

# Digitalization of Systematic Land Registration Process in Georgia

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**Key words:** Live Registration, Security of Tenure, Digital Cadastre, Digitalization

## SUMMARY

Georgia utilizes modern digital land registration infrastructure, which put the country in the leading positions in international ratings, however, the process of data collection and processing remained paper based, which was prone to human and other technical shortcomings and significantly hindered time needed for completion of the registration cycle.

Over the course of the land reform launched in 2016 the business process of the systematic land registration changed several times based on the feedback received during the implementation process. The internal evaluation of the process conducted by the National Agency of Public Registry demonstrated need for digitalization of the process. The key challenges identified during the review were: i) data collection and processing and ii) digital / live communication between the process stakeholders – NAPR and Citizens.

Digital transformation initiated by the NAPR and particularly the development of the Electronic Minutes Application, transformed paper based business process of Systematic Land Registration and took it to the digital plane. The process enabled the Government of Georgia to facilitate the design and launch of Nationwide Systematic Land Registration reform.

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## 1. INTRODUCTION

Following the breakup of the Soviet Union, Georgia began its long journey of transformation as the modern state with the rule of law, functioning democracy and the market economy. The Government of Georgia faced a significant national problem to land registration in rural communities across Georgia, in that rural land registration of both agriculture and urban lands remained very low, ranging from 50–75% unregistered based on municipalities.

Georgia utilizes modern digital land registration infrastructure, which put the country in the leading positions in international ratings, however, the process of data collection and processing remained paper based, which was prone to human and other technical shortcomings and significantly hindered time needed for completion of the registration cycle.

Over the course of the land reform launched in 2016 (GoG Regulation N351, 2016), the business process of the systematic land registration changed several times based on the feedback received during the implementation process. The internal evaluation of the process conducted by the National Agency of Public Registry demonstrated need for digitalization of the process. The key challenges identified during the review were: i) data collection and processing and ii) digital / live communication between the process stakeholders – NAPR and Citizens.

Starting from 2020, NAPR diverted its efforts towards streamlining the process. Through its in-house IT Team, NAPR developed a Systematic Land Registration Web Portal, website serves as the data hub of the SLR process, which supports interactive maps, applications submission and online public display process.

Additionally, by using AGILE development method, NAPR in-house IT team developed Electronic Minutes Application, on-field registration data collection and processing application, which allows to double check information with various governmental databases, provides information on the potential overlaps with other land plots/ geodetic layers and generates a cadastral drawing with registration data for the plot in real time. The development cycle, which also included the testing phase, coincided with COVID pandemic. The working product, was completed over the one year period. The AI based citizen identification module was additionally integrated in the application.

EMA optimized the GIS, registration, field and data processing procedures and refined the business process.

Digital transformation initiated by the NAPR and particularly the development of the Electronic Minutes Application, transformed paper based business process of Systematic Land Registration and took it to the digital plane. The process enabled the Government of Georgia to facilitate the design and launch of Nationwide Systematic Land Registration reform.

## 2. SYSTEMATIC LAND REGISTRATION PROCESS

During the first stages of land reform, systematic land registration process was comprised of five stages as demonstrated in the diagram below: i) Social Mobilization, ii) Fieldworks and Data Collection, iii) Data Processing iv) Public Display and Data Verification and v) Registration (SLR Law).

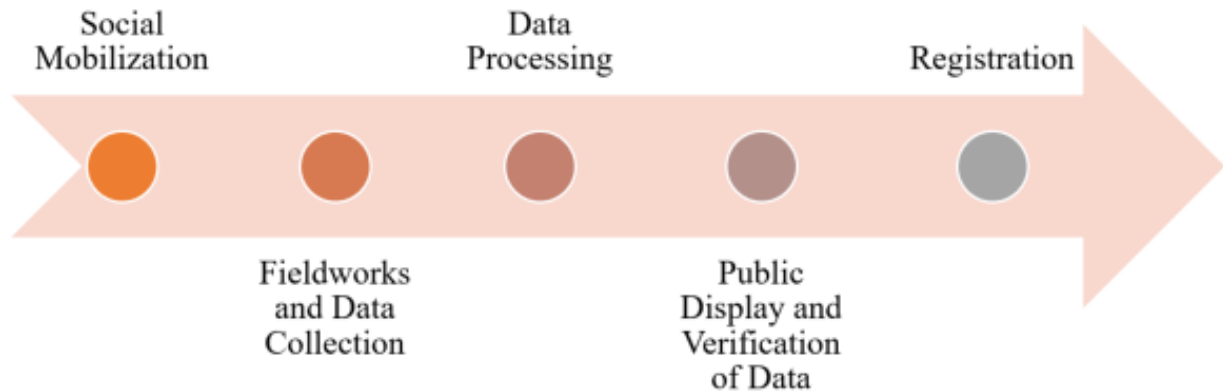


Figure 1. SLR Process

Two major pillars of the SLR process: data collection and public display was mostly paper based. During data collection stage, field teams would collect data by using the field inspection manuals, which were completed in the field by hand. At the end of the working day, documents were taken to the office, scanned and sent to the NAPR offices for the registrars to process the data.

Simultaneously, surveyors would transfer survey data from GPS rovers to their PCs to form a cadastral drawing. Once the legal and cadastral parts of the package were completed, data was sent for public display for verification by citizens.

As a result, cadastral survey/measurement plans often had overlaps with the cadastral layers of already registered plots or with protected areas. Data collected in the field contained errors, both factual and mechanical, which could be checked by teams when returned to offices or were revealed at a later stage during the registration process. Existing process created backlogs and Interested parties refrained from registering their land titles as interested person had to submit the documents either to the Public Service Hall or to a community centers which required time and funds.

Public display process was also paper based, maps of the registration areas, information about the owners and other relevant data were only available in the municipalities where the SLR process was implemented.

The image shows a completed paper-based document for land registration. It contains the following information:

- Title:** ინფორმაცია სარეგისტრაციო ბლოკში შევსებულ სხვა მიწის ნაკვეთის შესაქონების/შეღობის/შესარგებლების შესახებ (სტევის არსებობის შემთხვევაში).
- Registration Number:** 000214
- Applicant Information:** სახელი: ნატალია, გვ. 55, სექტორი 13
- Land Plot Information:** კატეგორია: კომერციული, პირადი №: 35001008230
- Registration Fee:** 577443956 - გირი, 555-3791-97 - ხელჯარი
- Checklist:**
  - შესაქონებ
  - საკუთრების უფლების რეგისტრაციის მოთხოვნის უფლებს მქონე პირი
  - ასევე გეოგრაფიული არეალი შევსებულ სხვა მიწის ნაკვეთის შესაქონების/შესარგებლების უფლების რეგისტრაციის მოთხოვნის უფლებს მქონე პირი
  - შეწინააღმდეგების წარმომადგენელი
- Registration Details:** კვარტალი № 55, ბლოკი № 006, ნაკვეთი № 023
- Signatures:** კომისიის წევრები: ნატალია ნატალია, ნატალია ნატალია

Figure 2. Example of the completed paper based document

The main goal of the EMA was to save time and ease the workload of the teams involved in the land registration process and eradicate errors.

**3. DIGITALIZATION OF PUBLIC DISPLAY PROCESS**

NAPR launched a systematic land registration web portal <http://pilotproject.napr.gov.ge/> to conduct online public displays and provide comprehensive information on the registration process. It presented regularly updated information on the project status, results, findings and facilitated public displays.

Citizens were given opportunity to participate in Public Display online from the comfort of their homes. Portal contained segregated information on: i) Registration Number; ii) Personal ID number of the Owner/Interested Person; iii) Cadastral Code; iv) Registration Block Map (pdf); v) Cadastral/Situational Measurement of the Plot (pdf); vi) Information about the map (list of owners etc). It also displayed detailed maps and information on the registration blocks and parcels for the public display.

Interested parties could submit online applications through the dedicated portal during the online PD and applications were directly linked to the NAPR Electronic Document Turnover System (digital program for sending and receiving official documentation and letters) and the NAPRWEB35 (digital program for land registration).

The online public display portal was consequently redesigned and redeveloped into the Web Portal for Systematic Land Registration, used for the National Rollout – <http://slr.napr.gov.ge>.

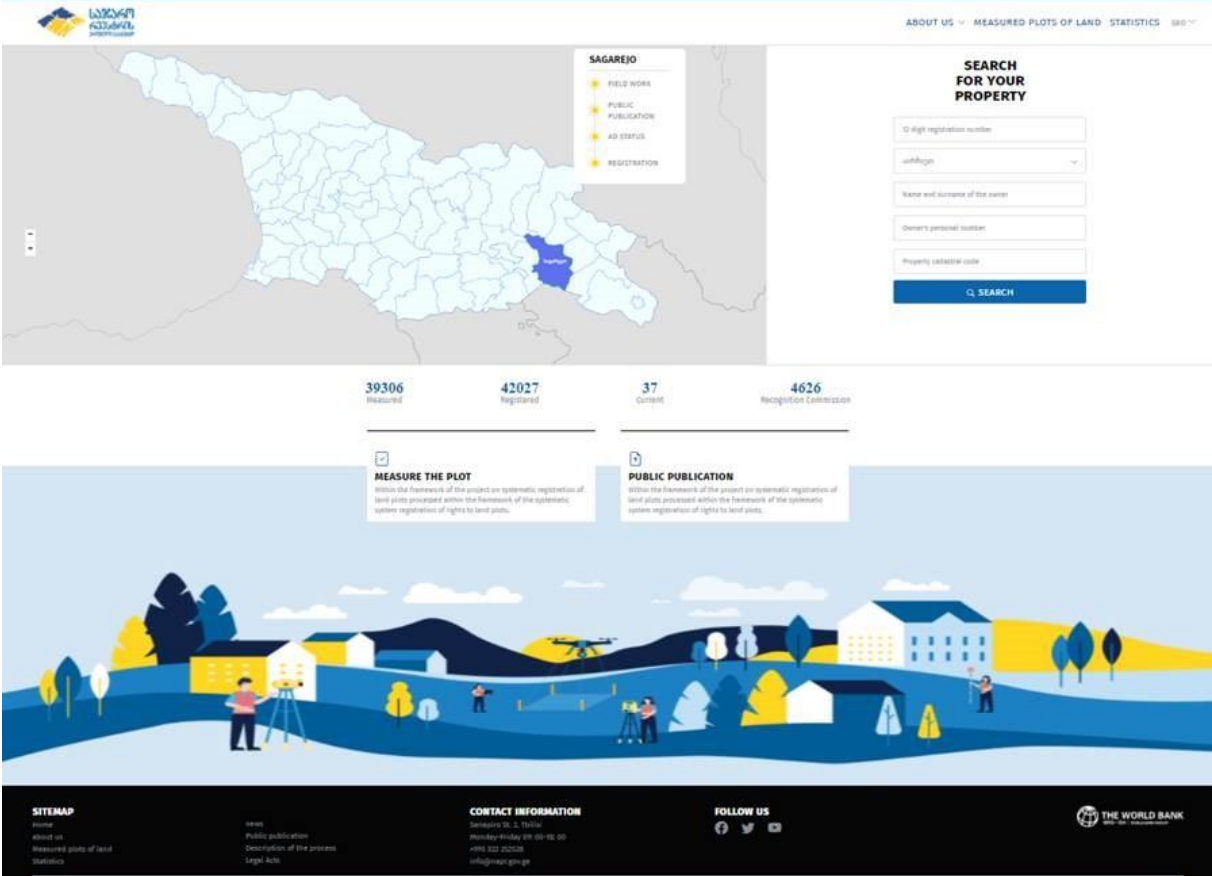


Figure 3. Public Display Portal

**4. EMA DEVELOPMENT**

Development was done through Agile Project Management Method, project team was divided into scrum teams. The main goal for team was to deliver product to end users as frequently as possible. Time between releases (delivery time) was approximately 1 week. The project was divided into several modules and each module was divided into several increments to support the iterative development. When all parts were finished, system testing and implementation started. During the whole project life-cycle, all teams were actively involved on the need to basis.

EMA is available on both PCs through a web platform and mobile phones (Androids). At the field survey stage, an interested person has access to a land parcel data through this app and can check them prior to signing the document.

Development of the EMA

NAPR incorporated following systems/processes into the EMA: i) Geographic Information System (QGIS / QFIELD) – Software used for surveys in the field; ii) Immovable property

registration (LANDREG) – NAPR registration software, which is developed in house and is tasked with immovable property registration in the country; iii) Bureau of Technical Inventory (BTI) – Database of immovable property (buildings) created prior to the creation of the NAPR; iv) The National Archives of Georgia (ARCHIVE) – Database of relevant title documents stored at the archives; v) The Revenue Service (RS) – Taxpayer list from the Revenue Service of the Ministry of Finance of Georgia; vi) State Service Development Agency (SDA) – Database from the civil registry, personal identification data of citizens; vii) Digital signature (DSSI) – Digital signature module; viii) Systematic Land Registration (SLR); ix) Information gathered during the systematic land registration process.

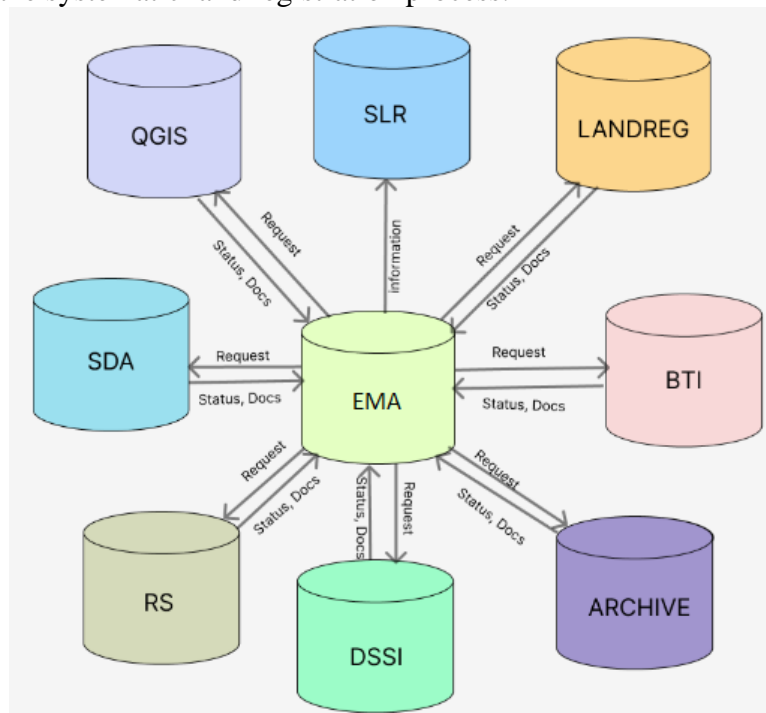


Figure 4. Systems/Processes Connected to EMA.

## 5. UPDATED SYSTEMATIC LAND REGISTRATION BUSINESS PROCESS

Introduction of the EMA rearranged the SLR process. During the first stages of land reform, systematic land registration process was comprised of five stages as demonstrated in the diagram below: i) Preparatory process, ii) Survey/Legal Processing/GIS Works; iii) Conditional Registration Decision; iv) Public Display; v) Automatic Renewal of Data/Registration. EMA allows different information systems to link and share information. System automatically retrieves information from National Archive, Revenue service, Public service development agency, Municipalities and etc. Due to the technological improvements, SLR process was optimized and 3 different process (Survey, Legal and GIS work) were combined in a single stage.

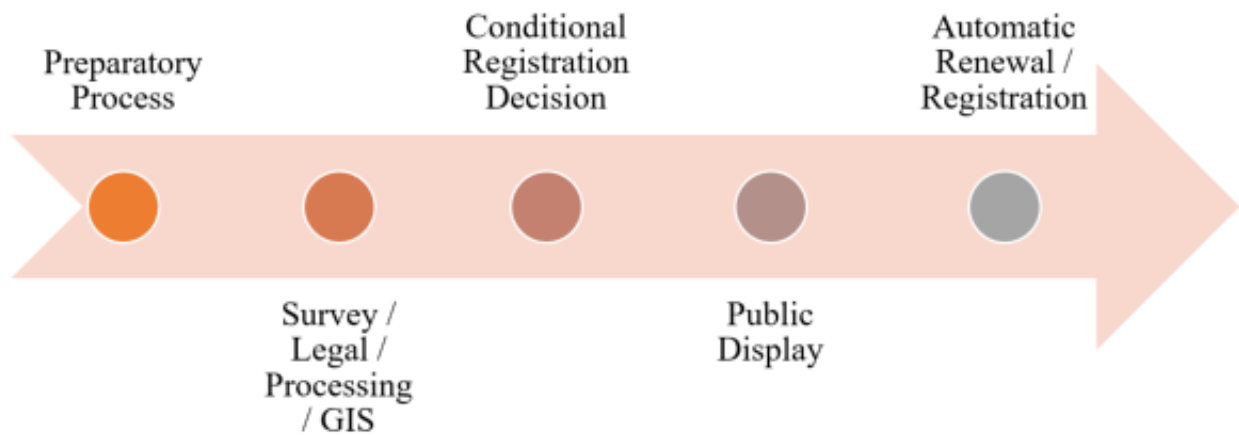
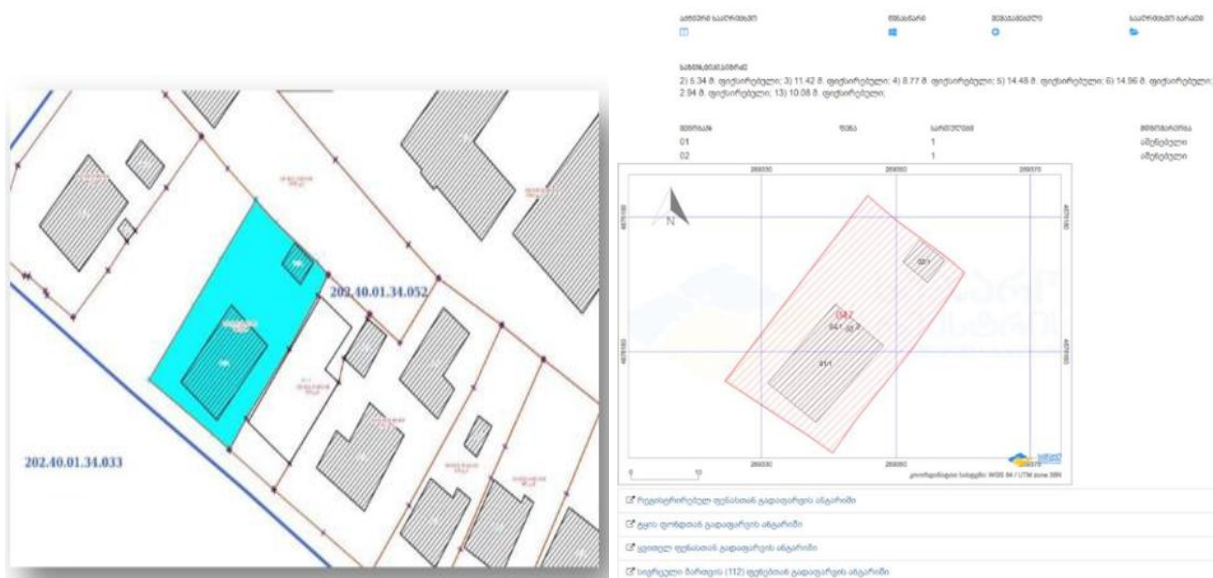


Figure 5. Updated SLR Process

### 5.1. EMA Operation Process

The measurements are carried out using GNSS SMART antenna and Android Smartphones with QFIELD field program installed. In it. All the survey teams now can carry out surveys simultaneously, in real time. After the completion of technical works, a field team enters a unique identification number (TAG) of a land parcel in the electronic minutes and the program automatically generates cadastral data of a land parcel, which includes: i) Land parcel location/shape; ii) Location of buildings-structures/shape/numbering/number of floors; iii) Area; and iv) Types of land parcel borders.



Figures 5-6 Same Plot in QFIELD and EMA Generated Cadastral Data of the Parcel





If the filed team requires to check the data on land titles, they may access LANDREG service to search for the required data (of a surveyed land parcel with the registered data, information and other archived geoinformation data).

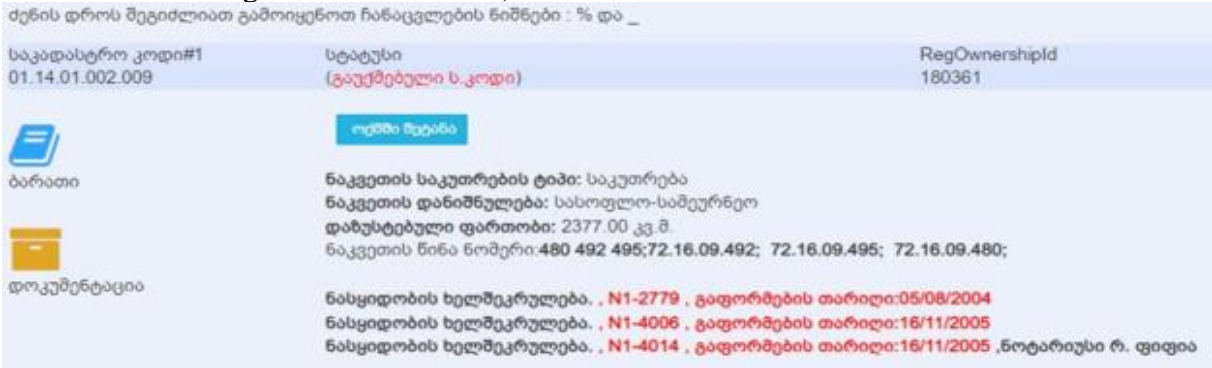


Figure 9. User Panel for Retrieving Land Title Documentation

5.1.3. Area Calculator

During the fieldwork stages, this the module allows operator (Registrar or a Surveyor) to choose documents for land title registration, select areas which are already registered based on the title document and automatically calculate the remaining area that can be registered based on the selected title document. This function is used also for the cases of so called squatted lands – property rights recognition procedure over illegally occupied state lands.

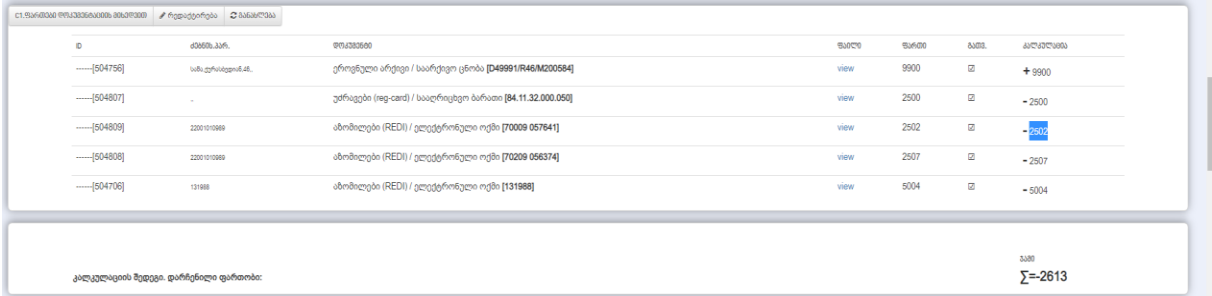


Figure 10. Area calculator Panel in EMA

Following the successful completion of the electronic minutes, program generates a PDF version of the minutes and cadastral drawing. Interested person has the opportunity to review the data and sign the generated PDF document electronically. The document than is certified by the qualified E-signature of the NAPR.



Figure 11. Sample Signature of the Interested Person with date and ID

#### 5.1.4. Conditional Registration, Public Display and Automatic Renewal of the Data

Upon certification of the minutes by the qualified E-signature of the NAPR, conditional registration decision is made and data is sent for public display to [www.slr.napr.gov.ge](http://www.slr.napr.gov.ge). Completed registration packages include both survey and legal information and form a part of a registration block. Registration blocks which are put on public display contain information on owners, interested persons, land plots and other relevant data required by law.



Figure 12. Sample of the Registration Block Map for Public Display

In the 30 day period data is on public display, parties are authorized to request reviews, resurveys, challenge the decision of the NAPR. However as the registration data is compiled with the help of EMA with participation of the interested parties, it resulted in 70% reduction in the number of applications for cadastral data check/verification during the public display process. Following the completion of the public display process, if there are no complaints registered, data is automatically updated and NAPR issues electronic certificate of ownership – extract from public registry, a publicly accessible document, which contains all the registration data on the land plot.



ამონაწერი საჯარო რეესტრიდან

განცხადების რეგისტრაცია  
N 882023179815 - 09/03/2023 17:23:02

მომზადების თარიღი  
10/03/2023 10:15:47

საკუთრების განყოფილება

ზონა	სექტორი	კვარტალი	ნაკვეთი	ნაკვეთის საკუთრების ტიპი:საკუთრება
თეთრიწყარო	ლაბა მანგლისი			ნაკვეთის დანიშნულება: სასოფლო-სამეურნეო დაზუსტებული ფართობი: 550.00 კვ.მ. ნაკვეთის წინა ნომერი: 84.18.40.000.258;
84	18	40	092/035	ნაკვეთის წინა ნომერი: 84.18.40.000.258;

მისამართი: რაიონი თეთრიწყარო , ლაბა მანგლისი , ქუჩა შენობა-ნაგებობის ჩამონათვალი№1 სტალინის , N 20

მესაკუთრის განყოფილება

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უფლების რეგისტრაცია: თარიღი 05/08/2016

- უფლების დამადასტურებელი დოკუმენტი:
- სამკვიდრო მოწმობა N160846999 , დამოწმების თარიღი:01/08/2016 ,ნოტარიუსი ლ. ირემაძე
  - სარეგისტრაციო ბლოკის გეგმა , N092
  - პრძინება , N825 , გაფორმების თარიღი:27/07/2018 , თეთრიწყაროს მუნიციპალიტეტის მერო

მესაკუთრეები:  
მარიკა თურქაძე, P/N: 01005023551

Figure 13. Electronic Extract from Public Registry

6. CONCLUSION

Electronic Minutes Application allowed combination of cadastral survey and data processing processes. As a result, flaws and discrepancies in data collection and processing were eliminated, human resources were saved and data processing time was reduced by 50%. Completion of the land registration in the country and putting a modern land management system in place will enhance land tenure security, improve land management practices, upgrade land market monitoring, advance development of the country’s agricultural sector and improve state land management and spatial planning.

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## **BIOGRAPHICAL NOTES**

Ms. Elene Grigolia – is an experienced, PMP certified project manager with an in-depth knowledge of the land sector working in public service delivery for land administration and innovation technology in the National Agency of Public Registry (NAPR), Ministry of Justice, Georgia. Among her professional achievements, Elene continues as a Component Lead, successful spearheading a large scale \$US50 million World Bank land market reform program in Georgia. Within this program Elene is responsible for overseeing and communicating results of the ICT assessment to key stakeholders, ensuring uptake and smooth implementation of the new systems as a basis for national systematic land registration rollout. Elene has a proven track record of working with government stakeholders and the private sector to collect data, analyse results.

Mr. Teimuraz Gabriadze – is a chief lawyer at the World Bank financed Irrigation and Land Marker Development Project impolened by National Agency of Public Registry (NAPR), Ministry of Justice, Georgia. Teimuraz participated in the implementation of the pilot project for systematic land registration and design and implementation of the subsequent scale up. Teimuraz is reponsible for legal support of the SLR project. As part of his duties Teimuraz supported all aspects of the SLR project including but not limited to IT modernization and Procurement. Mr. Gabriadze is also tasked with internationl relations and communcation with the Wolrd Bank team.

## **CONTACTS**

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