

DIGITALIZATION OF THE NATIONAL AGENCY FOR CADASTRE AND REAL ESTATE ADVERTISING SERVICES THROUGH E-TERRA AND E-PAY APPLICATIONS IN THE CONTEXT OF THE COVID PANDEMIC 19

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Abstract: *The accelerated pace of technological changes, which have irreparably changed the communication area and the business area, is so advanced that we can already discuss a post-digital age.*

According to research conducted by International Data Corporation, \$ 1.25 trillion was spent globally in 2019 for digital transformations, the number rapidly increasing to \$ 1.97 trillion by 2022, when over 60% of global Gross Domestic Product it will be digitized, generating growth in every area where offerings, operations and relationships are digitally improved.

Keywords: *digitization, online land book extract, cadastral documentation, digital signature, electronic identifier*

1. Introduction

In order to streamline the activity during the pandemic, the National Agency for Cadastre and Real Estate Advertising has taken measures, taking into account the imposed restrictions aimed at preventing and limiting the spread of COVID-19. Thus, starting with 16.03.2020, all requests submitted by notaries and individuals and legal entities authorized to perform cadastral works were resolved online.

The National Agency for Cadastre and Real Estate Advertising, a public institution subordinated to the Ministry of Public Works, Development and Administration, has updated the integrated computer system of cadastre and e-Terra Land Book, in this sense all services are offered online.

The measure was implemented in a relatively short time and comes to the aid of employees to allow them to continue their activity, given that access to the offices of cadastre and real estate advertising is no longer allowed to the public, in order to prevent and limit the spread of coronavirus.

2. Materials and Methods

The purpose of this paper is to highlight the way in which the digitization procedures for a series of cadastral operations have been simplified through the implementation of the

integrated computer system of cadastre and e-Terra land book regarding the introduction of digital technical documentation, requesting extracts online land book.

In this sense, all the persons who request an extract of the land book online will be able to obtain it without the need to go to the counters of the National Agency for Cadastre and Real Estate Advertising, under the following conditions:

a) creation of an account on the Epay platform managed by the National Agency for Cadastre and Real Estate Advertising, respectively authentication based on user and password within that account;

To perform this step you need the user of this service to have a valid email address, and choose a password that preferably contains a combination of letters, numbers and symbols.



Figure 1. Authentication in the E-pay application

b) entering the personal data necessary for the generation of receipts related to the requested services;

This step involves the introduction of personal information (name / surname, CNP, series / identity card number, address, etc.) necessary to generate evidence of payments made through this platform. There is also the possibility of managing this information by editing or modifying by supplementing the addresses, or by resetting the password.



Figure 2. Entering personal data in the E-pay application

c) choosing a service (issuing online Land Books, issuing online cadastral plan, GNSS positioning services, etc.)

Being a platform that addresses both users who do not have direct contact with the cadastral area and authorized individuals are offered general online services (extract Land Books online) and data specific to users of GNSS technology in the case of authorized individuals in the field of cadastre .

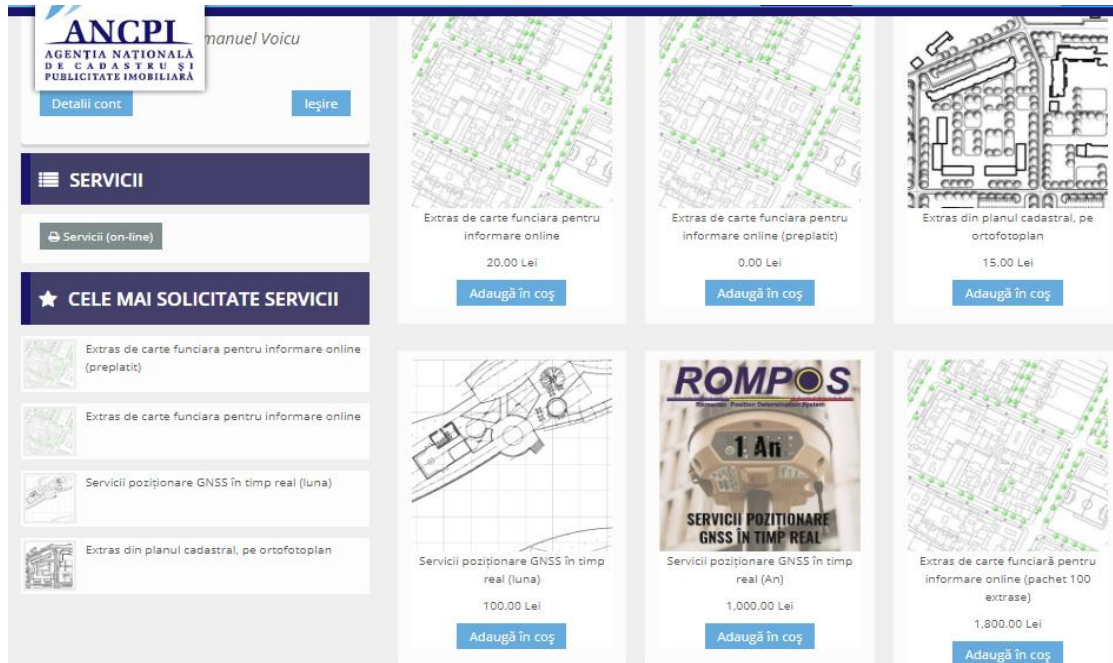


Figure 3. Choosing the online service in the E-pay application

d) the next step is to configure that service (if we are talking about issuing a land book extract online, it is necessary to know the electronic identifier, or the land book number, both data will be entered in the predefined fields).

It is necessary to mention the fact that regarding the land book extracts they can be identified either by IE- electronic identifier or by land book number (these identification parameters correspond to all recently established land books) or by the old book number land, respectively the related topographic number. Depending on the known data, the term for solving the request can vary from one day to three days.

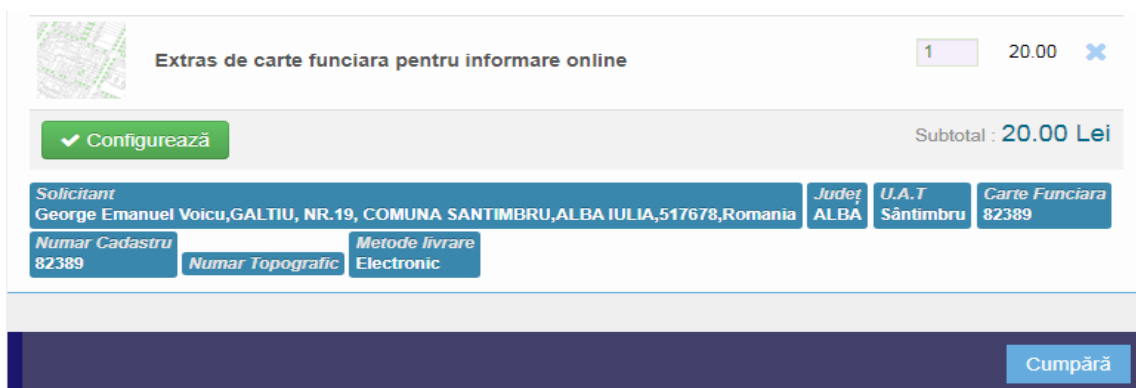


Figure 4. Entering the Land Book data in the E-pay application

f) the last steps are related to the confirmation of the order and the payment of the requested service through the bank card and to the download of the respective requested

document of the afferent receipt in .pdf format, during the time allocated to the respective service;



Figure 5. Solving the request in the E-Pay application

3. Results and Discussion

Regarding the digitization of cadastral documentation through the E-terra 3 application, in addition to the introduction of graphic data related to the import of land geometry and construction and the introduction of written data on area, category of use, number of plots, owners, etc., for efficiency and security data entered, it is mandatory the digital upload in .pdf format, of all documents and annexes that are the basis for the preparation of a cadastral documentation.

Basically, for the introduction of a cadastral documentation in the database, it is necessary to follow a series of steps in a strict order. This operation begins with the authentication based on user and password in the E-terra application, being logically continued by selecting a service from the 4 menus, in our case "technical documentation".

Once selected this service it is necessary to choose the type of documentation, having to choose from a wide range of documentation (first registration, parcelling or dismemberment, technical reception, etc.).

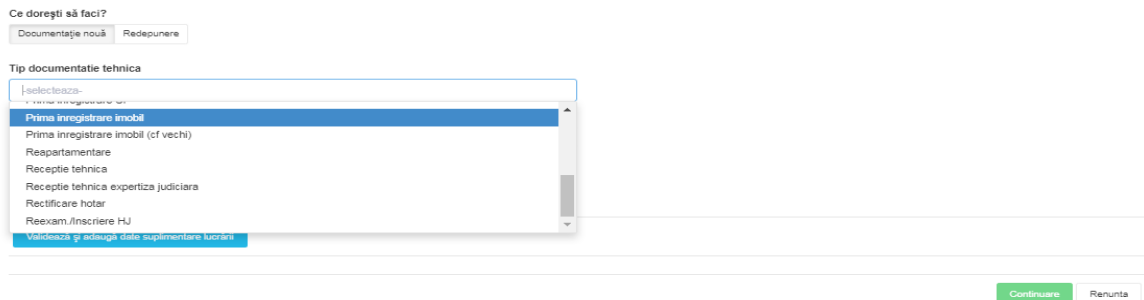


Figure 6. Selecting a type of documentation in the E-terra3 application

We will continue by selecting the county, respectively the ATU, followed by entering the data related to the building in question (for example: land, address, destination, number of

plots, categories of use, possible constructions, etc.). After entering these data will be imported the graphic entities related to the land, respectively to the constructions in .dxf format, archived with a usual archiving program.

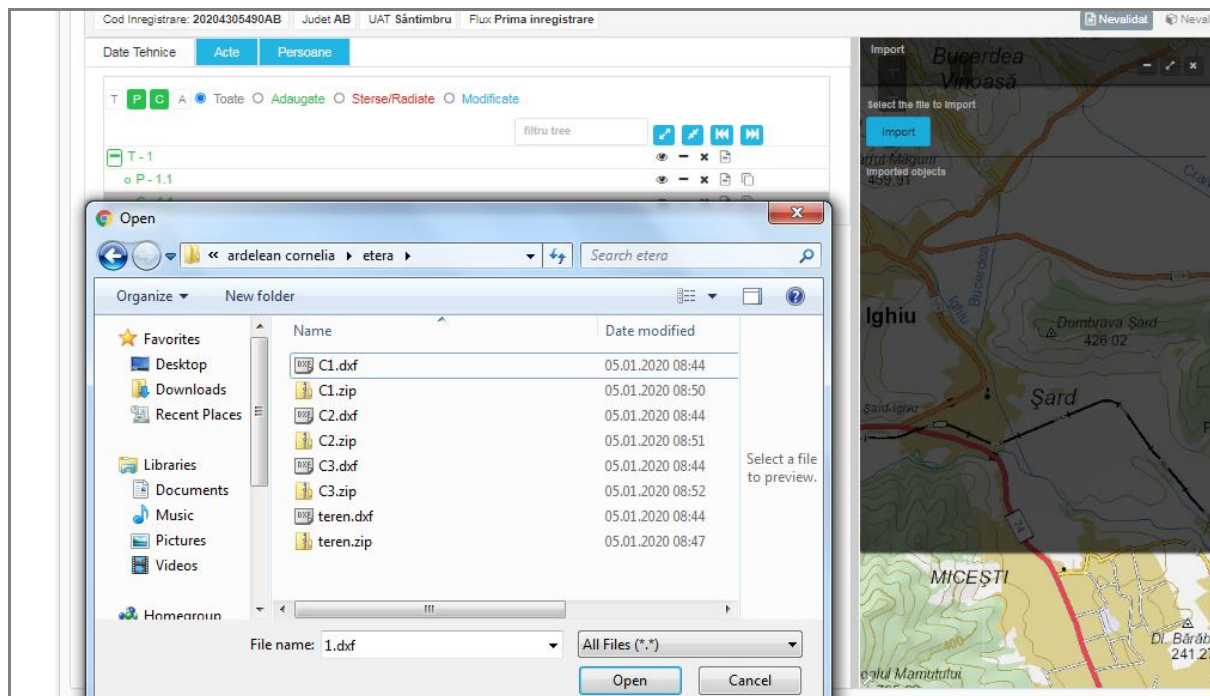


Figure 7. Import of graphic entities in the E-terra3 application

The following is the entry of data regarding the documents based on which the creation, updating, deletion, registration of certain land book data is requested. A novelty regarding the entry of these data is the loading of each document in .pdf format, in a predefined area, being mandatory that these documents be electronically signed by the authorized person.

In order to obtain the electronic signature, the authorized person is obliged to address an authorized company in this field, which will certify on the basis of an annual / multiannual subscription that the person in question fulfills certain obligations and standards provided by Law no. 455/2001 regarding the electronic signature.

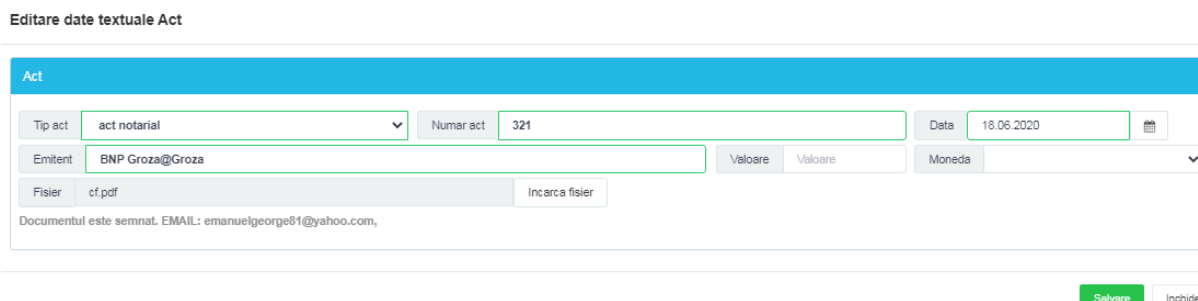


Figure 8. Introduction and validation of documents in the E-terra3 application

In the area of introduction of documents in .pdf format, in addition to the documents based on which a certain service is requested, it is mandatory to enter the annexes of the documentation, respectively the location and delimitation plan in the same format.

This document, which can be found in the agency's typology for "documents under private signature", must be digitally attached before the electronic signature: the graphic file (.dxf), the coordinate inventory (.doc / .docx) and the GPS field card. (usually .XML), following that after the approval and receipt of the documentation by the agency, to be digitally signed by the verifying inspector and will be made available to the authorized person in the area of issued documents, along with the extract and conclusion of the land book .

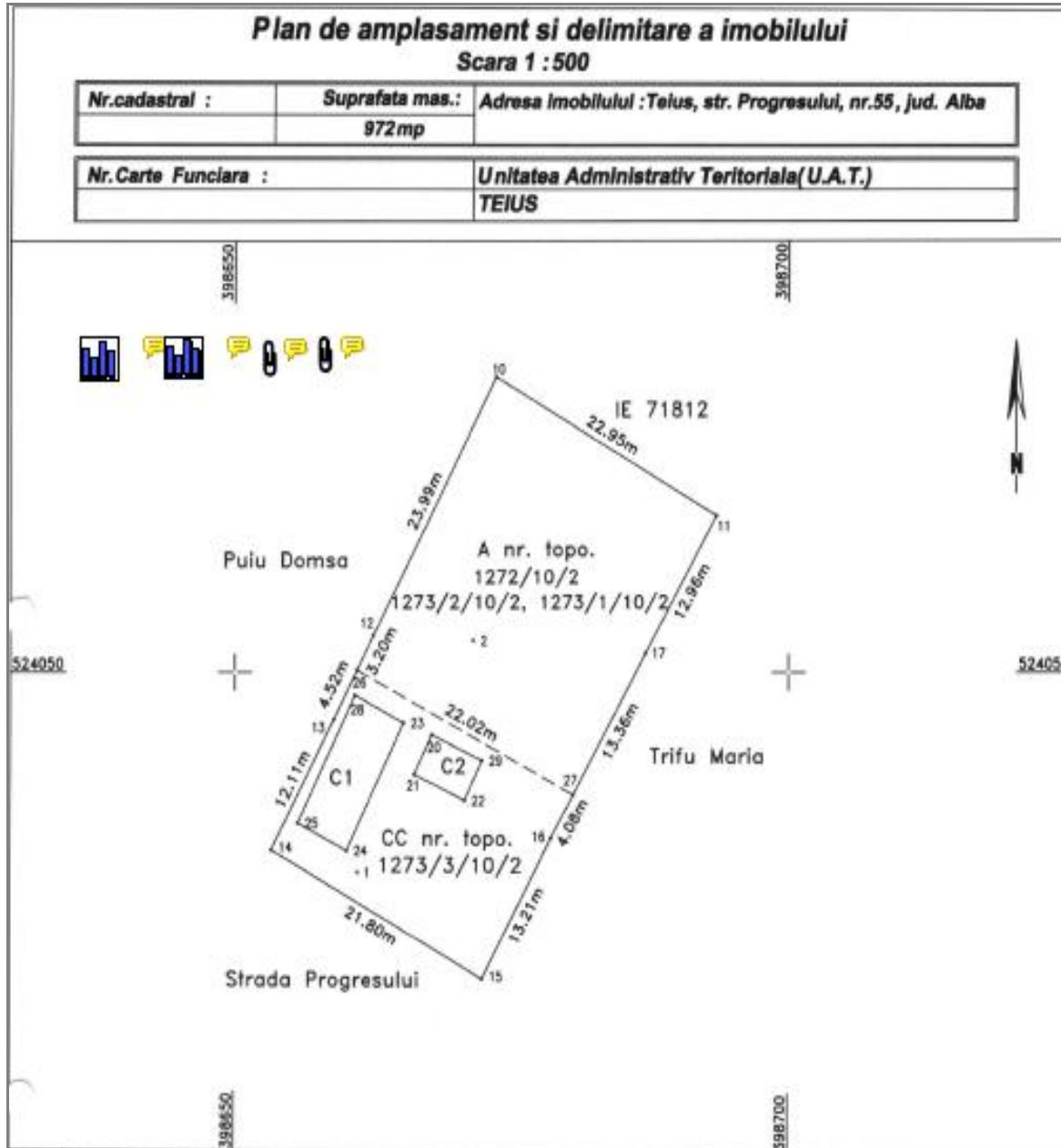


Figure 9. Attaching *.dxf, *.doc, *.xml files to the Property Location and Delimitation Plan

It is also necessary to enter the identification data of the owner / beneficiary, in the area of the documents, operations followed by the textual, spatial validation, respectively the saving of the entered data.

After completing these steps we will select the type of work in order to choose a code necessary to charge the work in question, the method of communication, the format of communication with the agency, we will save the request, and finally enter the billing area to enter data proving payments related to the previously chosen code.

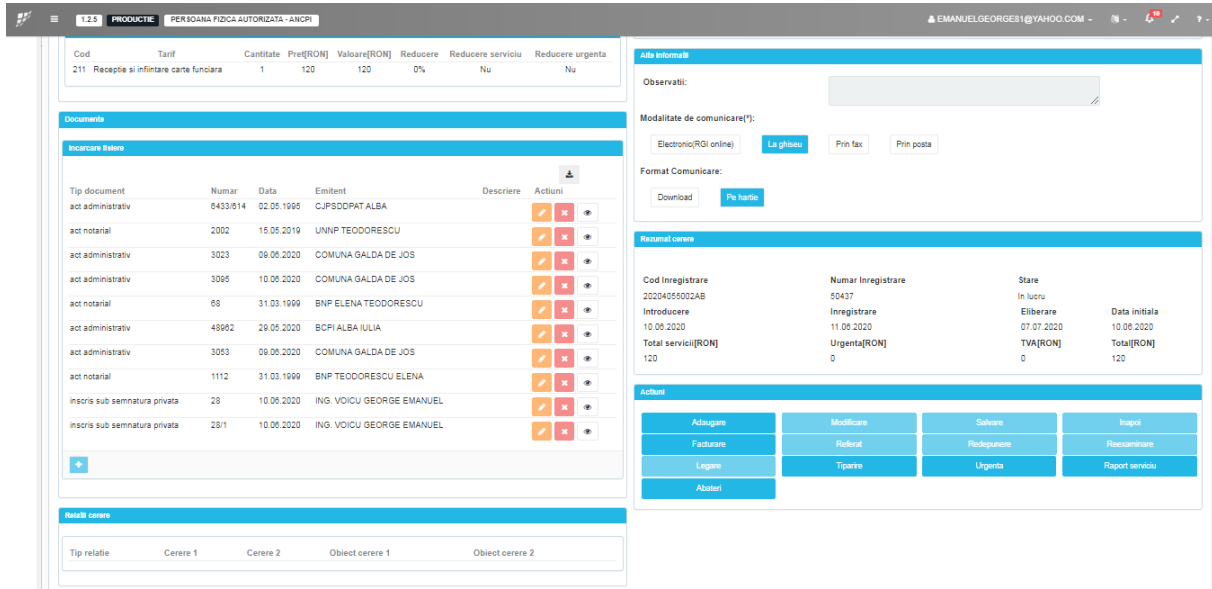


Figure 10. Validation of documents and selection of the tariff related to the type of work in the E-terra3 application

4. Conclusions

In the context generated by the prevention of the spread of Covid 19 and the continuous digitalization of services, the National Agency for Cadastre and Real Estate Advertising expands the range of services offered online to its partners.

The new functionalities are already available, due to the continuous development of the integrated computer system of cadastre and land book, which is one of the priorities of the agency during this period. These activities are limited to the stated objectives of the agency: no paperwork, no cash, no counter.

Thus, online payment will be extended, with the card, in the e-Terra application, for services such as first registration, parcelling or dismemberment. Among the new functionalities of the computer system is the automatic generation from the application, in electronic format, of the cadastral technical documentation, also known as P.A.D. (Location and Delimitation Plan), for buildings registered in the integrated system of cadastre and land book. Also, the development of the information system will reduce the deadlines for dismantling and merging real estate, as well as simplifying these processes.

Following the implementation of this method of digitizing the services offered by the National Agency for Cadastre and Real Estate Advertising, notaries and persons authorized to perform works in the cadastre can send online applications for registration in the land book, but also other applications they submitted at the counter. The only condition is that the documents contain a qualified electronic signature. On the first day alone, more than 30,000 applications were registered online (land book extracts for information, land book conclusions, authentication extracts, cadastral plan extracts, maps and plans, technical receptions, forensic examinations, etc.).

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