of geodesy, cartography and Cadastre

3.3. Weaknesses:
- Lack of communication – horizontal and vertical;
- A system for payment via e-banking is not introduced;
- Lack of space for the archive material of permanent value;
- Lack of highly educated professional staff and a surplus of employees with inadequate education;
- Part of the regional offices are operating at a loss;
- Lack of plan and system for recovery after disasters (Disaster Recovery);
- Lack of individual attributes from key registers in the Republic of Macedonia in the base of REC
- Dependence of AREC on external companies for maintenance of the ICT systems
- High price for maintenance and development of ICT systems
- Old PCs
- Lack of adequate working facilities and conditions
- Lack of trained staff and inequality in the dealing with requests
- Lack of a mentoring program in order to unify the procedures
- Incomplete adherence of the work procedures.

3.4. **Opportunities:**

- Establishment of mass assessment of the real estate;
- Management of the Graphical Register of Construction Land;
- Introduction of new e-services for better service of customers;
- Strengthen the cooperation with international donors and an international cooperation in order to gain knowledge and transfer of experiences;
- Provision of consulting services and trainings in the country and abroad;
- Strengthen the cooperation with scientific institutions from respective areas;
- Connection with other databases, in order to improve the quality of the data in the database of AREC;
- General market trends create potential for development of new products and services;
- Establishment and management of the Address Register;
- Opportunity to connect with Google, Microsoft, Navteq, Tele Atlas, etc. services as a supplier of the data of AREC incorporated into their services, based on a contract;
- Opportunity for application of software solutions with open source;
- Development of PPP models (public private partnership);
- AREC as a 100% self-financing non-profit institution – a greater opportunity in management of their own resources;
- Increasing the product portfolio by introducing new services and data;
- Restructuring AREC through regionalization in order to optimize the costs and increase the efficiency of the institution.

3.5. Threats:

- Changes in market conditions, or economic crises, etc. leads to a reduced number of user requirements;
- Competition with international Internet browsers or suppliers of data (Google, Microsoft, OpenStreetMap), as well as private GIS companies;
- Risk of bankruptcy of the contracting companies that maintain the systems of AREC and
- Lack of common standard government ICT infrastructure.

4. STRUCTURE OF AREC

4.1. Current position of AREC in society and the market

4.1.1. Organization

The Agency is a legal entity with rights, obligations and responsibilities stipulated by the Law on Real Estate Cadastre.

The Agency is managed by a Steering Board, comprised of five members, representing the Ministry of Justice, Ministry for Transport and Communication, Ministry of Finance, Ministry of Environment and Spatial Planning and the Ministry for Agriculture, Forestry and Water Supply.

The Agency is managed by a Director. The Director has its own deputy.
AREC performs the activities which are within its scope through the Headquarters, the Center for Real Estate Cadastre, the Regional sectors for Real Estate Cadastre, the departments for Real Estate Cadastre and the cadastral counters. The activities of the sectors which refer to the Real Estate Cadastre for the municipalities in the Skopje statistical region according to the Nomenclature of Territorial Units for Statistics (NUTS) is coordinated by the Center for Real Estate Cadastre – Skopje. The organizational structure is functionally defined and regulated by the Rulebook on internal organization of AREC. Within the human resources management, AREC adheres to the principle of equitable participation of communities that are not a majority in the Republic of Macedonia.
The total number of employees in AREC by 30.06.2016, this date inclusive, was 914 employees. Within its competencies, AREC conducts continuous trainings for the employees in order to train and improve them in the field of management and maintenance of GCIS. Namely, within the Department of motivation, interpersonal relations, assessment, professional training and improvement. In the period from January to June 2016 58 trainings were conducted for the employees of AREC in order to familiarize them with the novelties in the field of Cadastre in accordance with the new Law on Real Estate Cadastre, the Rulebook for survey of real estate, the Rulebook for maintenance, the Rulebook for geodetic works, for upgrade of the e-Kat system and for the Cadastre of infrastructure.
5. SURROUNDING BUSINESS ENVIRONMENT

Stakeholders are parties that have interest in the activities of the organization, and they include: impetuses and helpers, suppliers of resources, consumers and pressure groups.

AREC, as a customer-oriented and highly regarded service organization, is focused on the current and future customers, as well as their condition and requirements. Moreover, it cares that the products and the services are meeting the customer demands, taking into account the technical, legal and financial conditions. It is important to note that it is necessary to be constantly aware of the customer demands. In short, it is vital to develop and always maintain a perspective on the work of AREC which looks “from outside to inside”.

The development plans of the Agency are defined in a way that first and foremost an assessment is made of the business environment in which the Agency operates, and this is done by identifying the stakeholders, or identifying which are the impetuses and helpers of AREC, which are the suppliers of resources, the consumers and pressure groups and an analysis is made of the priorities and expected results of the reforms implemented by the Agency.

The results of the surveys of the services users, the requirements of the professional users who are identified through regular meetings with relevant professional chambers, ministries, ZELS, etc. are always taken into account.
5.1.1. Impetuses and helpers of AREC:

- Government of the Republic of Macedonia;
- Ministry of Finance;
- Donor community (Sida, the Netherlands G2G, etc.);
- European Union (EU) and
- Other countries (through bilateral agreements)

Expected priorities of the impetuses and helpers:

Government of the Republic of Macedonia:

- Full implementation of the annual program of AREC;
- Update of the data in REC;
- Improvement of the quality of the data in REC;
- Introduction of new services and products for the customers;
- Respect of the legal deadlines while maintaining REC and issue of GCIS data;
- Timely and quality performance of geodetic works for special purposes of significance to the Government of the Republic of Macedonia;
- Efficient distribution system of AREC for access and issue of GCIS data and new e-services for professional users;
- Registration/recording of infrastructural facilities in the Real Estate Cadastre;
- Performance of mass assessment of real estate registered in the Real Estate Cadastre;
- Management of the Graphical Register of Construction Land;
- Establishment of an Address Register;
- Establishment of 3D Cadastre;
- Standardization of the systems and interoperability with an e-Government;
- Keeping records of energy efficiency of facilities, construction guarantee and insurance policies for real estate and
- Publication of standardized spatial data sets and services on the NSDI Geoportal.

Ministry of finance:

- Performance of the activities related to capital costs.

EU funds:

- TAIEX – strengthened capacities of AREC for implementation of new functionalities.

Donor communities:
- Strengthening of the institutional capacities of AREC in the process of updating the NSDI strategy (Dutch Cadastre);
- IMPULSE project – regional exchange of geospatial data.

These stakeholders are interested in efficient performance of the work of AREC, appropriate behavior, higher productivity and a solid financial management without compromising the quality, impartiality and transparency.

5.1.2. Stakeholders:

- Employees of AREC;
- Suppliers/contractors;
- Ministries;
- Educational institutions;
- Sole proprietors, authorized surveyors and trade companies for geodetic works;
- Notaries;
- Municipalities;
- Enforcement agents;
- Appraisers;
- Banks;
- Insurance companies;
- Private agencies that use geospatial data (real estate agencies, etc.) and
- Citizens.

Expected priorities of:

The employees of AREC:

- Improving the working conditions in terms of working premises, technical aids, etc.;
- Conducting regular trainings on topics within the scope of action of AREC;
- Professional training and improvement of the employees and
- Employee motivation

Suppliers/contractors:
- Complete and timely fulfillment of the obligations under the signed contracts for the supply of goods and services (timely payment)

Ministries/municipalities:
- Participation in projects by which they are directly affected;
- Simplifying the way of payment when issuing data and services and
- Training

Educational institutions:
- Are interested in AREC as a future employer for their students, to enable cooperation in research and development activities and
- Providing practical professional training for their students and offering training for the employees in AREC

Sole proprietors, authorized surveyors and trade companies for geodetic works:
- Participation in the drafting of law and bylaws;
- Opening new opportunities for expanding the private geodetic practice;
- Updated and accurate data;
- Trainings;
- Participation in projects by which they are directly affected and
- Simplifying the way of payment when issuing data and services

Notaries/enforcement agents/appraisers/banks/insurance companies/private agencies that use geospatial data (real estate agencies, etc.):
- Trainings;
- Participation in projects by which they are directly affected;
- Updated and accurate data and
- Introducing new functionalities for more efficient operation.

Citizens:
- Reliable system for REC;
- Updated and accurate data and
- More efficient service
5.1.3. **Pressure groups:**

- Media;
- Unions;
- Municipalities;
- Natural and legal entities and
- Business community (professional chambers)

**Expected priorities from AREC:**

**Media:**

- Transparency of AREC towards the media and the citizens and
- Informing the media and the citizens about new products and services of AREC

**Unions:**

- Compliance with the regulations and laws related to the rights and obligations of the employees and
- Greater participation in the drafting of normative – legal acts related to the rights and obligations of the employees

**Municipalities:**

- Efficiency in the services of the Cadastre and survey and registration of the municipal infrastructure facilities

**Natural and legal entities:**

- Greater transparency of AREC towards the citizens and
- Informing the citizens about the new products and services of AREC, through media and the contact center of AREC

**Business community (professional chambers):**

- Greater transparency of AREC towards the citizens;
- Informing the citizens about the new products and services of AREC, as well as changes in legislation and
- Trainings in legislation and new services

5.1.4. Users

The users of data and services of AREC are:

- Owners of real estate;
- Sole proprietors, authorized surveyors and trade companies for geodetic works;
- Notaries;
- Lawyers;
- Appraisers;
- Contractors;
- Financial institutions;
- Courts;
- Banks;
- Insurance companies;
- Real estate brokers;
- Ministries;
- Local government units and
- Non-governmental organizations (NGOs)

6. REVIEW OF THE ACHIEVED RESULTS OF AREC

Maintenance of the Real Estate Cadastre and delivery of services

The maintenance of the Real Estate Cadastre is performed in seven sectors for Real Estate Cadastre and in the Center for REC – Skopje.

AREC shows a trend of constant growth in the number of cases, and this is due to increased economic activity, the movements of the real estate market, the established Real Estate Cadastre, as well as the increasing awareness of the citizens about the need for regulation/update of their real estate rights.

The total number of newly received cases for the period from January 2015 to June 2016 is 1,835,656 cases.

The graph shows the total number of received cases for the period from January 2015 to June 2016.
E-Cat counter

In order to improve the services for the end users, AREC introduced a mandatory electronic filing of cases by professional users, thus enabling easy, fast, safe and efficient delivery of the applications and requests in electronic form. So far the number of concluded contracts for an e-Cat counter is 705 contracts.

Registration of infrastructure facilities as part of the Real Estate Cadastre

The registration of infrastructure facilities in the Cadastre of infrastructure enables placing them in legal circulation (purchase and sale, lease, mortgaging). So far, a line IO 190 km, a surface IO 664 m² and a 465 point IO are registered in the Cadastre of infrastructure, the line IO 347 km are premarked and the 171 line IO are registered.

Digitalization of cadastral plans

An Action plan for digitalization of the archive originals of the analogue cadastral plans by quarters for 1491 CM was adopted by the Government of the Republic of Macedonia, and upon proposal of AREC. By 30.06.2016, this date inclusive, 1439 CM are completed in total, and 41 CM are under work.

The project for digitalization of cadastral plans is converting the cadastral plans from paper form to vector form and placing them in a centralized database.
In accordance with the dynamics of the performance of activities, it is planned that the Project for digitalization is completed by the end of 2016.

**European Cadastre – graphic module**

By 30.06.2016, this date inclusive, a total of 1780 cadastral municipalities are imported into e-Kat graphics, out of which 403 CM are digital and 1377 CM are analogue, for which compiled digital cadastral plans are made. They are incorporated into the e-Kat database, or 96.31% of the entire territory of the Republic of Macedonia. Now, for 1789 cadastral municipalities, the issue of a copy of the cadastral plan at the counters of AREC is made possible, immediately after submitting the request.

**MakEdit software**

In the MakEdit base, by 30.06.2016 1846 CM are imported and maintained, out of which 410 CM are digital and 1436 CM are analogue cadastral municipalities, or 98.7% of the entire territory of the Republic of Macedonia. The changes in the maintenance of the Real Estate Cadastre are conducted on the basis of digital geodetic reports made with the MakEdit software by private geodetic firms. With the use of the MakEdit software digital geodetic reports for all types of
infrastructural facilities are also made for recording/registration and maintenance of the Cadastre of infrastructure.

**Institutional development**

In order to provide effective and appropriate services for the needs and requirements of the citizens and professional users, it is necessary to ensure an institutional development and support in the process of building the capacities in AREC. In that respect, AREC continuously maintains and upgrades the existing systems.

**Amendments to the Law on Real Estate Cadastre**


With the amendments to the Law on Real Estate Cadastre published in the “Official Gazette of the Republic of Macedonia” No. 116/2015, AREC began with the realization of the three promised projects that are part of a program of the Government of the Republic of Macedonia:

- Ex officio survey of the real estate for the recipients of social and permanent financial aid with low gross incomes up to 168,000 per year, in the procedure of determining the legal status of illegally constructed buildings;
- Establishment of a Register of prices and leases;
- Implementation of the Project electronic counter “24 hours online Cadastre”

These amendments oblige courts, ministries, public prosecutors, the Attorney General of the Republic of Macedonia, state administration bodies, local government units, notaries, enforcement agents and all other entities with transferred public authorities, to obtain the data from GCIS electronically in the proceedings they lead, and the use of data from GCIS is free of charge. The amendments to the Law on Real Estate Cadastre published in the “Official Gazette of the Republic of Macedonia” No. 153/2015 regarding the misdemeanor provisions are prepared to comply with the Law on Misdemeanors.

The provisions of Article 172 are also regulated and they refer to the survey of future construction, which allows premarking of the facilities for which the competent authority does not issue a building permit, but issues a decision for performing the construction, or installation of equipment, and which according to the Law on Construction are recorded in the public records for registration of real estate rights.
The amendments to the Law on Real Estate Cadastre published in the “Official Gazette of the Republic of Macedonia” No. 192 of 5.11.2015, introduced provisions that regulate the provisions on the process of passing and conducting the exam for authorized surveyor, sanctions are introduced in respect of the procedure for conducting the exam, for both the candidates and authorized representatives who participate in conducting the exam.

The amendment to the Law on Real Estate Cadastre published in the “Official Gazette of the Republic of Macedonia” No. 61/2016 aims to facilitate the registration in the procedure for updating the data in cases where applicants cannot identify them. The real estate for which no application has been made for updating the real estate data ex officio, AREC can identify and register the real estate in accordance with the data contained in the official records of the Land Cadastre and the data contained in the geodetic report from the survey done ex officio. The real estate rights remain unregistered only if AREC cannot identify them.

Furthermore, the amendment to the Law also extends the deadlines for submission of applications for registration/recording of 40% of the total submitted data on infrastructure facilities from 24 April 2016 to 24 April 2017, and the deadline for submission of applications for registration/recording of the remaining 60% of the submitted data on infrastructural facilities is moved from 24 April 2018 to 24 April 2019.

**Distribution system of AREC**

In order to further develop the AREC GIS portal, on 29.12.2015 AREC promoted a distribution system which represents a single point of access to digital geospatial data.

On the portal [http://ossp.katastar.gov.mk/OSSP/](http://ossp.katastar.gov.mk/OSSP/) there is available data from the Real Estate Cadastre, geodetic and cartographic data, as well as data from the register of spatial units for the entire territory of the Republic of Macedonia. The distribution system is available online – 24 hours for all legal and natural entities in the country and abroad. The users can obtain the requested information in digital form or hardcopy.
The data published in electronic form are public documents that can be used before other state bodies, banks and other institutions with information systems. By 30.06.2016, this date inclusive, 5266 requests are made electronically with the use of the system, with a total of 10 360 data in electronic form and/or hardcopy.

Graphical register of streets and house numbers in the Republic of Macedonia

By the Law on Real Estate Cadastre, AREC expanded its competence with the establishment and management of the Graphical register of streets and house numbers as part of the Address Register of the Republic of Macedonia.

Address Register

In order to start the activities for establishment of the Address Register in the Republic of Macedonia, a work group composed of nominees from the Ministry for Transport and Communication, the Ministry of Internal Affairs, the Central Register, the Office for Management of Civil Registers, Statistics, ZELS and AREC, prepared a draft operating version of a new law for an Address Register in which the European directive is transposed in the field of spatial data, standardization and interoperability. A tender procedure for selecting the best bidder for development of a software solution for the establishment of an Address Register in the Republic of Macedonia is ongoing.
Register of construction land

The Cadastre Agency is in the final phase of establishing a Graphical Register of Construction Land. This register will allow a complete standardization and unification of all types of urban plans, urban – planning documentation and urban – project documentation for the entire territory of the Republic of Macedonia. The register will enable easy and transparent access to the contents of building parcels and building surfaces covered with the urban plans and urban – planning documentation overlapped with the cadastral parcels, through a web portal available to all users and interested parties. The register will enable the issuing of an urban plan certificate for citizens and companies immediately at the counter or via e-counter, as well as fast registration of the construction land in the Real Estate Cadastre. The software solution is developed and placed in a test environment and is in the phase of implementation with planners and municipalities. Trainings were conducted for planners and employees of AREC. Additional trainings for municipalities and other users of the system are ongoing.

Establishment of an electronic system for mass assessment of real estate

The Register of prices and leases of real estate is the basis for establishing a system for mass assessment of real estate, through which each property in the Republic of Macedonia will receive its own market value, which can later be used for different purposes. By June 2016, 9,993 transactions were verified in the base of the Register of prices and leases, out of which 5,529 sales, 3,400 leases, 752 sales by an investor, 41 sales at auction sales and 272 buyouts by the Republic of Macedonia. All the data that will pass the additional controls are published on the web portal of AREC, http://gis.katastar.gov.mk/arec/.

Control and monitoring of the work

In accordance with the Law on Real Estate Cadastre, AREC continuously carries out controls of the work of 29 departments for Real Estate Cadastre and the Center for Real Estate Cadastre – Skopje, as well as control of the work of 147 private geodetic companies. The control is carried out in accordance with the annual program for control.
AREC currently acts upon the received complaints and proposals which are submitted by legal and natural entities, whose number is about 1000 complaints annually. Besides the planned activities, the campaign “Openly with the Cadastre” is also continuously implemented.

**Contat center of AREC**

With the introduction of new systems, the number of clients is constantly increasing, as well as the need for creating additional functionalities in the contact center. The number of calls about cases by 30.06.2016, this date inclusive, by type of requirements of the clients from the contact center is: the total number of received cases is 38,130, the number of information given immediately is 19,565 and the number of open cases is 18,565. Quantitatively by types, the number of cases is 3098 for help desk, 13,248 for information, 2005 for applications for cases and 214 scheduled meetings.

**National Spatial Data Infrastructure in the Republic of Macedonia**

The National Spatial Data Infrastructure enables better planning and decision-making, at national and local level. The software solution for the national geoportal NSDI of the Republic of Macedonia is completely implemented and the portal is available for all users at [http://nipp.katastar.gov.mk](http://nipp.katastar.gov.mk).

According to the Report from the monitoring of the progress of the transposition and implementation of the European environmental legislation for 2016, the level of transposition of the European INSPIRE Directive (2007/2/EC) increased from 65% to 72%. This is due primarily to the commencement of the preparation of the bylaws that will transpose the mandatory articles of the Directive relating to metadata. A harmonization and standardization has been conducted of the spatial information sets on administrative units and the digital model of the field and a creation of WMS and WFS Web Services.

**Geodetic reference infrastructure and production of topographic maps**

**Upgrade of the geodetic reference infrastructure**
In the period from January 2015 to June 2016 activities related to the regular maintenance of the national geodetic reference networks were carried out, and a special accent was placed on the MAKPOS system as the most important segment of the geodetic reference infrastructure. The total number of users of the MAKPOS system currently is 167 legal entities with 232 rovers.

The Project for processing of data from a leveling network of high accuracy in the Republic of Macedonia was implemented and at the beginning of July 2016 the final geodetic report was submitted by the hired external contractor of the service to AREC for approval.

**Geodetic works for special purposes of significance to the Republic of Macedonia**

Based on decisions made by the Government of the Republic of Macedonia, AREC continuously works on the performance of geodetic works for special purposes that are of interest to the Republic of Macedonia.

**State border**

In accordance with the responsibilities arising from the Law on Real Estate Cadastre, AREC also continuously performs the activities associated with survey, marking, maintenance and renewal of border marks and the border line of the state border, according to the program established by the Ministry of Foreign Affairs, as the competent ministry.

**Production of digital topographic maps**

In the period from January 2015 to June 2016 AREC completed the production of digital topographic maps in scale 1:50 000 (61 sheets), and in the second half of 2015, based on pre-designed specifications, began the production of mid-scale topographic maps in scale 1:100 000 and 1:200 000. So far 6 sheets of the topographic map in scale 1:100 000 are made (out of 21 sheets) and 2 sheets of the topographic map in scale 1:200 000 (out of 8 sheets). In parallel with these activities, the control and compliance of data from the topographic map in scale 1:25 000, which is the basic state map for GIS in the Republic of Macedonia, are continuously being worked on.

**Other cartographic activities**
AREC actively participates in the development of pan-European Eurogeographics data: EBM (EuroBoundariesMap, ERM (EuroRegionalMap) and EGM (Euro Global Map), as well as in the production of a global map of the world – the Global Map project.

Within the IMPULSE project funded by the Swedish government, activities related to harmonization of the basic cartographic data sets were realized in accordance with the INSPIRE Directive and the development of corresponding metadata. A harmonization of the data sets for administrative units was conducted, a digital model of the terrain and geographical names, and the activities for harmonization of the data set for orthophoto maps are in the initial stage.

**International cooperation, trainings and education for professional users**

**International cooperation**

During the period from 20 to 24 April 2015, representatives of AREC together with the Director Mr. Slavche Trpeski, participated in the World Summit on Cadastre in Istanbul, Turkey. The ISTANBUL DECLARATION was signed within the framework of this event. Aimed at establishing a base for assessment of real estate in the Republic of Macedonia, on 22.05.2015 a Memorandum of Cooperation between AREC and the Chamber of appraisers of the Republic of Macedonia was signed. AREC continues its cooperation with the higher education institutions in the Republic of Macedonia by signing the Memorandum of Cooperation with the Faculty of Natural Sciences, the Institute of Geography at the University “Ss. Cyril and Methodius” in Skopje and the Military Academy. Representatives of the Agency actively participated in many international and regional conferences and seminars. In February 2016, AREC signed a Memorandum of Cooperation and partnership with the Dutch Cadastre.

**Trainings for professional users**

The Agency conducts trainings based on an Annual program for implementation of trainings on the establishment and maintenance of the Real Estate Cadastre and the geodetic and information works. During 2015 and the first quarter of 2016, AREC organized trainings for authorized surveyors, as well as other professional users, and for the Chamber of Contractors, the Ministry of Finance – Property and Legal Affairs Office and for the Technological Industrial Development Zone (TIDZ).
7. PRIORITIES AND OBJECTIVES OF AREC

AREC is service – oriented towards the users through:

- Increased customer satisfaction and trust of the users in the work of AREC;
- Educated and professional users; and
- Provision of accurate and timely information.

In recent years, AREC marked great progress, especially on technical (IT) level. AREC in the following period will focus on:

- Open, customer – oriented organization;
- Continuous informing of the users about the services and products, as well as the target groups, and citizens and professional users and media about the development programs and objectives that are focused on delivering services in a manner which corresponds to their needs;
- Creating an image of a modern agency focused on its development and
- Improving the functionalities of the contact center and service quality.

In order to further develop into a customer – oriented institution, AREC will continue to invest in trainings for the staff, have regular meetings and communication with the stakeholders and users of cadastral services. During the following period, it will be necessary to professionalize and expand the external communications and marketing activities of the Agency.

By introducing the electronic services, the need of the citizens and the professional users to come to the counters of AREC is reduced. On the other hand, the number of incoming calls to the contact center of AREC is increased. This means that more and more citizens and professional users are using this service in order to get informed about a certain case, to receive the necessary information and technical support for the use of the electronic services, etc. AREC plans to reduce the number of counters by 2019 which currently exist in the regional offices for Real Estate Cadastre and the Center for Real Estate Cadastre – Skopje and in the future to represent places that will have an advisory – consultative function.

The Control Department, through the Department for control of the Real Estate Cadastre, implements continuous control over the operations of the departments of REC in accordance with the annual program for carrying out controls which is prepared each calendar year. The Department for supervision over the private sector
continuously carries out controls over the private geodetic companies, which currently are a total of 147. The Department for complaints and suggestions acts on the received complaints and suggestions, the average number of complaints is about 1000 cases annually.

Out of the planned cases, AREC annually implements the campaign “Openly with the Cadastre”. The campaign is maintained in all of the cities of the Republic of Macedonia, or in the regional offices of AREC and CREC.

The contact center of AREC is aimed at supporting the professional users (notaries, private geodetic companies, municipalities, contractors, lawyers, banks, etc.) who use the electronic services of AREC, such as e-Kat and e-Counter. Currently, the customers have access to the contact center by selecting options for professional users, information, applications and complaints, as well as agents in Macedonian, Albanian and English every workday from 8:30AM to 4:30PM on the free telephone line (info line 0800 80 800), the info line for customer care, foreign investments and domestic business companies (02 3173 825). The info line for professional users of the electronic counter and the electronic Cadastre (02 3171 833). Customers can also ask questions, leave comments and suggestions via e-mail info@katastar.gov.mk.

All of these channels are associated with the application which enables the client to receive a timely and unified information from one point of contact. The application enables monitoring of all the telephone calls, history of questions and answers, and the agents of the Department for customer care have at all times access to all the information about the client. In 2016, the contact center was upgraded with two new modules Calendar – Schedule a meeting and a Campaign module which allows mass information of the clients on specific topics.

The procedure for purchasing two new modules for the needs of the contact center is underway, and: SMS module and a module for building an IVR tree (Interactive Voice Response System (IVR)).

The IVR system is an important part of the overall structure of the Call Center system, which enables easier and faster communication between the users and the system, or it is comprised of pre-defined messages which can be of service to the customers and if there is a problem with the system, a message appears which informs the customers of the arisen problem during an incoming call. There is a possibility for defined messages which may appear after working hours, with guidance on certain types of issues.

A module for using SMS which is a communication channel that will be fully integrated into the existing contact center. Currently, the Agency is using communication channels such as telephone and e-mail, and with the upgrade, the
SMS communication channel for creating campaigns and creating copies of SMS campaigns, etc. will be included as well. Currently, the option of upgrading the application of the contact center with a new module for testing the satisfaction from a resolved case is being examined, or the system to enable the client to fill out a survey, after he is notified via e-mail that his case is resolved. For better communication with the citizens and professional users, AREC plans to set up two new departments in the future, and: Marketing Department and Department for contract management for the users.

**Efficient, reliable and secure digital GCIS:**

- Up to date GCIS;
- Improvement of the quality of data of the Real Estate Cadastre;
- Registration of insurance policies for real estate in the Real Estate Cadastre;
- Registration of construction guarantee in a title deed;
- Registration of a Certificate for energy efficiency in the Real Estate Cadastre;
- Data exchange between the Real Estate Cadastre and the real estate bases in the municipalities;
- Linking the system for issuing construction permits used by the municipalities with an electronic counter of AREC;
- Introduced mass assessment of real estate;
- Maintenance of modern geodetic reference base and established ETRS89 – coordinate system;
- Produced small-scale topographic and special purpose maps;
- Maintenance of the Cadastre of infrastructure facilities and survey of infrastructures of state and municipal property;
- Established 3D Cadastre – digital floor plans of buildings, separate and common parts of buildings and other facilities;
- AREC as a coordinator of the NSDI activities in the Republic of Macedonia;
- Management of the Graphical Register of Construction Land;
- Orthophoto imaging and laser scanning of the entire territory of the Republic of Macedonia and
- Established Address Register

**Up to date GCIS**
The Real Estate Cadastre was established in the period from 1991 to 2012 and finalized in 2012, by putting into operation the Real Estate Cadastre for the cadastral municipality Dracevo. The establishment of a Real Estate Cadastre in 1912 cadastral municipalities is implemented by applying one of the following ways: systematic registration, individual registration and conversion of the data from the Land Cadastre to the Real Estate Cadastre.

Systematic presentation of the data of 1250 CM

The systematic presentation of data is considered to be with the best quality and with this procedure, the registration is done based on survey and legal documents. When there is an old survey, and if a new survey has been done, in some cases there is a problem with the nonconformance of the data from the old and the new survey, because the old survey is taken as a legal basis, and the property is registered in accordance with the new survey, which leads to appearance of co-ownership among neighbors. The update of the real estate data at the request of a party is enabled with the Law on Real Estate Cadastre. A particular problem in this procedure is the provision of a notarized statement signed by the owners of the neighboring parcels, primarily due to indifference of the neighbors, deceased persons, emigrated persons, etc. The results of the application of this decision are not satisfactory.

A strategic solution for overcoming the problems (mentioned above) is the Program for doing a new survey on a request by a party. The survey of all parcels where there is intrusion of some neighbors into others, fictitious divisions, errors of the Cadastre, about 56,000 cadastral parcels with 222,048 co-owners, will be done by AREC free of charge. For the implementation of this new strategic goal a change in the Law on Real Estate Cadastre is necessary, which will enable AREC to do a survey on the spot and parties with minutes to make statements in order to determine the factual situation and resolve the cadastral problems. Subject of registration in the Cadastre in this case is the factual situation of the terrain confirmed with a statement from the parties. For the implementation of the program for 1250 cadastral municipalities, AREC will need to provide geodetic equipment and hire 100 surveying experts. The funds for a new survey which are in the amount of 620,000,000.00 denars should be provided 50% by AREC and 50% by other sources. In this strategic plan the realization of 30% of the cadastral parcels is planned.

Systematic presentation of the data of 267 CM which were with an inventory Cadastre – Ex officio update for 267 CM
A particular problem in this category occurs in 267 cadastral municipalities, where an inventory Cadastre was being applied (block surveying), a new survey and a systematic registration were done for the purpose of establishment of the Real Estate Cadastre. The majority of the real estate in these cadastral municipalities are with unregistered rights. In order to overcome the situation, in 2013 AREC began updating the data in the Real Estate Cadastre by implementing an Ex officio annual update program which has so far covered 105 cadastral municipalities which, before the establishment of the Real Estate Cadastre, were with inventory Cadastre and where the percentage of unregistered rights is higher than 20%. The results of the implementation of this annual program are not satisfactory for the following reasons:

- indifference of all holders of property rights within the cadastral municipality for registration of the property (percentage of clients who expressed interest ranges from 20% to 30%);
- Many of the parties which have not applied for registration of property do not know the location of their property;
- The regional offices have a lack of surveying staff for field survey and preparation of geodetic reports.

Given that the current method of registration did not give the expected results, the solution for overcoming this situation is to change the Law on Real Estate Cadastre which should enable the inventory list with unregistered rights to constitute as a legal basis for registration in the Cadastre, i.e. obtaining a title deed. The procedure will be performed ex officio based on an Annual Program – Action Plan for 267 cadastral municipalities with the presence of a party. The amendment to the law should allow tolerance of the surface up to 40%, but no more than 2,000 square meters. Despite the noted, for registration is required that the party has a cadastral parcel recorded in the title deed in the appropriate block. The implementation requires an amendment to the Law on Real Estate Cadastre which will provide court protection as well and within 3 years the persons who have a “stronger right” will be able to prove that in court.

Conversion of the data from the Land Cadastre to the Real Estate Cadastre for 660 CM

By using the method of conversion, the data from the Land Cadastre are converted to the Real Estate Cadastre. The problem that occurs in the cadastral municipalities
in which this method is applied is the non-compliance with the factual situation of the field, as well as with the unregistered floor property.  
The program includes a survey of all cadastral parcels where there is a discrepancy between the converted parcels and the factual situation of the field, at the request of a party. In order to realize this strategic goal, similar to the systematic registration, an amendment to the Law on Real Estate Cadastre is required, which will allow the private geodetic company to do a survey on site, while the parties can make statements with minutes in order to determine the factual situation and resolve the problem. Subject of registration in the Cadastre in this case is the factual situation of the field, confirmed with a statement from the parties. The program will represent an active involvement of the private geodetic sector as a partner of AREC.

The individual presentation of data at the request of a party is done in parallel with the systematic presentation in 1250 cadastral municipalities

In this procedure, individual real estate were registered in the Real Estate Cadastre, but these title deeds are not harmonized to date in the electronic data base with systematic registration. Despite the legal obligation to harmonize the individual registration in the Real Estate Cadastre, there are still cadastral municipalities which are not harmonized because it is necessary that the regional offices for Real Estate Cadastre perform the harmonization within 60 days.

**Improvement of the data quality in the Real Estate Cadastre**

When it comes to data quality, the existing non-standardized structure of the records/data contained in the Real Estate Cadastre should be taken into account. The program should improve the data quality from a semantic aspect which should cover standardization of the records in the Real Estate Cadastre regarding the personal and address data. The improvement of the personal data on the TITLE-sheet A may be accomplished by electronically linking AREC with the Office for Civil Registration/MIA for natural entities and with the Central Register for legal entities, and the address data can be improved by electronically linking the Real Estate Cadastre with the data for the Address Register. Also, it is necessary to harmonize the codes in sheet A, B and C for: the property right, purpose of a facility and a separate part of a facility, cadastral culture and more. The funds for improving the data in the Real Estate Cadastre which are in the amount of 62,000,000.00 denars should be provided by AREC. The improvement will
be implemented in continuity with each submitted request, but with the systematic purification as well. The indicator is the number of improved title deeds.

**Registration of insurance policies for real estate in the Real Estate Cadastre**

The insurance of a property (against fire, natural disasters, theft and other risks) is the second more important class in the structure of the gross placed premium. According to the data from the Agency for Insurance Supervision, during 2014 the insurance agencies have concluded a total of 54,446 insurance contracts (policies) on all grounds. 750 thousand buildings are registered in the Real Estate Cadastre which by itself speaks about the fact that the number of insured buildings is minor. This project provides that the insurance contracts are noted in the Real Estate Cadastre and thus create transparency and stimulation of the habits of the citizens and the business community to insure the real estate for their duly protection.

In order to enable registration of this data in the Real Estate Cadastre, an amendment to the Law on Insurance is required, which would provide an obligation for the insurance companies to submit insurance policies electronically to the Agency and to note them in the TD, and amendments to the Law on Real Estate Cadastre are also required in order to create prerequisites for registering this data in the Real Estate Cadastre.

This service, which provides for the registration of insurance policies, includes an update of the e-Kat system as well and linking all insurance companies with the e-Kat counter.

With the record of these insurance policies in the Real Estate Cadastre, a database of insured apartments will be created which will allow users to review whether a particular property is insured or not at all times.

**Registration of a building guarantee in a title deed**

Each newly constructed building should have a guarantee for its quality construction. The guarantee is temporary. This functionality provides that the guarantee for the constructed facility is registered in the Real Estate Cadastre, which will contribute to the transparency and protection of the buyers in the process of buying real estate because they will have information in advance about the length and the type of guarantee of the newly constructed building.

An amendment should be made to the following laws:
The Construction Law in order to provide a guarantee of the quality of construction, content, form and duration and obligation to make a registration in the public
records, the Law on Real Estate Cadastre in order to create a legal opportunity to register the guarantee for quality of construction, etc.

Registration of a certificate for energy efficiency in the Real Estate Cadastre

Energy efficiency means using less energy without reducing the quality of life. The increase of energy consumption in the Republic of Macedonia has doubled over the last decade. The reasons for this are the increase of industrial activity, outdated technological equipment and old infrastructure that dramatically accelerates the inefficient use of energy.

The implementation of energy efficiency measures will result in a reduction of the electricity bills, and by registering the Energy Performance Certificate in the Real Estate Cadastre. This will provide transparency and every buyer will be informed in advance about the energy efficiency of the building that is subject of trade.

The energy certificate is a document in which the energy performance of the building is laid out. The Energy Performance Certificates are issued with a validity period of ten years.

In order to enable registration of the certificate in the Real Estate Cadastre, it is necessary to make amendments to the Energy Law which will provide for an obligation to register the Energy Performance Certificate in the public records, amendments to the Construction Law in order for the certificate to be a mandatory document which will be submitted for registration in the Conditional registration sheet, as well as for registration in the public records electronically, amendments to the Law on Real Estate Cadastre in order to create a legal possibility to register the Energy Performance Certificate.

The duration of the certificate will be registered (beginning and end of the validity).

Data exchange between the Real Estate Cadastre and the bases of real estate in municipalities

Regarding the cooperation with ZELS, an electronic connection between AREC and the systems of ZELS is necessary in order to provide better and more efficient calculation of the property tax.

Linking the system for issuing construction permits used by municipalities with the electronic counter of AREC
Regarding the e-building permits, a linking of the system for issuing construction permits used by municipalities with the electronic counter of AREC is provided for direct download of the necessary documentation for conditional registration of the building for which a construction permit has been issued. This will further facilitate and expedite the procedure for filing an application for conditional registration by the municipality to AREC.

**Introduced mass assessment of the real estate**

The implementation of the system for mass assessment is the main goal of every land administration and economy for a number of reasons, primarily fair taxation, transparency of the real estate market, as well as development of the mortgage and insurance market.

A new law on mass assessment will be adopted which will define the competences of AREC for the establishment of an efficient and reliable system for mass assessment. The basis for the establishment of a system for mass assessment is the Register of prices and leases which is continuously filled with real estate data based on completed transactions.

It is provided that the system for mass assessment is comprised of three subsystems:

- Collecting real estate data and their verification – Register of prices and leases – the subsystem has been established;
- System for modeling and
- System for mass valuation

According to the progress of the project so far, AREC is expected to complete the first and the second phase of the project in the next three years, or to maintain and complement the Register of prices and leases and to establish the system for modeling, or to build a database big enough for the real estate which will be used to establish models of an already made software.

The funds for the realization of the projects for: updating the cadastral parcels – second phase, laser scanning of the territory of the Republic of Macedonia, 3D Cadastre of buildings, separate and common parts of buildings and other facilities, Address Register, Mass assessment, Survey of infrastructures that are of state and municipal property, will be partly financed from the budget of AREC, and partly with
funds from available EU funds, the World Bank and other international financial institutions.

**Maintenance of the modern geodetic reference base and established ETRS89 – coordinate system**

In the period from 2017 to 2019 AREC will continue with the realization of the activities related to the upgrade of the geodetic reference infrastructure and compliance with modern international standards. AREC will work on creating preconditions for introducing the European ETRS89 – coordinate system that our country as a candidate for EU membership is obliged to implement, into official use in the Republic of Macedonia. The national geodetic reference networks that AREC implemented and determined in the last period, will be connected to the corresponding geodetic networks of neighboring countries and incorporated in the European geodetic reference frames, by conducting special measuring campaigns. Before officially putting the new national geodetic reference networks into use, a process of linking them with the local geodetic networks, a process of date transformation of the existing data, a change in the laws and/or bylaws and education of the stakeholders on the proper use of the new geodetic reference systems in practice, will precede. The new national geodetic reference networks will be subject to regular maintenance in order to maintain and improve their functionality. Based on the previously drawn up strategy, AREC will conduct activities for determining the precise geoid for the territory of the Republic of Macedonia and the application in geodetic practice, in order to improve the quality of the geospatial data that are obtained in the surveying procedures by applying the methods of global satellite positioning. According to the modern European trends, a project will be drafted for the establishment of a multi-purpose combined geodetic network (zero line network) on the territory of the Republic of Macedonia which, in addition to standard surveying needs, will serve long-term to monitor the geotectonic movements of the Earth's crust. In the period from 2017 to 2019 AREC will continuously work on conducting surveys in order to register the real estate owned by the Republic of Macedonia, as well as surveying works for special purposes that are of interest to the Republic of Macedonia, determined by decisions made by the Government of the Republic of
Macedonia (drafting updated surveying bases, numerical data on real estate, floor survey of buildings, etc.).

According to the provisions of the Law on Real Estate Cadastre, AREC will perform the works associated with surveying, marking, maintenance and renewal of border marks and the border line of the state border, in accordance with the program established by the Ministry of Foreign Affairs, as the competent ministry.

Produced small-scale topographic and special purpose maps

In the period from 2017 to 2019 AREC will complete the production of digital mid-scale and small-scale topographic maps in scale 1:100 000, 1:200 000, 1:500 000 and 1:1 000 000 which will finalize the set of topographic maps for the territory of the Republic of Macedonia in all basic scales.

Based on the data from the new orthophoto imaging of the territory of the Republic of Macedonia, which is planned to be implemented during 2017, AREC will start a procedure for updating the data from the topographic map in scale 1:25 000, as the basic state map for GIS in the Republic of Macedonia. At the same time, work will be done on automating the process of production of topographic maps in smaller scales by applying the experiences of the advanced European countries, primarily the Netherlands, as well as the production of certain special purpose maps.

During the following period, AREC will work on building capacities which will enable the use of remote detection and other modern measurement technologies which will provide a quick and efficient way of obtaining updated geospatial data in order to produce cartographic products at local and state level in a quick way. In this regard, a study is planned to be prepared which will aim to determine the need to establish a modern center for processing of data from satellite images, pictures taken with drones, laser scanners, etc. and the necessary resources for its implementation (human, technical and financial).

AREC will continue to actively participate in the production and maintenance of the pan-European Eurogeographics products: EBM (EuroBoundariesMap, ERM (EuroRegionalMap) and EGM (Euro Global Map), as well as in the production of a global map of the world – Global Map, the production of which, starting from 2016, will be coordinated by the United Nations.

Within the IMPULSE-project, financed by the Swedish government, the harmonization of the basic cartographic data sets in accordance with the INSPIRE-Directive and the development of proper metadata will continue.
Maintenance of the Cadastre of infrastructure facilities and survey of infrastructures of state and municipal property

After the establishment of a system for registration of the infrastructure facilities, all legal and technical requirements for registration of all types of infrastructure facilities were developed, in the area of: transport infrastructure, water infrastructure (primary and secondary network), sewerage infrastructure, energy infrastructure, electronic and communication infrastructure and other types of infrastructure (OTI). Given the importance that all existing infrastructure facilities that are of state, or municipal property, should be registered in the Cadastre of infrastructure facilities, it is necessary to do a survey of the entire infrastructure which is of state, or municipal property. With the implementation of the project it is expected that the following are surveyed and registered:

- Road infrastructure with a total length of 14.182 km of which 242 km are classified as highways, 911 km are roads, 3.771 km are regional, and 9.258 km are local roads (http://www.roads.org.mk/221/patna-mreza);
- Railway infrastructure with a total length of 925 km (http://www.mzi.mk/index.php?pagename=services&cat=12);
- Communal sewerage network with a total length of 695 km and storm water sewer network of 262 km for the City of Skopje (https://www.vodovodskopje.com.mk/MK/delovnost/servisni_informacii.aspx?AspxAutoDetectCookieSupport=1);
- Communal sewerage network with a length of 3000 km and storm water sewer network with a length of 1200 km for other local government units;
- Water supply with drinking water with a length of 1085 km for the City of Skopje (https://www.vodovodskopje.com.mk/MK/delovnost/servisni_informacii.aspx?AspxAutoDetectCookieSupport=1);
- Water supply with drinking water with a length of 2535 km for other local government units;
- 450 km of channels for irrigation, drainage and water supply and
- 10 000 km of other types of infrastructure of state property.

With the implementation of this project, there will be a clear picture of the overall infrastructure in the country which will facilitate the planning of future infrastructures and which will be protected from possible damages. In addition to the state and the municipalities, the investors are also expected to have benefits...
because they will know exactly where the infrastructure facilities pass when planning their investment, and the benefits for the citizens will be regarding the reduced number of unannounced interruptions due to damage of underground infrastructure, as well as the regulation of the formality of the infrastructure facilities which pass through or are in their parcels/facilities.

**Established 3D Cadastre – digital floor plans of buildings, separate and common parts of buildings and other facilities**

The identification and proper registration of the numerical and graphical part of buildings, separate and common parts of buildings and other facilities, as well as the rights to them, are of great importance for efficient and effective management of the Cadastral System in the Republic of Macedonia. The current way of management enables efficient maintenance of alphanumeric data for buildings, separate and common parts of buildings and other facilities, but this does not refer to the graphical data which are not yet part of the electronic Cadastre. Precisely for this reason, as part of the strategy of AREC (AREC) in the Republic of Macedonia for the period from 2017 to 2019 a 3D Cadastre of buildings, separate and common parts of buildings and other facilities was established, or an accurate 3D geospatial information was introduced. By establishing a 3D Cadastre, the current concept of registration of buildings, separate and common parts of buildings and other facilities as part of the Real Estate Cadastre will be improved, as well as the rights that are recorded. This improvement refers primarily to the graphical and attribute data about buildings, separate and common parts of buildings and other facilities, improvement of the methodology for collecting, recording and registering these data, a more detailed elaboration of the laws and bylaws, as well as making various geospatial analyses for the needs of the Cadastre and urban planning.

In order to ensure quality of the data which will be registered in the 3D Cadastre, an introduction of a surveying project developed by an authorized surveyor in parallel with the building of the facility is provided. This will provide accurate and precise three-dimensional data for characteristic points of each of the facilities and separate parts of the facility for each floor separately.

All this positively influences the real estate market and the business sector which operates in this domain as a result of the introduction of a precise geolocation and unique numbering of buildings, separate and common parts of buildings and other facilities.

The establishment of a 3D Cadastre includes the following activities: drafting a business plan for establishment of a 3D Cadastre, developing software solutions,
amending laws and/or bylaws and methodologies, collecting field data, registration and issuance of data from the Real Estate Cadastre.

**AREC as a coordinator of NSDI activities in the Republic of Macedonia**

The NSDI provides increased performance, improved availability and quality of geoinformation, exchange of data for better planning and decision-making, at national and local level, and thereby stimulating the innovations and supporting the Project for interoperability within the project for e-Government. The NSDI supports dealing with crisis, planning and management of transport and communications, rational resource management and protection, as well as the international cooperation and joining the pan-European SDI which are developed as part of the INSPIRE-Directive of the European Union.

In the period from 2017 to 2019 AREC will work on updating the Strategy for NSDI with financial support from the Netherlands, and in cooperation with the Dutch Cadastre. This procedure will include NSDI subjects through established work groups. In parallel with this activity, AREC and NSDI subjects will continuously work on the implementation of the Law on NSDI in terms of creation of metadata, harmonization of geospatial data in accordance with the technical specifications arising from the INSPIRE-Directive, as well as development of Web Services.

**Management of the Graphical Register of Construction Land**

The Graphical Register of Construction Land will introduce standardization of the urban plans in GIS format which is a prerequisite to enable a review of the overall urban planning documentation for the entire territory of the Republic of Macedonia, as well as the issue of a Certificate of an urban plan for citizens and companies immediately at the counter or through an e-counter, as well as rapid registration of the construction land in the Real Estate Cadastre. With the establishment of the Register of Construction Land and its linking to digital cadastral plans, there will be data as follows: total construction land in the Republic of Macedonia, which is built on and which is not built on, who owns the land, etc. The Graphical Register of Construction Land in combination with other spatial data enables far better spatial planning and environmental protection in the Republic of Macedonia.

In the period from 2017 to 2019 AREC plans to upgrade the system with functionalities for preparing digital geodetic reports for numerical data. The system will be upgraded with a module for private geodetic companies and AREC which
prepare reports on updated geodetic base which will enable the planners to have a
direct insight into the updated base and the Real Estate Cadastre data in the
drafting phase of the urban plan and urban planning documentation.

An upgrade of the system is planned which involves functionalities for
standardization and display of infrastructure projects with which each type of
infrastructure will have a precisely defined layer and attributes that define the
system.

A linking between the system for Graphical Register of Construction Land and the
Real Estate Cadastre is planned for more efficient implementation of the changes in
the cultures of the parcels on the basis of adopted urban plan and urban planning
documentation. The data from the GRCL will be available for public review through
the distribution system of AREC.

**Orthophoto imaging and laser scanning of the entire territory of the Republic of Macedonia**

The project for orthophoto imaging and laser scanning of the territory of the
Republic of Macedonia is part of the Work Program of the Government of the
Republic of Macedonia 2014-2018. The objective is to produce new precise digital
orthophoto maps and elevation models of the field that will realize wide application
in the Cadastre, urban planning, agriculture, environmental protection, crisis
management, defense and other areas where geospatial data are used. The funds for
the project in the amount of 2.5 million Euros are planned to be provided from the
IPA 2 funds and donations. For activities related to orthophoto imaging of the
Republic of Macedonia, funds have already been provided by the Ministry of
Agriculture, Forestry and Water Supply in the amount of 700,000 Euros within the
IPA TAIB National program in 2012 and a procurement procedure by the PRAG-rules
of EU is ongoing. It is necessary to provide additional funds in the amount of 1.8
million Euros from other sources for the activities related to laser scanning of the
territory of the Republic of Macedonia.

**Established Address Register**

With the Law on Real Estate Cadastre, AREC expanded its competence with the
establishment and management of the Graphic Register of streets and house
numbers as part of the Address Register of the Republic of Macedonia.
A work group composed of representatives of the Ministry for Transport and Communication, the Ministry of Internal Affairs, the Office for Management of Civil Registers, the Central Register and AREC, as well as representatives from ZELS and the City of Skopje, established the necessary activities for implementation of the Address Register at national level with geospatial address data included.

For the establishment of an Address Register it is necessary to draft a new Law on Address Register which will be in accordance with the INSPIRE data specification on addresses-D2.8.1.5, the specification on address data – technical guidelines, and amendments to the other laws and bylaws referenced to it.

A development of a software solution for the Address Register is planned which will be implemented as an upgrade to the e-Kat system with a module for address data with included graphics of streets and house numbers recorded in the title deeds. The change of address data in the Address Register will be directly implemented in the Real Estate Cadastre. For the establishment of an Address Register a field inspection and collecting address data are provided, which will determine which model of addressing will be applied in a particular settlement, while meeting the prescribed standards with minimal financial impact. Based on the established Address Register for the settlement, a numbering and marking of the established addresses will be carried out on the field.

**Strengthening the institutional capacities of AREC and cooperation at national and international level:**

- New legislation for AREC and its new competences;
- Educated and highly motivated staff;
- Effective management of business processes;
- Transformation into a self-financing institution;
- Opening a center for consulting services and trainings;
- Trained staff and trained professional users;
- Regionalization of AREC;
- Linking the Cadastre with European cadasters (EULIS);
- Linking the national spatial data portal of AREC with regional portals;
- Translation of 2 million deeds

This priority ensures institutional development and support for capacity building in AREC, in order to achieve efficient and relevant services to the public and the professional community. AREC is an institution which is more and more business
oriented and directed towards meeting the needs of the customers. The objective of AREC is to become more efficient in meeting the needs and requirements of the clients, including the Government, business users and the public.

**Regionalization of AREC**

In order to reduce the costs of the Agency for Real Estate Cadastre, unify the work and equally distribute the work tasks, AREC plans a project for regionalization with which, instead of the current thirty regional offices for Real Estate Cadastre in the Republic of Macedonia, will establish eight regional centers for Real Estate Cadastre including the Center for Real Estate Cadastre - Skopje.

With the implementation of this project AREC will follow the principles for the development of a modern, effective and economical administration with a high level of ethics, greater use of modern information and communication technologies and continuous improvement of services.

For this purpose, it is necessary to form a work group that will make a proper analysis in cooperation with an external consultant and will be the basis on which a draft-strategy will be prepared. The strategy will set out the actions which need to be taken, the necessary resources (human and financial), as well as the time frame in which the activities will be implemented.

**Linking the Cadastre with European cadasters (EULIS)**

AREC is a candidate country for membership in the European Economic Interest Grouping (EEIG). The European Economic Interest Grouping is formed in accordance with the corporate contract of EEIG on 3 March 2011 and is registered as a legal entity in the Netherlands. The purpose of the existence of this association is to establish a European service for land information which provides a unique access to European electronic information related to real estate. AREC believes that the membership in such an international association will provide integration of AREC into the EULIS platform which will enable access to services for real estate from national portals through a single portal. The development of a transnational exchange of real estate information from national registers and their integration into a wider European context will positively affect the further development of the real estate market on the business sector, thus contributing to the overall economic development of the country.

In order to fully implement the linking with the EULIS portal, the following steps are required:
• Establishment of communication through Web Services between AREC and EULIS in order to provide access to user data
• Transliteration of the data from the Real Estate Cadastre and translation of some of the Code Lists in the Real Estate Cadastre

Linking of the national spatial data portal of AREC with regional portals

AREC and the national agencies for Cadastre and geodesy from the region of Western Balkan, and: Kosovo Cadastral Agency, Central Authority for Registration of Real Estate in the Republic of Albania, National Authority for geospatial information in Albania, Federal Administration for Geodetic and Property Relations of FiH, the National Institute for surveying and property Affairs of the Republic of Serbia, the Directorate of real estate in the Republic of Montenegro and the Republic Geodetic Authority of the Republic of Serbia in cooperation with the Swedish Cadastre – Lantmäteriet as a twinning partner and the State Geodetic Administration of the Republic of Croatia as a junior partner, have implemented the project IMPULSE - Cooperation in the Western Balkan region - Infrastructure for Spatial Information in the region of Western Balkan (IMPULS). The project is financed by the Swedish International Development Agency – Sida and refers to the implementation of the INSPIRE-Directive, as well as the development of an infrastructure so that a cross-border exchange of geospatial data is enabled by creating services in order to effectively deliver the services which are in accordance with the INSPIRE standards that support the strengthening of the regional cooperation. The regional linking of the NSDI geoportals will be based on the national geoportals, whereby INSPIRE is a reference framework for the creation of services.

For the purpose of testing, the such established infrastructure data which are of interest to the regional countries and are part of the annexes of the INSPIRE-Directive are identified. The implementation of the pilot projects – use case will enable the search of data between at least two states by using the national geoportal which is linked to the neighboring national geoportal. Currently, the pilot project for crisis management is being tested, which is with an ability to search 4 topics of administrative units, digital field models,
orthophoto and geographical names through the services to view and download the
data. For this purpose, a regional contract for exchange of data and services between
the countries of the Western Balkan was signed.
This project is scheduled to be implemented by the middle of 2018.

Translation of 2 million deeds

AREC during 2014, within the framework of the signed Memorandum of
Understanding with the General Directorate of Land Registry and Cadastre of
Turkey, received a mobile hard disk with data on deed records. The data contained in
the mobile hard disk are samples of deed records for administrative units which
cover the territory of today’s Republic of Macedonia. The received material contains
about 500,000 sheets, or a total of 957 entries written in old Turkish language with
Arabic script. In the end of 2014, the work group composed of experts from AREC,
the State Archive of the Republic of Macedonia and the Institute of National History,
launched the pilot project Tapiska kniga - 788. Within this pilot project a total of 5147
entries referring to the kaza Gevgelija – Thessaloniki vilayet were processed and
analyzed.
After the analysis, the work group prepared an action plan for the translation,
processing and analysis of the entire historical material. Considering that there are
about 2,000,000 records and if all financial and organizational requirements are
provided, the duration of the process of translation, the processing of the entire
material would be carried out in a period of 7 to 10 years and would cost about 5.2
million Euros. The Ministry of Education and Science of the Republic of Macedonia
awards scholarships for learning the old Turkish language, so the assumption is that
in 2-3 years the number of hired translators could increase up to 7-8 persons.
Currently there are three authorized translators available for translation.
If this project, with the available resources, would be carried out in a period of 10
years, in order to be realized it is necessary that 500,000 Euros are provided annually
for translation, analysis and processing, and 200,000 Euros for development and
implementation of a software solution.
This project is of great importance to AREC because it will allow expansion of the
database for about 100 years ago, and the State Archive will be provided with
documentation which will be part of the archival funds and thus increase the
interest in scientific research. Considering the importance of this documentation for
the Republic of Macedonia, both scientific and historically, we believe that it must
not remain unexplored, because it is a treasure which is rarely received and which is
part of the history of the country, so in that direction it must receive the deserved treatment.
### 8. IMPLEMENTATION PLAN

#### 8.1 Rationale and design of the Program


2. **NPAA: chapter II Economic criteria, 2.1. Existence of a functioning market economy**

3. **Strategic priorities and objectives of the state administration body:**
   - Open, customer – oriented organization;
   - Continuous informing of the users about services and products, as well as the target groups, and citizens and professional users and media about the development programs and objectives that are focused on service delivery in a manner corresponding to their needs;
   - Building an image of a modern organization focusing on its development and
   - Improving the functionality of the Contact Center and the quality of services provided by the Contact Center

<table>
<thead>
<tr>
<th>Name of the Program:</th>
<th>Objective of the Program:</th>
</tr>
</thead>
<tbody>
<tr>
<td>„Marketing and communication“</td>
<td>Increased awareness and customer satisfaction</td>
</tr>
</tbody>
</table>

**Indicators of success of the Program:** Increased customer satisfaction from the current average rating of 3.9 to an average rating above 4.5 in a scale of satisfaction from 1 to 5.

**The Program is:** (mark the type of the Program) □horizontal  ▼ vertical

**Expected results (components) of the Program:**
### B: Plan for implementation of the Program

#### Result 1: Implementation plan

<table>
<thead>
<tr>
<th>Activity</th>
<th>Accountable</th>
<th>Consulted</th>
<th>Time frame</th>
<th>Necessary resources</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td><strong>beginning</strong> (month/year)</td>
<td><strong>end</strong> (month/year)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Human</td>
<td>Financial Macedonian denars</td>
</tr>
<tr>
<td>1. Developing a marketing strategy and implementation plan</td>
<td>Department for coordination of national and international activities</td>
<td>External users</td>
<td>January 2017 continuously</td>
<td>Continuous</td>
</tr>
<tr>
<td>2. Implementation of control and supervision</td>
<td>Sector for control and supervision</td>
<td>AREC/professional users</td>
<td>Continuously</td>
<td>Continuously</td>
</tr>
<tr>
<td>3. Help center Phase 2 (updating the software with new modules)</td>
<td>Sector for internal control/Department for customer care</td>
<td>Professional users/AREC</td>
<td>March 2017</td>
<td>December 2017</td>
</tr>
<tr>
<td>4. Surveys</td>
<td>Sector for Employees in</td>
<td>Continuously</td>
<td>Continuous</td>
<td>Continuous</td>
</tr>
</tbody>
</table>
### 5. Public campaign

<table>
<thead>
<tr>
<th>Area</th>
<th>Description</th>
<th>Responsible</th>
<th>Time</th>
<th>Frequency</th>
<th>Service Provider</th>
</tr>
</thead>
<tbody>
<tr>
<td>Planning Department, Department for national and international activities</td>
<td>Employees in AREC and service users</td>
<td>January 2017</td>
<td>Continuously</td>
<td>External contractor</td>
<td></td>
</tr>
</tbody>
</table>

**Total for result 1:** 5,700,000,00

### 8.2 A: Rationale and design of the Program

1. Explanation: The program “Updating in REC” results from:
   The strategic priority of the Government of the Republic of Macedonia set out in the Decision on establishing the strategic priorities of the Government of the Republic of Macedonia in 2017 No. 42-3545/1 dated 14 June 2016: increase of the economic growth and the employment rate, higher living standards of the citizens and better
quality of life, integration of the Republic of Macedonia in the European Union and NATO

2. NPAA: chapter II Economic criteria, 2.1. Existence of a functioning market economy

3. Strategic priorities and objectives of the state administration body:
   - Updating the cadastral parcels – second phase (updating the data from the systematic presentation, updating the data from conversion),
   - Survey of infrastructures of state and municipal property and
   - Improving the quality of the Cadastre data

Name of the Program: „Updating in REC“
Objective of the Program: Updated data in GCIS

- Indicators of success of the Program: number of updated CM, number of surveyed CM, number of registered infrastructure facilities, number of improved TD

The Program is: (mark the type of the Program) ☐ horizontal ▼ vertical

Expected results (components) of the Program:

<table>
<thead>
<tr>
<th>Result 1: % of updated CM and CP</th>
<th>Indicator of success: Percentage of updated CM and CP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Result 2: Surveyed infrastructures of state and municipal property</td>
<td>Indicator of success: Number of surveyed and registered infrastructure facilities</td>
</tr>
<tr>
<td>Result 3: Higher quality of the data in REC</td>
<td>Indicator of success: Percentage of improved data per cadastral municipalities and title deeds</td>
</tr>
</tbody>
</table>

Б: Plan for implementation of the Program

Result 1: Implementation plan

<table>
<thead>
<tr>
<th>Activity</th>
<th>Accountable</th>
<th>Consulted</th>
<th>Time frame</th>
<th>Necessary resources</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>beginning</td>
<td>end</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(month/year)</td>
<td>(month/year)</td>
</tr>
<tr>
<td><strong>1. Updating 1250 CM – survey of 17,000 cp</strong></td>
<td><strong>7 regional centers and the Center for REC – Skopje</strong></td>
<td><strong>AREC</strong></td>
<td><strong>June 2017</strong></td>
<td><strong>December 2019</strong></td>
</tr>
<tr>
<td>---</td>
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<td>---</td>
</tr>
<tr>
<td><strong>2. Hiring 100 persons from the geodetic field</strong></td>
<td><strong>7 regional centers and the Center for REC – Skopje</strong></td>
<td><strong>AREC</strong></td>
<td><strong>June 2017</strong></td>
<td><strong>December 2019</strong></td>
</tr>
<tr>
<td><strong>3. Procurement of surveying equipment and vehicles</strong></td>
<td><strong>AREC</strong></td>
<td><strong>AREC</strong></td>
<td><strong>June 2017</strong></td>
<td><strong>December 2019</strong></td>
</tr>
<tr>
<td><strong>4. Updating the inventory Cadastre 267 CM</strong></td>
<td><strong>AREC and 7 regional centers</strong></td>
<td><strong>AREC</strong></td>
<td><strong>June 2017</strong></td>
<td><strong>December 2019</strong></td>
</tr>
<tr>
<td><strong>5. Updating the data of cadastral municipalities with the use of conversion</strong></td>
<td><strong>AREC</strong></td>
<td><strong>AREC and other ministries</strong></td>
<td><strong>June 2017</strong></td>
<td><strong>Continuously</strong></td>
</tr>
</tbody>
</table>

**Total for result 1:**

| **AREC 82,000,000,00+ Funds 533,000,000,00= 615,000,000,00** |
### Result 2: Implementation plan

<table>
<thead>
<tr>
<th>Activity</th>
<th>Accountable</th>
<th>Consulted</th>
<th>Time frame</th>
<th>Necessary Resources</th>
<th>Financial Macedonian denars</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Survey of infrastructure facilities of state and municipal property</td>
<td>AREC/stakeholders</td>
<td>MTC, Zels, PE for State Roads</td>
<td>beginning (month/year)</td>
<td>end (month/year)</td>
<td>Human</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>January 2017</td>
<td>Continuously</td>
<td></td>
</tr>
<tr>
<td>Total for result 2:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>307.500.000,00</td>
</tr>
</tbody>
</table>

### Result 3: Implementation plan

<table>
<thead>
<tr>
<th>Activity</th>
<th>Accountable</th>
<th>Consulted</th>
<th>Time frame</th>
<th>Necessary resources</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Preparation and analysis of an action plan aimed at improving the quality of the Cadastre data</td>
<td>7 regional centers and the Center for REC – Skopje</td>
<td>AREC/stakeholders</td>
<td>beginning (month/year): January 2017</td>
<td>end (month/year): December 2017</td>
</tr>
</tbody>
</table>
8.3  

*A: Rationale and design of the Program*


2. NPAA: chapter II Economic criteria, 2.1. Existence of a functioning market economy
### 3. Strategic priorities and objectives of the state administration body:
- Registration of the insurance policies for real estate in the Real Estate Cadastre
- Registration of the building guarantee in the Real Estate Cadastre
- Registration of the Certificate for energy efficiency in the Real Estate Cadastre and
- Maintenance and upgrade of the distribution system of AREC (OSSP)

<table>
<thead>
<tr>
<th>Name of the Program:</th>
<th>Objective of the Program:</th>
</tr>
</thead>
<tbody>
<tr>
<td>„ Expanding the base of the REC “</td>
<td>Expanding the base of the REC by adding new data</td>
</tr>
</tbody>
</table>

- Indicators of success of the Program: Number of registered insurance policies, number of registered guarantees, number of registered Certificates for energy efficiency and number of issued products and services

The Program is: (mark the type of the Program) [ ] horizontal  ✔ vertical

**Expected results (components) of the Program:**

<table>
<thead>
<tr>
<th>Result 1: operating system for registration of insurance policies</th>
<th>Indicator of success: Number of registered insurance policies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Result 2: operating system for registration of building guarantees</td>
<td>Indicator of success: Number of registered guarantees</td>
</tr>
<tr>
<td>Introduced new functionalities in the REC</td>
<td></td>
</tr>
<tr>
<td>Result 3: Operating system for registration of Certificates of energy efficiency</td>
<td>Indicator of success: Number of registered Certificates for energy efficiency</td>
</tr>
<tr>
<td>Result 4: Operating and functional distribution system</td>
<td>Indicator of success: Number of issued products and services</td>
</tr>
</tbody>
</table>

### Б: Plan for implementation of the Program
## Result 1: Implementation plan

<table>
<thead>
<tr>
<th>Activity</th>
<th>Accountable</th>
<th>Consulted</th>
<th>Time frame</th>
<th>Necessary resources</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>beginning (month/year)</td>
<td>end (month/year)</td>
</tr>
<tr>
<td>1. Upgrade of the e-Kat system</td>
<td>AREC and work group on electronic Cadastre</td>
<td>Insurance companies/ Agency for Insurance Supervision</td>
<td>January 2018</td>
<td>October 2018</td>
</tr>
<tr>
<td>2. Electronic linking of the insurance companies with the electronic Cadastre</td>
<td>IT sector</td>
<td>Users</td>
<td>October 2018</td>
<td>December 2018</td>
</tr>
<tr>
<td><strong>Total for result 1:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Result 2: Implementation plan

<table>
<thead>
<tr>
<th>Activity</th>
<th>Accountable</th>
<th>Consulted</th>
<th>Time frame</th>
<th>Necessary resources</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>beginning (month/year)</td>
<td>end (month/year)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
1. Defining the procedure and upgrade of the e-Kat system

<table>
<thead>
<tr>
<th>Activity</th>
<th>Accountable</th>
<th>Consulted</th>
<th>Time frame</th>
<th>Necessary resources</th>
<th>denars</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>AREC and work group on electronic Cadastre</td>
<td>MTC</td>
<td>January 2017 - December 2017</td>
<td>AREC/ work group on electronic Cadastre</td>
<td>615,000.00</td>
</tr>
</tbody>
</table>

**Total for result 2:**

<table>
<thead>
<tr>
<th>Activity</th>
<th>Accountable</th>
<th>Consulted</th>
<th>Time frame</th>
<th>Necessary resources</th>
<th>denars</th>
</tr>
</thead>
<tbody>
<tr>
<td>Result 3: Implementation plan</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>AREC and work group on electronic Cadastre</td>
<td>Ministry of Economy/ MTC</td>
<td>January 2018 - December 2018</td>
<td>AREC and work group on electronic Cadastre</td>
<td>615,000.00</td>
</tr>
</tbody>
</table>

**Total for result 3:**

<table>
<thead>
<tr>
<th>Activity</th>
<th>Accountable</th>
<th>Consulted</th>
<th>Time frame</th>
<th>Necessary resources</th>
<th>denars</th>
</tr>
</thead>
<tbody>
<tr>
<td>Result 4: Implementation plan</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Activity</th>
<th>Accountable</th>
<th>Consulted</th>
<th>Time frame</th>
<th>Necessary resources</th>
<th>denars</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>AREC and work group on electronic Cadastre</td>
<td>Ministry of Economy/ MTC</td>
<td>January 2018 - December 2018</td>
<td>AREC and work group on electronic Cadastre</td>
<td>615,000.00</td>
</tr>
</tbody>
</table>

**Total for result 4:**

<table>
<thead>
<tr>
<th>Activity</th>
<th>Accountable</th>
<th>Consulted</th>
<th>Time frame</th>
<th>Necessary resources</th>
<th>denars</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>AREC and work group on electronic Cadastre</td>
<td>Ministry of Economy/ MTC</td>
<td>January 2018 - December 2018</td>
<td>AREC and work group on electronic Cadastre</td>
<td>615,000.00</td>
</tr>
<tr>
<td>Activity</td>
<td>Accountable</td>
<td>Consulted</td>
<td>Time frame</td>
<td>Necessary resources</td>
<td>Financial Macedonian denars</td>
</tr>
<tr>
<td>-------------------------------------------------------------------------</td>
<td>-------------------------------------------------------</td>
<td>-----------------------------------------------------</td>
<td>---------------------</td>
<td>--------------------------------------------</td>
<td>-----------------------------</td>
</tr>
<tr>
<td>1. Preventive and adaptive maintenance of the electronic Cadastre and</td>
<td>AREC and work group on electronic Cadastre</td>
<td>AREC and work group on electronic Cadastre</td>
<td>January 2017 - December 2018</td>
<td>External contractors – coordinator from AREC</td>
<td>45.000.000,00</td>
</tr>
<tr>
<td>the electronic counter</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Preventive and adaptive maintenance of the distribution system</td>
<td>AREC and work group on distribution system</td>
<td>AREC and work group on distribution system</td>
<td>January 2017 - December 2019</td>
<td>External contractors – coordinator from AREC</td>
<td>6.000.000,00</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Study on disaster recovery data center and a procedure for disaster</td>
<td>AREC</td>
<td>AREC, CREC and 7 regional centers</td>
<td>January 2017 - December 2019</td>
<td>External contractors</td>
<td>1.000.000,00</td>
</tr>
<tr>
<td>recovery</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total for result 4:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>52.000.000,00</strong></td>
</tr>
<tr>
<td><strong>8.4</strong></td>
<td><strong>A: Rationale and design of the Program</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>1.</strong> Explanation: The program &quot;New functionalities in GCIS&quot; results from: The strategic priority of the Government of the Republic of Macedonia set out in the Decision on establishing the strategic priorities of the Government of the Republic of Macedonia in 2017 No. 42-3545/1 dated 14 June 2016: increase of the economic growth and the employment rate, higher living standards of the citizens and better</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
2. NPAA: chapter II Economic criteria, 2.1. Existence of a functioning market economy

3. Strategic priorities and objectives of the state administration body:
   Institutional development
   - Graphical Register of Construction Land
   - 3D Cadastre
   - Address Register
   - Mass assessment

Name of the Program: „ New functionalities in GCIS “
Objective of the Program: Introduction of new registers and systems in order to improve the services of AREC

Indicators of success of the Program:
- Established and operating Graphical Register of Construction Land, established system for digital registration of floor plans (3D Cadastre), established Address Register of the entire territory of the Republic of Macedonia and successful introduction of mass assessment

The Program is: (mark the type of the Program) ☑ horizontal  ✔ vertical

Expected results (components) of the Program:

<table>
<thead>
<tr>
<th>Result 1: Standardized urban plans in GRCL</th>
<th>Indicator of success: Number of construction parcels in GRCL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Result 2: Established 3D Cadastre</td>
<td>Indicator of success: Number of registered buildings with digital floor plans in the 3D Cadastre</td>
</tr>
<tr>
<td>Result 3: Established and operating Address Register</td>
<td>Indicator of success: Number of settlements in which an Address Register has been established</td>
</tr>
<tr>
<td>Result 4: Established mass assessment for the entire territory of the Republic of Macedonia</td>
<td>Indicator of success: Number of defined areas for mass assessment for the entire territory of the Republic of</td>
</tr>
</tbody>
</table>
### В: Plan for implementation of the Program

#### Result 1: Implementation plan

<table>
<thead>
<tr>
<th>Activity</th>
<th>Accountable</th>
<th>Consulted</th>
<th>Time frame</th>
<th>Necessary resources</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>beginning (month/year)</td>
<td>end (month/year)</td>
</tr>
<tr>
<td>1. System for Graphic Register of Construction Land (preventive and adaptive)</td>
<td>AREC, CREC, 7 regional centers</td>
<td>MTC, Chamber of authorized architects and engineers</td>
<td>June 2017</td>
<td>December 2019</td>
</tr>
<tr>
<td><strong>Total for result 1:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Result 2: Implementation plan

<table>
<thead>
<tr>
<th>Activity</th>
<th>Accountable</th>
<th>Consulted</th>
<th>Time frame</th>
<th>Necessary resources</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>beginning (month/year)</td>
<td>end (month/year)</td>
</tr>
<tr>
<td>1. Development and implementation of a 3D Cadastre</td>
<td>AREC, CREC, 7 regional centers</td>
<td>AREC, Faculty of Civil Engineering, Chamber of</td>
<td>February 2017</td>
<td>December 2018</td>
</tr>
<tr>
<td>Activity</td>
<td>Accountable</td>
<td>Consulted</td>
<td>Time frame</td>
<td>Necessary resources</td>
</tr>
<tr>
<td>-------------------------------------------------------------------------</td>
<td>-----------------------------------</td>
<td>------------------------------------</td>
<td>------------</td>
<td>---------------------</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Drafting of laws and bylaws</td>
<td>AREC</td>
<td>MTandC, Chamber of authorized</td>
<td>January 2017</td>
<td>December 2017</td>
</tr>
<tr>
<td></td>
<td></td>
<td>surveyors</td>
<td></td>
<td>Internal</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Registration of buildings in the 3D Cadastre</td>
<td>AREC, CREC Skopje, 7 regional</td>
<td>AREC</td>
<td>December 2018</td>
<td>Continuously</td>
</tr>
<tr>
<td></td>
<td>centers</td>
<td></td>
<td></td>
<td>Internal</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Result 3: Implementation plan</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Activity</td>
<td>Accountable</td>
<td>Consulted</td>
<td>Time frame</td>
<td>Necessary resources</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Development and implementation of the system for an Address Register</td>
<td>AREC, CREC Skopje, 7 regional</td>
<td>MTandC, MIA, CRM, ZELS,</td>
<td>November 2016</td>
<td>December 2018</td>
</tr>
<tr>
<td></td>
<td>centers</td>
<td></td>
<td></td>
<td>Internal</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Field gathering of existing addresses and establishment of address</td>
<td>AREC</td>
<td>MTandC, ZELS, CRM</td>
<td>December 2016</td>
<td>December 2019</td>
</tr>
<tr>
<td>data for each settlement in the Republic of Macedonia</td>
<td></td>
<td></td>
<td></td>
<td>External</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total for result 3:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Total for result 2:** 8,600,000,00
### Result 4: Implementation plan

<table>
<thead>
<tr>
<th>Activity</th>
<th>Accountable</th>
<th>Consulted</th>
<th>Time frame</th>
<th>Necessary resources</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>beginning</td>
<td>end</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(month/year)</td>
<td>(month/year)</td>
</tr>
<tr>
<td>1. Development of a system for calculation of the areas of mass assessment</td>
<td>AREC</td>
<td>Chamber of appraisers</td>
<td>April 2017</td>
<td>June 2019</td>
</tr>
<tr>
<td>2. Field gathering of data for mass assessment</td>
<td>AREC</td>
<td>Chamber of appraisers</td>
<td>January 2017</td>
<td>December 2019</td>
</tr>
<tr>
<td><strong>Total for result 4:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### 8.5 A: Rationale and design of the Program

1. Explanation: The program “Basic surveying works and cartography” results from:
2. NPAA: chapter II Economic criteria, 2.1. Existence of a functioning market economy

3. Strategic priorities and objectives of the state administration body:
   - Established modern geodetic reference infrastructure,
   - Orthophoto imaging and laser scanning of the entire territory of the Republic of Macedonia,
   - Produced mid-scale and small-scale topographic and special purpose maps and
   - Established ETRS89 coordinate system which is put into use

<table>
<thead>
<tr>
<th>Name of the Program: „Basic surveying works and cartography“</th>
<th>Objective of the Program: Established geodetic reference networks by international standards aimed at applying modern measurement technologies and produced topographic and special purpose maps in accordance with the market requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indicators of success of the Program: Established modern geodetic reference networks which are put into use and produced mid-scale and small-scale topographic and special purpose maps</td>
<td></td>
</tr>
<tr>
<td>The Program is (mark the type of the Program) ✓ хоризонтална ✓ вертикална</td>
<td></td>
</tr>
</tbody>
</table>

Expected results (components) of the Program:

<table>
<thead>
<tr>
<th>Result 1:</th>
<th>Indicator of success:</th>
</tr>
</thead>
<tbody>
<tr>
<td>- functionality and maintenance of the MAKPOS system</td>
<td>- increased number of registered users of the MAKPOS system</td>
</tr>
<tr>
<td>- established modern geodetic reference networks on the entire territory of the Republic of Macedonia</td>
<td>- the passive and active GNSS network, the leveling network of high accuracy and the basic gravimetric network put into use and regularly maintained</td>
</tr>
<tr>
<td>- a precise geoid for the territory of the Republic of Macedonia</td>
<td>- A precise geoid for the territory of the Republic of Macedonia is put into use</td>
</tr>
</tbody>
</table>

Result 2: |  |
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>- produced orthophoto maps and a digital field model</td>
<td></td>
</tr>
<tr>
<td>Result 3:</td>
<td>Indicator of success:</td>
</tr>
<tr>
<td>----------</td>
<td>-----------------------</td>
</tr>
<tr>
<td>- produced mid-scale and small-scale topographic and special purpose maps</td>
<td>- number of produced maps (percentage of coverage of the territory of the Republic of Macedonia)</td>
</tr>
<tr>
<td>- selecting an optimal cartographic projection for the territory of the Republic of Macedonia which will follow the ETRS89 coordinate system</td>
<td>- the optimal cartographic projection for the territory of the Republic in Macedonia which will follow the ETRS89 coordinate system put into use</td>
</tr>
<tr>
<td>- identifying the need for establishment of a center for processing data from satellite images, pictures taken by unmanned aircrafts (drones) and laser scanners</td>
<td>- prepared study on establishing a center for processing data from satellite images, pictures taken by unmanned aircrafts (drones) and laser scanners</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Result 4:</th>
<th>Indicator of success:</th>
</tr>
</thead>
<tbody>
<tr>
<td>- established ETRS89 coordinate system</td>
<td>- ETRS89 coordinate system put into use</td>
</tr>
</tbody>
</table>

### Б: Plan for implementation of the Program

**Result 1: Implementation plan**

<table>
<thead>
<tr>
<th>Activity</th>
<th>Accountable</th>
<th>Consulted</th>
<th>Time frame</th>
<th>Necessary resources</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>beginning (month/year)</td>
<td>end (month/year)</td>
</tr>
<tr>
<td>1. Maintenance of the MAKPOS system</td>
<td>Department of Geodesy</td>
<td>AREC</td>
<td>Continuously</td>
<td>Continuously</td>
</tr>
<tr>
<td>2. Maintenance of the national geodetic reference networks</td>
<td>Department of Geodesy</td>
<td>AREC</td>
<td>January 2017</td>
<td>Continuously</td>
</tr>
<tr>
<td>----------------------------------------------------------</td>
<td>-----------------------</td>
<td>------</td>
<td>--------------</td>
<td>--------------</td>
</tr>
<tr>
<td>3. Determination of a precise geoid for the territory of the Republic of Macedonia</td>
<td>Department of Geodesy</td>
<td>AREC</td>
<td>January 2017</td>
<td>December 2017</td>
</tr>
<tr>
<td>4. Developed project for combined geodetic network (zero line network) on the territory of the Republic of Macedonia</td>
<td>Department of Geodesy</td>
<td>AREC</td>
<td>January 2018</td>
<td>December 2019</td>
</tr>
<tr>
<td><strong>Total for result 1:</strong></td>
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<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Result 2: Implementation plan**

<table>
<thead>
<tr>
<th>Activity</th>
<th>Accountable</th>
<th>Consulted</th>
<th>Time frame</th>
<th>Necessary resources</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total for result 2:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Result 3: Implementation plan

<table>
<thead>
<tr>
<th>Activity</th>
<th>Accountable</th>
<th>Consulted</th>
<th>Time frame</th>
<th>Necessary resources</th>
<th>Financial Macedonian denars</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Production of a topographic map of the Republic of Macedonia in scale 1: 100 000 and 200 000</td>
<td>Department of Geodesy</td>
<td>AREC</td>
<td>Ongoing</td>
<td>June 2018</td>
<td>Internal</td>
</tr>
<tr>
<td>2. Production of a topographic map of the Republic of Macedonia in scale 1: 500 000 and 1 000 000</td>
<td>Department of Geodesy</td>
<td>AREC</td>
<td>June 2018</td>
<td>December 2019</td>
<td>Internal</td>
</tr>
<tr>
<td>3. Updating the data of the topographic map in scale 1:25 000</td>
<td>Department of Geodesy</td>
<td>AREC</td>
<td>January 2019</td>
<td>Continuously</td>
<td>Internal</td>
</tr>
<tr>
<td>4. Production and maintenance of pan-European (Eurogeographics) cartographic</td>
<td>Department of Geodesy</td>
<td>AREC</td>
<td>January 2017</td>
<td>December 2019</td>
<td>Internal</td>
</tr>
<tr>
<td>Project Description</td>
<td>Responsible Department</td>
<td>Start Date</td>
<td>End Date</td>
<td>Contract Type</td>
<td>Funds</td>
</tr>
<tr>
<td>------------------------------------------------------------------------------------</td>
<td>------------------------</td>
<td>------------</td>
<td>----------</td>
<td>----------------------</td>
<td>-----------------------------</td>
</tr>
<tr>
<td>Products and a global map of the world in the area that covers the territory of</td>
<td>Department of Geodesy</td>
<td>January</td>
<td>December</td>
<td>Internal/External contractor</td>
<td>3,000,000,00</td>
</tr>
<tr>
<td>Macedonia</td>
<td>AREC/IMPULSE</td>
<td>2018</td>
<td>2019</td>
<td></td>
<td>Other funds or donations</td>
</tr>
<tr>
<td>5. Harmonization of the cartographic data sets in accordance with the INSPIRE-</td>
<td></td>
<td>Ongoing</td>
<td></td>
<td>Internal</td>
<td></td>
</tr>
<tr>
<td>Directive and the development of relevant metadata – activity related to NSDI</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Production of topographic maps in accordance with NATO standards</td>
<td>Department of Geodesy</td>
<td>January</td>
<td>December</td>
<td>Internal/External contractor</td>
<td>3,000,000,00</td>
</tr>
<tr>
<td>7. Production of special purpose maps</td>
<td>Department of Geodesy</td>
<td>January</td>
<td>December</td>
<td>Internal</td>
<td>1,000,000,00</td>
</tr>
<tr>
<td>8. Making a study</td>
<td>Department of Geodesy</td>
<td>January</td>
<td>December</td>
<td>External</td>
<td>500,000,00</td>
</tr>
<tr>
<td>Project Description</td>
<td>Department of Geodesy</td>
<td>Contractor</td>
<td>Start Date</td>
<td>End Date</td>
<td>Amount</td>
</tr>
<tr>
<td>------------------------------------------------------------------------------------</td>
<td>-----------------------</td>
<td>-------------</td>
<td>------------</td>
<td>----------</td>
<td>------------</td>
</tr>
<tr>
<td>Making a study on the establishment of a center for processing of data from satellite images, pictures taken by drones and laser scanners</td>
<td>AREC</td>
<td>External contractor</td>
<td>January 2017</td>
<td>December 2018</td>
<td>1,500,000.00</td>
</tr>
<tr>
<td>Modernization of the equipment for cartographic production</td>
<td>AREC</td>
<td>External contractor</td>
<td>January 2017</td>
<td>December 2019</td>
<td>15,000,000.00</td>
</tr>
</tbody>
</table>
### Result 4: Implementation plan

<table>
<thead>
<tr>
<th>Activity</th>
<th>Accountable</th>
<th>Consulted</th>
<th>Time frame</th>
<th>Necessary resources</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>beginning</td>
<td>end</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(month/year)</td>
<td>(month/year)</td>
</tr>
<tr>
<td>1. Establishing and putting into use an ETRS89 coordinate system</td>
<td>Department of basic geodetic works</td>
<td>AREC</td>
<td>January 2017</td>
<td>December 2019</td>
</tr>
<tr>
<td>2. Processing the data from</td>
<td>Department of Geodesy</td>
<td>AREC</td>
<td>January 2018</td>
<td>June 2018</td>
</tr>
</tbody>
</table>

**10. Procurement of unmanned aircrafts (drones) with relevant softwares for data processing**

| Department of Geodesy | AREC | January 2017 | December 2019 | External contractor/donations | 8.000.000,00 |

**Total for result 3:**

| Total for result 3: | AREC | 34.000.000,00 + Funds 3.000.000,00 = 37.000.000,00 |}

**Result 4: Implementation plan**

<table>
<thead>
<tr>
<th>Activity</th>
<th>accountable</th>
<th>Consulted</th>
<th>time frame</th>
<th>necessary resources</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Establishing and putting into use an ETRS89 coordinate system</td>
<td>Department of basic geodetic works</td>
<td>AREC</td>
<td>January 2017</td>
<td>December 2019</td>
</tr>
<tr>
<td>2. Processing the data from</td>
<td>Department of Geodesy</td>
<td>AREC</td>
<td>January 2018</td>
<td>June 2018</td>
</tr>
</tbody>
</table>
the conducted GNSS measurements EUREF points in the Republic of Macedonia

<table>
<thead>
<tr>
<th></th>
<th>Geodesy</th>
<th>2017</th>
<th>contractor</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total for result 4:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><strong>2.700.000,00</strong></td>
</tr>
</tbody>
</table>

### 8.6 A: Rationale and design of the Program

1. Explanation: The program “Institutional development” results from:

2. NPAA: chapter II Economic criteria, 2.1. Existence of a functioning market economy

3. Strategic priorities and objectives of the state administration body:
Establishment of effective and efficient processes by strengthening the institutional capacities and changing the organizational structure.
- Single-window system locally
- Linking the Cadastre with the European cadasters (EULIS)
- Linking the National portal of spatial data of AREC with regional portals
- Translation of 2 million deeds
- Exchange of data between the Real Estate Cadastre and the bases of real estate in municipalities
- Linking the system for issuing building permits used by municipalities with an electronic counter of
<table>
<thead>
<tr>
<th>Name of the Program:</th>
<th>Objective of the program:</th>
</tr>
</thead>
</table>
| „Institutional development“ | - linking with national portals from the region and the countries of the EU  
- exchange of data at national level |

**Indicators of success of the Program:** the national geo-portal is linked with the portals of the countries of the EU and the region, exchange of data at national level

The Program is: (mark the type of the Program) [ ] horizontal  ✔ vertical

**Expected results (components) of the Program:**

<table>
<thead>
<tr>
<th>Result 1: One-window system locally</th>
<th>Indicator of success: number of municipalities that have established a one-window system</th>
</tr>
</thead>
<tbody>
<tr>
<td>Result 2: Linking the national portal of AREC with the portal of EULIS</td>
<td>Indicator of success: the portal of AREC linked with EULIS</td>
</tr>
<tr>
<td>Result 3: Linking the National NSDI portal of AREC with NSDI portals of countries in the region</td>
<td>Indicator of success: AREC exchanges spatial data with the portals of the countries in the region through the National NSDI portal</td>
</tr>
<tr>
<td>Result 4: Translation of 2 million deeds</td>
<td>Indicator of success: Number of translated deeds</td>
</tr>
<tr>
<td>Result 5: Exchange of data between the Real Estate Cadastre and the bases of real estate in municipalities</td>
<td>Indicator of success: Percentage of exchanged data with the bases of real estate in municipalities</td>
</tr>
<tr>
<td>Result 6: Linking the system for issuing building permits used by municipalities with an electronic</td>
<td>Indicator of success: The electronic counter is linked with the system for issuing building permits</td>
</tr>
</tbody>
</table>
counter with the Agency for Real Estate Cadastre

Result 7: Creating 8 new regional centers at the expense of the existing 29

Indicator of success: Reduced number of regional offices and reduced costs

<table>
<thead>
<tr>
<th>B: Plan for implementation of the Program</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Result 1: Implementation plan</strong></td>
</tr>
<tr>
<td><strong>Activity</strong></td>
</tr>
<tr>
<td>---------------</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>1. Construction/adaptation of facilities that will house all state institutions at a local level</td>
</tr>
</tbody>
</table>

Result 2: Implementation plan
<table>
<thead>
<tr>
<th>1. Amendment to the Law on REC</th>
<th>AREC</th>
<th>AREC</th>
<th>January 2017</th>
<th>June 2017</th>
<th>/</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Creation of technical prerequisites for linking with the European geo-portal</td>
<td></td>
<td></td>
<td>January 2018</td>
<td>December 2018</td>
<td>1.850.000,00</td>
</tr>
<tr>
<td><strong>Total for result 2:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>1.850.000,00</strong></td>
</tr>
</tbody>
</table>

**Result 3: Implementation plan**

<table>
<thead>
<tr>
<th>Activity</th>
<th>Accountable</th>
<th>Consulted</th>
<th>Time frame</th>
<th>Necessary resources</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>beginning (month/year)</td>
<td>end (month/year)</td>
</tr>
<tr>
<td>1. Creation of technical prerequisites for linking with the European geo-portal</td>
<td>AREC/IMPULSE</td>
<td>AREC</td>
<td>January 2017</td>
<td>June</td>
</tr>
<tr>
<td><strong>Total for result 3:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Result 4: Implementation plan**

<table>
<thead>
<tr>
<th>Activity</th>
<th>Accountable</th>
<th>Consulted</th>
<th>Time frame</th>
<th>Necessary resources</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>beginning (month/year)</td>
<td>end (month/year)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
1. Translation of deeds  
State Archives and AREC  
State Archives, the Institute of National History, Ministry of Education  
January 2017  
December 2019  
3.700.000,00

| Total for result 4: | 3.700.000,00 |

### Result 5: Implementation plan

<table>
<thead>
<tr>
<th>Activity</th>
<th>Accountable</th>
<th>Consulted</th>
<th>Time frame</th>
<th>Necessary resources</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>beginning (month/year)</td>
<td>end (month/year)</td>
</tr>
<tr>
<td>2. Exchange of data between the Real Estate Cadastre and the bases of real estate in municipalities</td>
<td></td>
<td></td>
<td>January 2017</td>
<td>Continuously</td>
</tr>
</tbody>
</table>

| Total for result 5: | 300.000,00 |

### Result 6: Implementation plan

<table>
<thead>
<tr>
<th>Activity</th>
<th>Accountable</th>
<th>Consulted</th>
<th>Time frame</th>
<th>Necessary resources</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>beginning (month/year)</td>
<td>end (month/year)</td>
</tr>
<tr>
<td>Linking the system for issuing building permits used by AREC/ ZELS</td>
<td>AREC/ ZELS</td>
<td>MTC</td>
<td>January 2017</td>
<td>December 2019</td>
</tr>
</tbody>
</table>
municipalities with an electronic counter with the Agency for Real Estate Cadastre

<table>
<thead>
<tr>
<th>Activity</th>
<th>Accountable</th>
<th>Consulted</th>
<th>Time frame</th>
<th>Necessary resources</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Making a study on regionalization of AREC</td>
<td>AREC</td>
<td>Work group of AREC/ external consultant</td>
<td>January 2017 to July 2017</td>
<td>1.000.000,00</td>
</tr>
<tr>
<td>2. Pilot project: Establishment of one regional center</td>
<td>AREC</td>
<td></td>
<td>January 2018 to June 2019</td>
<td>6.000.000,00</td>
</tr>
<tr>
<td>3. Establishment of one new regional center</td>
<td></td>
<td></td>
<td>January 2019 to December 2019</td>
<td>6.000.000,00</td>
</tr>
</tbody>
</table>

**Total for result 7:** 13.000.000,00
**8.7 A: Rationale and design of the Program**

1. Explanation: The program “Consulting services and trainings” results from:
The strategic priority of the Government of the Republic of Macedonia set out in the Decision on establishing the strategic priorities of the Government of the Republic of Macedonia in 2017 No. 42-3545/1 dated 14 June 2016:
increase of the economic growth and the employment rate, higher living standards of the citizens and better quality of life, integration of the Republic of Macedonia in the European Union and NATO

2. NPAA: chapter II Economic criteria, 2.1. Existence of a functioning market economy

3. Strategic priorities and objectives of the state administration body:
Establishment of effective and efficient processes by strengthening the institutional capacities and changing the
- Educated and highly motivated staff;
- Transformation into a self-financing institution;
- Establishing a center for consulting services and trainings;
- Trained staff and trained professional users and
- Change in the existing legislation with the adoption of two new laws, and a Law on the Agency for Real Estate Cadastre and a Law on Real Estate Cadastre

<table>
<thead>
<tr>
<th>Name of the Program: „Consulting services and trainings“</th>
<th>Objective of the Program: - increase of the incomes of AREC due to conducted consulting services and trainings</th>
</tr>
</thead>
</table>

Indicators of success of the Program: Established system for providing consulting services and trainings

The Program is: (mark the type of the Program) ✓ horizontal  □ vertical

Expected results (components) of the Program:

<table>
<thead>
<tr>
<th>Expected result (component)</th>
<th>Indicator of success</th>
</tr>
</thead>
<tbody>
<tr>
<td>Result 1: Conducted trainings for professional users</td>
<td>Number of completed trainings</td>
</tr>
<tr>
<td>Result 2: Continuous trainings for authorized surveyors</td>
<td>Number of completed trainings</td>
</tr>
<tr>
<td>Result 3: Performing consulting services</td>
<td>Number of completed consulting services</td>
</tr>
<tr>
<td>Result 4: Preparation of new legal solutions in the area of competence of AREC and a special Law for the Real Estate Cadastre</td>
<td>New Law on AREC, new Law on Cadastral Procedures</td>
</tr>
</tbody>
</table>

## B: Plan for implementation of the Program

**Result 1: Implementation plan**
<table>
<thead>
<tr>
<th>Activity</th>
<th>Accountable</th>
<th>Consulted</th>
<th>Time frame</th>
<th>Necessary resources</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>beginning (month/year)</td>
<td>end (month/year)</td>
</tr>
<tr>
<td>1. Realization of the Annual program for conducting trainings</td>
<td>Department for coordination of international and national activities</td>
<td>/</td>
<td>January 2017</td>
<td>December 2017</td>
</tr>
<tr>
<td>Result 1:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total for result 1:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Result 2: Implementation plan</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Activity</td>
<td>Accountable</td>
<td>Consulted</td>
<td>Time frame</td>
<td>Necessary resources</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>beginning (month/year)</td>
<td>end (month/year)</td>
</tr>
<tr>
<td>1. Realization of the Annual program for conducting continuous trainings</td>
<td>Department for coordination of international and national activities</td>
<td>/</td>
<td>January 2017</td>
<td>December 2017</td>
</tr>
<tr>
<td>Total for result 2:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Result 3: Implementation plan</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Activity</td>
<td>Accountable</td>
<td>Consulted</td>
<td>Time frame</td>
<td>Necessary resources</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>beginning (month/year)</td>
<td>end (month/year)</td>
</tr>
<tr>
<td>1. Performing consulting</td>
<td>Department for                                                              /</td>
<td>January</td>
<td>Continuous</td>
<td>AREC</td>
</tr>
</tbody>
</table>

**Note:** The table structure and data are extracted from the document image provided.
<table>
<thead>
<tr>
<th>services which include office and field surveying, legal and information works in the field of surveying, Cadastre and surveying works for special purposes</th>
<th>coordination of international and national activities and employees of AREC</th>
<th>2017</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total for result 3:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>/</td>
</tr>
</tbody>
</table>
9. The funds for realization of the abovementioned plan are provided by the Budget of the Republic of Macedonia for the period from 2017 to 2019.

10. This strategic plan shall enter into force the day after its publication in the “Official Gazette of the Republic of Macedonia”, and shall be implemented from 1 January 2017.

No.42-8045/1
17 October 2016
Skopje

President of the Government
of the Republic of Macedonia
Emil Dimitriev, signature