

ANNEX 5

SCOPE OF WORK

E-prykhystok Software

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1. Terms and definitions

Special terms used in these Terms of Reference are defined below. Other technical terminology is used in accordance with the applicable standards and recommendations of international organizations governing standardization.

- **DB (database)** - a collection of data organized according to a conceptual structure that describes the characteristics of this data and the relationships between them, and such a collection of data supports one or more areas of application.
- **Web browser** is a client application that allows you to view the content of web pages.
- **Web interface** is a set of screens and system controls that allow a user accessing the system through a web browser to maintain and manage the system.
- **IDP** is a citizen of Ukraine, a foreigner or a stateless person who legally stays on the territory of Ukraine and has the right to permanent residence in Ukraine, who was forced to leave or abandon his/her place of residence as a result of or in order to avoid the negative consequences of armed conflict, temporary occupation, widespread violence, human rights violations and natural or man-made emergencies.
- A **domain name** is a symbolic name of the hierarchical space of the Internet. A fully qualified domain name consists of the names of all domains it is part of, separated by dots.
- **IEIS** is an integrated electronic identification system.
- **SW** - software.
- **Server** - a computer (or special computer equipment) dedicated to performing certain service functions.
- **DBMS** - database management system.
- **Trembita system** - the system of electronic interaction of state electronic information resources Trembita is an information and communication system designed to automate and technologically support data exchange between subjects of electronic interaction of electronic information resources on the basis of uniform rules and exchange protocols in the course of providing public (electronic public) services and exercising other powers in accordance with their tasks.
- **TOR** - terms of reference.
- **API (Application Programming Interface)** - a set of ready-made classes, procedures, functions, structures and constants provided by an application (library, service) for use in external software products.
- **URNR** - Unique record number in the Unified State Demographic Register.
- **IBAN** - Bank account number standard.
- **ICS** - Information and Communication System.
- **MDM (MASTER DATA MANAGEMENT)** is a set of processes and tools for the continuous definition and management of master data.
- **Register** is an organized information system designed to form a list by entering information.

2. General provisions

2.1 Purpose of the document

This Scope of Work describes functional and non-functional requirements, define the procedure for developing an data analytics platform for accounting for data related to the compensation of expenses for temporary accommodation (stay) of internally displaced persons (hereinafter referred to as the "System").

2.2 Name of the System

The full name of the system is the Data Analytics Platform for Accounting of Data Related to the Compensation of Expenses for Temporary Accommodation (Stay) of Internally Displaced Persons (the "System").

2.3 Name of the Customer

Customer is the Ministry of Reintegration of the Temporarily Occupied Territories of Ukraine.

Address: 13 Chokolivskyi Boulevard, Kyiv, 01011.

The system is held by a technical administrator appointed by the Ministry of Reintegration of the Temporarily Occupied Territories, who ensures its operation;

The Lead beneficiary of the work performed is the State Enterprise "Reintegration and Restoration", which is managed by the Ministry of Reintegration.

2.4 List of documents on the basis of which the System is developed

The system is developed and implemented on the basis of the following legislative acts:

The Constitution of Ukraine;

The Law of Ukraine "On Ensuring the Rights and Freedoms of Internally Displaced Persons";

The Law of Ukraine "On Local Self-Government in Ukraine";

The Law of Ukraine "On Central Executive Bodies";

The Law of Ukraine "On Peculiarities of Providing Electronic Public Services";

The Law of Ukraine "On Information";

The Law of Ukraine "On Personal Data Protection";

The Law of Ukraine "On Electronic Trust Services";

The Law of Ukraine "On Electronic Documents and Electronic Document Management";

The Housing Code of Ukraine as amended by Law No. 2215-IX of 21.04.2022;

Resolution of the Cabinet of Ministers of Ukraine of March 19, 2022, No. 333 On Approval of the Procedure for Compensation of Expenses for Temporary Accommodation (Stay) of Internally Displaced Persons;

Resolution of the Cabinet of Ministers of Ukraine of August 30, 2022 No. 977 Some issues related to compensation for temporary accommodation (stay) of internally displaced persons;

Rules for ensuring the protection of information in information, telecommunication and information and telecommunication systems, approved by the Cabinet of Ministers of Ukraine on 29.03.2006 No. 373;

GOST 34.602-89 "Information Technology. Set of standards for automated systems. Technical directions for automated system making";

GOST 34.601-90 "Information technology. Set of standards for automated systems. Automated systems. Stages of development";

GOST 34.201-89 "Information Technology. Set of standards for automated systems. Types, sets and indication of documents for automated systems making";

GOST 19.101-77 (CEN 1626-79) "Unified system of program documentation. Types of programs and program documents";

GOST 19.201-78 "Terms of reference. Requirements for contents and form of presentation";

GOST 19.502-78 "Unified system for program documentation. Description of use. Requirements for contents and form of presentation";

DSTU 3008-95 "Information and documentation. Reports in the field of science and technology. Structure and rules of formalization";

DSTU ISO/IEC 14764-2002 "Information technology. Software support";

DSTU EN 301 549:2022 (EN 301 549 V3.2.1 (2021-03), IDT) "Information technology. Requirements for accessibility of ICT products and services".
DSTU ISO/IEC 2382:2017 "Information technology".

2.5 Planned project implementation timeframe

The Contractor undertakes to provide the services within the timeframe in accordance with the Schedule (Table 3).

2.6. Source of funding for the work

Source of funding: funding is provided by international organizations and/or other sources not prohibited by law.

3. Purpose, goals and objectives of the system development

Objective: Ensuring automation (optimization) and digitalization of the processes of collecting, verifying, integrating information data, storing information, accounting and generating data necessary to ensure compensation for expenses related to free temporary accommodation of internally displaced persons.

The main purpose of the System is to develop a software product intended for entering and processing the information specified in the Procedure for compensation of expenses for temporary accommodation (stay) of internally displaced persons, as well as for accounting and generating data necessary for persons who have accommodated internally displaced persons to compensate expenses related to free temporary accommodation of internally displaced persons.

3.1 Objectives of the System

The main tasks of the System include:

- automation of the process of collecting and summarizing the list of persons who have accommodated internally displaced persons;
- collecting data on residential premises and IDPs who are temporarily accommodated in it;
- automating the calculation of the amount of compensation paid for the temporary accommodation of IDPs.

4. Requirements

4.1 Description of the automation object

4.2 Requirements to the System architecture

The system should be implemented as a client-server application, taking into account web standards and modern approaches to web application development.

The basic architecture of the System, consisting of components and modules, is shown in the diagram (Appendix - "System Architecture").

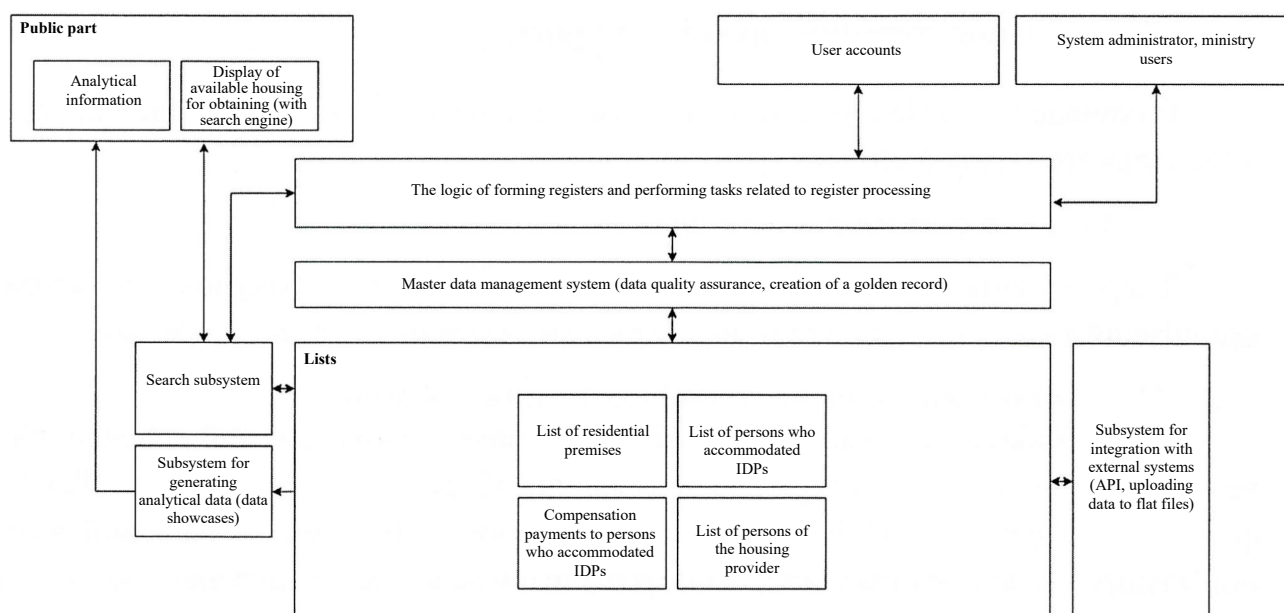


Figure. 1 - Basic architecture of the System

The system should consist of the following components and modules:

User accounts - a closed part of the System where users with the appropriate roles can view or perform actions according to the current process.

Logic of forming registers and performing tasks related to register processing - the module defines the basic functionality and rules for data processing, interaction with the database, and determining the logic of business processes. This module is responsible for executing business rules, calculating and processing data, and interacting with other modules to ensure the functionality of the web application. Online applications use business logic to process user requests, validate data, manage sessions, and interact with external services to ensure that they operate correctly and achieve business goals.

The module should also allow the user to generate and download pdf files containing, among other things, consent to the processing of personal data for further storage.

Master data management system is a module designed to store, standardize, manage, and ensure the quality of the most important, stable data (master data) for their efficient and unified use.

Public part - a module designed to display public information without any restrictions on the Internet.

Search subsystem - a module designed to provide efficient and accurate data search for users, including filtering, sorting, and displaying results on the public part of the system.

Analytical data generation subsystem - a module designed to display consolidated information in the form of graphs and tables (including on the public part of the Portal) (measure 2.2.3.1.3. of the State Anti-Corruption Program for 2023-2025).

Subsystem for integration with external systems - designed to integrate with ICS for data exchange or other information systems using APIs.

Registers - the module is designed to enter, process and store information on persons who have accommodated internally displaced persons, housing facilities, information on the amount of compensation for each person-day and the number of person-days of actual residence in the reporting month for the payment of compensation.

4.3 Functional requirements

4.3.1 Requirement for the System role model

A role model should be provided that defines different levels of access to the public or closed part of the System and should include such roles:

Technical administrator of the System - the role allows for the creation, implementation and administration; technical and technological support (except for organizing access to data), hosting, maintenance of the technical complex; creation, modification, implementation and maintenance of software; technical interaction with registries; cybersecurity; other actions specified in the agreement with the System holder (may be additionally introduced if necessary).

System Administrator - the role allows to make changes to the System settings, edit reference tables, change existing processes, and manage users.

User - authorized persons of executive bodies of village, town, city councils, district councils in the city of Kyiv State Administrations, regional military administrations, Kyiv City Military Administration, and the Ministry of Reintegration.

The role allows you to enter and correct data within the relevant business processes.

Guest - an unauthorized person. The role allows you to view information on the public part of the System.

List of main actions in the System	Guest	User	System administrator
View Dashboard/search	Yes	Yes	Yes
Search		Yes	Yes
Registration of a person who accommodates IDPs		Yes	
Registration of IDPs		Yes	
Adding residential premises		Yes	
Accommodation of IDPs		Yes	
View and edit data		Yes	Yes
Edit compensation cards			Yes

Table 1 - Matrix of roles and rights to work with modules

4.3.2 Requirements for the Authentication and Authorization System

Users shall be authenticated in the System by means of a QES using the ID.GOV.UA ICEL.

After authentication, the user should go to their account according to their assigned role.

From the data received from the user from the QES on the executive body of the village, town, city council, district in the city of Kyiv state administration, the relevant military administration, the System shall add a new entry to the reference table of organizations containing:

- the name of the organization;
- EDRPOU code.

Next, the System should create a new user record based on the data from the QES or EDS:

- FULL NAME;
- RNOKPP (Registration number of the taxpayer's account card) or passport series and number (if available).

By default, the system must set the role of Guest.

Documentation on how to connect to the IEIS is available at the following links:

- <https://id.gov.ua/connect>;
- <https://id.gov.ua/downloads/IDInfoProcessingD.pdf>.

The system administrator, after verifying the account, assigns a new role in accordance with the person's authority and the role model of the System.

4.3.2.1 Requirements for the registers subsystem

List of persons who have accommodated IDPs - the system store and display registered persons who have accommodated IDPs.

Each card of the persons who accommodated the IDP must store the following information:

- last name;
- first name;
- patronymic;
- gender (male/female);
- type of document;
- series (if any) and number of the passport of a citizen of Ukraine;
- a unique record number in the Unified State Demographic Register (URNR);
- date of birth (day, month, year);
- the registration number of the taxpayer's account card or a note on the refusal of the RNOKPP;
- actual place of residence;
- contact phone number;
- bank account number to transfer the compensation amount (according to the IBAN standard).

If changes are made to the lists, the System shall store a history of actions containing the date and time, the account that made the change, and the data that was changed.

The user and the System Administrator should be able to go to the card and view or edit the information as needed.

List of residential premises - the system must store and display registered data on residential premises.

Each housing object card must store the following information:

- registration number of the real estate object;
- type of real estate object;
- address (region, settlement, street, house number, apartment number);
- total area;
- living space;
- cadastral number;
- form of ownership;
- the size of the dwelling ownership share;
- condition of housing; accessibility for children;
- accessibility for animals.

If changes are made to the lists, the System shall store a history of actions containing the date and time, the account that made the change, and the data that was changed.

The user and the System Administrator should be able to go to the card and view or edit the information as needed.

List of IDPs - the system should store and display registered temporarily accommodated internally displaced persons.

Each IDP card must store the following information:

- last name;
- first name;

- patronymic;
- gender (male/female);
- type of document (passport/birth certificate);
- series (if any) and number of the passport of a citizen of Ukraine/birth certificate);
- unique record number in the Unified State Demographic Register (if any);
- date of birth (day, month, year);
- the registration number of the taxpayer's account card or a note on the refusal of the RNOKPP;
- registered/declared place of residence of the internally displaced person;
- contact phone number;
- date and number of the IDP certificate and pension certificate, certificate of a person with a disability, status of an unaccompanied child, etc. (if any).

If changes are made to the lists, the System shall store a history of actions containing the date and time, the account that made the change, and the data that was changed.

The user and the System Administrator should be able to go to the card and view or edit the information as needed.

Compensation payments to persons who accommodated IDPs - a system that stores and displays registered data on compensation payments to persons who accommodated internally displaced persons.

Each payment card must store the following information:

- Name of the executive body of the village, settlement city council, district in the city of Kyiv State Administration, the relevant military administration, code according to the EDRPOU;
- Full name (of the homeowner or their representative, tenant, (lessee) of state or municipal property, heirs who have accepted the inheritance);
- gender (male/female);
- address, location of the real estate object where the IDP is located (in the format: region, district, settlement, street, building/apt/etc);
- the registration number of the taxpayer's account card (RNOKPP);
- series (if any) and number of the passport of a citizen of Ukraine;
- a unique record number in the Unified State Demographic Register (URNR);
- bank account number to transfer the compensation amount (according to the IBAN standard);
- contact phone number;
- information about the accommodated IDPs, including:
 - a) FULL NAME OF THE IDP;
 - b) gender (male/female);
 - c) series (if any), number of the passport of a citizen of Ukraine, birth certificate and unique record number in the Unified State Register of Legal Entities, if any);
 - d) date of birth (day, month, year);
 - e) registration number of the taxpayer's account card (if any);
 - f) registered/declared place of residence of the internally displaced person;
 - g) date and number of the IDP certificate and pension certificate, certificate of a person with a disability, status of an unaccompanied child, etc. (if available);
 - h) the IDP's contact phone number;
 - i) information on the number of person-days during which the accommodation was provided;
 - к) The amount of expenses to be reimbursed.

The system administrator should be able to go to any card and view or edit the information as needed.

If changes are made to the lists, the System shall store a history of actions containing the date and time, the account that made the change, and the data that was changed.

Data lists can be downloaded in xlsx format.

4.3.2.2 Requirements for the integration subsystem

The module must ensure compatibility with other electronic

systems/information resources via API. The list of other electronic systems/information resources will be determined upon the respective approval of the Holders of such systems.

The information to be exchanged is specified separately in Data Form No. 4. The description of the interfaces and the integration procedure are described in separate appendices to the terms of reference.

4.3.2.3 Requirements for the search subsystem

The System shall implement a search system for such requirements:

- The system should support pre-configured filters to accurately and quickly limit search results. Filters can be configured to include the following parameters: region, district, street, number of adults to accommodate, number of children to accommodate, number of animals to accommodate.
- The system should be able to customize filters using an interface that provides convenient customization of search parameters.
- The search engine must be able to perform contextual search based on keywords.
- The system should analyze keywords and contextual data entered by the user to find relevant results.
- The search should take into account the semantic relationships between keywords and provide results that are relevant to the context of the query.
- The system must support sorting search results based on various parameters.
- Search results should be conveniently displayed to the user and be able to be further filtered and navigated.
- The search engine should be optimized for fast and efficient search of large amounts of data.
- User requests should be processed promptly, ensuring high system performance.
-

When a user searches for residential premises for accommodation, the system should take into account the living space standards set forth in the Housing Code and not display objects that do not meet the requirements.

4.3.2.4 Requirement for the Public dashboard module

Public Dashboard is an analytical module in the form of indicators, graphs, and tabular representation located on the public part of the System (hereinafter referred to as the Dashboard).

The dashboard shall generate consolidated analytical indicators based on data stored in the System database or data warehouse.

Indicators for the Dashboard should be generated by the System Administrator using the constructor for collecting and building indicators, graphs, or tabular representation. To generate more complex indicators, the System Administrator can use the SQL language to generate queries to the DBMS.

To reduce the load on the performance database, the generated analytical indicators should be cached.

A public dashboard should provide an opportunity to file a complaint about living conditions in residential premises. The request can be made after authentication with ID.GOV.UA.

4.3.2.5 Requirement to the subsystem Logic of registers formation and performing tasks related to registers processing

The System shall include a relational DBMS for data storage and processing.

Business process systems shall be used to receive and store data in the System.

The subsystem of logic for forming registers and performing tasks related to register processing must meet the following requirements:

- The System Administrator should be able to customize and control the process for each data source;
- The system should display the start, execution time and execution status of Business Processes;
- The System shall notify the System Administrator if the Business Process fails;
- The system should support changes in business processes.
-

The system should perform the following mathematical operations and store the results to the Register of Compensation to Persons Who Accommodated IDPs:

The formula performs the operation of multiplying the number of person-days (N) by the amount of monetary compensation per person-day (C) to obtain the Amount of expenses to be compensated (O). Thus, the result of this mathematical expression will be the required amount of spending that the system can use for further processing or recording.

$$N \times C = O$$

The System administrator should be able to change the amount of monetary compensation per person-day (C) through the Tariff reference table, the data from which can be uploaded for comparison and analysis of indicators by user.

In the event of changes, the System shall store a history of actions containing the date and time, the account that made the change, and the data that was changed.

4.3.3 The process of registration of a person hosting an IDP

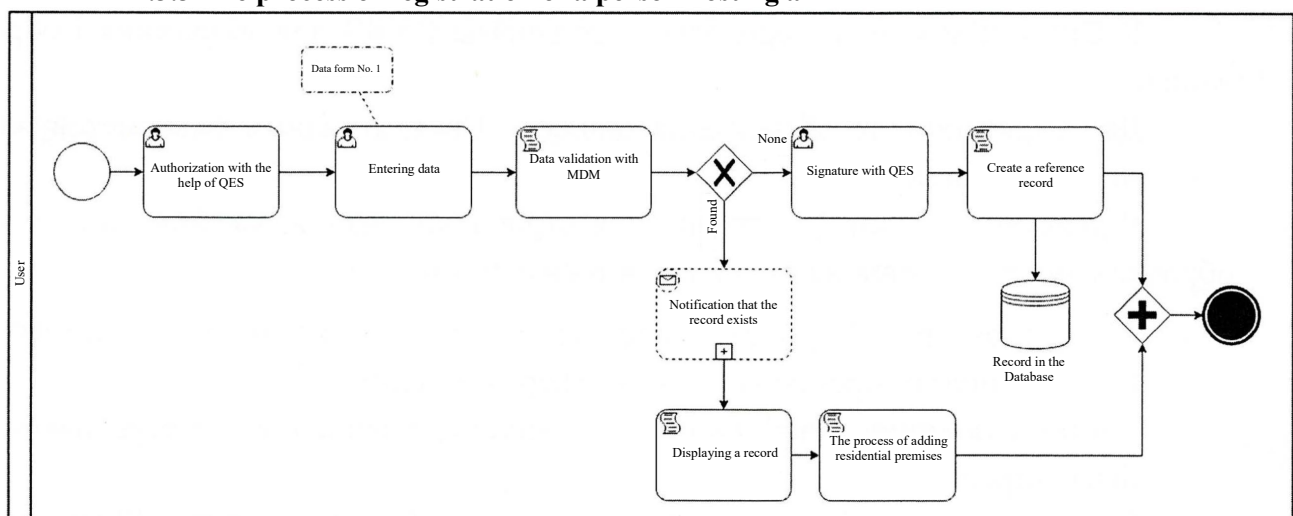


Figure. 2 Description of the registration process of the IDP host (Annex Registration process of

the IDP host)

1. The user logs in to the system using a QES.
 - 1.1. Opens the registration section of the person who accommodated the IDP and fills in all the necessary data and pushes the registration button.
 - 1.2. The system checks the data entered by the user to identify matches with existing records using MDM.
2. If the system finds a match and such a person is already registered, the system notifies the user that such a record already exists and displays its data.
 - 2.1. The user can view the record, edit it, proceed to the process of adding residential premises, or complete the work without changes.
3. If the system does not find a match, the user must confirm the creation of a new record by signing the entered data with QES.
 - 3.1. The system creates a new reference record and writes it to the database in the appropriate list.

4.3.4 IDP Registration Process

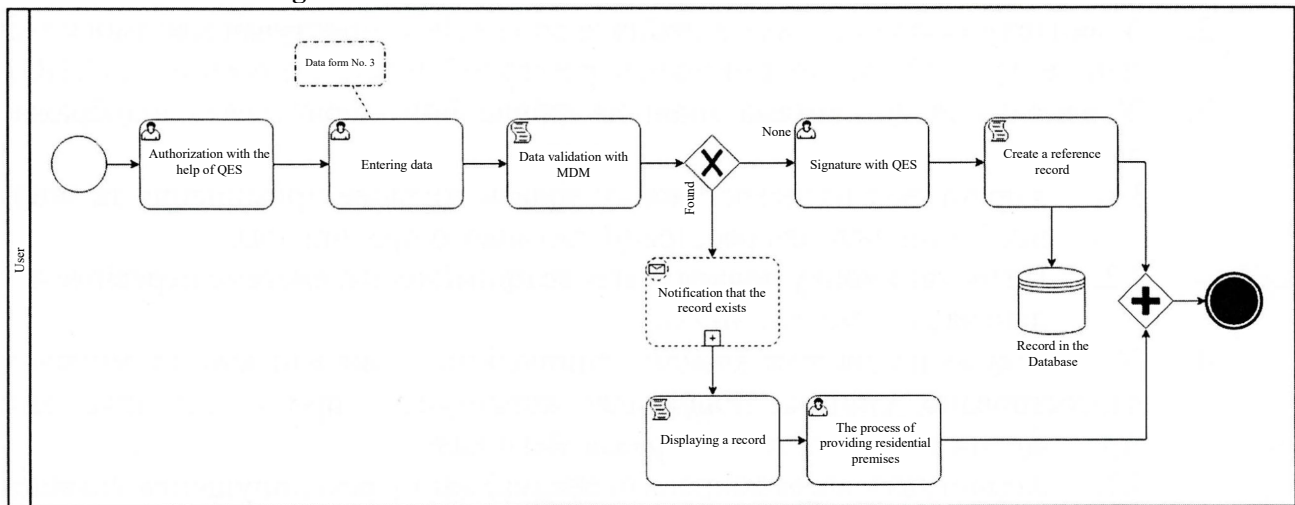


Fig. 3 Description of the IDP registration process (Annex IDP registration process)

1. The user logs in to the system using a QES.
 - 1.1. Opens the IDP registration section and fills in all the necessary data and clicks the registration button.
 - 1.2. The system checks the data entered by the user to identify matches with existing records using MDM.
2. If the system finds a match and such a person is already registered, the system notifies the user that such a record already exists and displays its data.
 - 2.1. The user can view the record, edit it, proceed to the process of granting a housing object, or complete the work without changes.
3. If the system does not find a match, the user must confirm the creation of a new record by signing the entered data with QES.
 - 3.1. The system creates a new reference record and writes it to the database in the appropriate list.

4.3.5 The process of adding residential premises

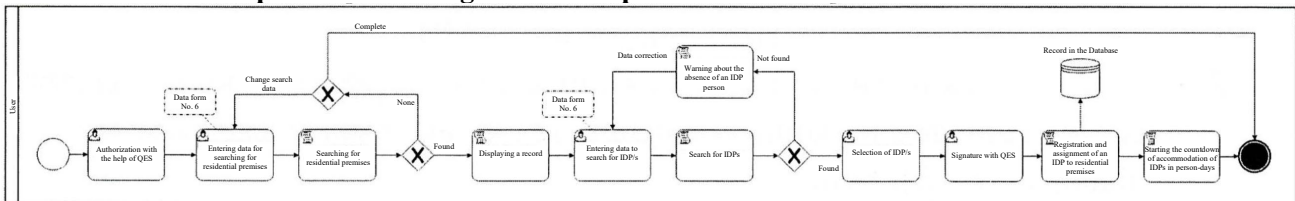


Figure. 4 Description of the process of adding residential premises (Appendix Process of adding residential premises)

1. The user logs in to the system using a QES.

- 1.1. Opens the search section of the person who placed the IDP and fills in all the necessary data and pushes the search button.
- 1.2. The system checks the data entered by the user to identify matches with existing records using MDM.
2. If the system does not find a match, the user can change the search data or start the registration process of the person who hosted the IDP.
3. If the system finds a match, the user is shown the record.
 - 3.1. The user clicks on the add a housing button and fills in the necessary data to register residential premises.
 - 3.2. The user clicks the add residential premises, and the system checks the entered data using MDM.
4. If the system finds a match and such a dwelling is already registered, the system notifies the user that such residential premises already exist and displays its data.
 - 4.1. The user can correct the entered data in case of errors or complete the process.
5. If the system does not find a match, the user must confirm the creation of a new record by signing the entered data with QES.
 - 5.1. The system creates a new reference record, links the residential premises to the homeowner, and records it in the database in the appropriate list.

4.3.6 The process of allocation of residential premises

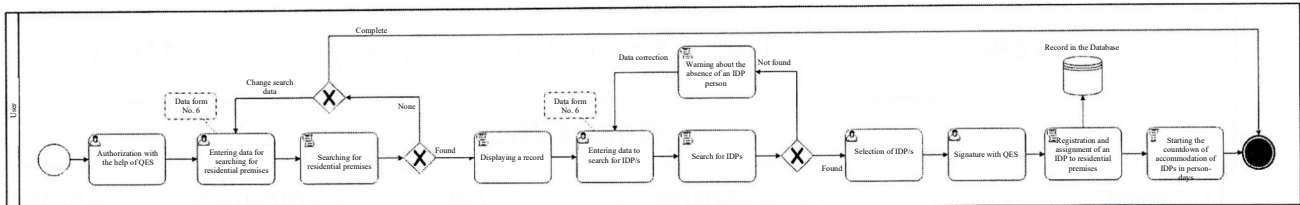


Fig. 5 Description of the process of allocation of residential premises (Appendix Allocation of residential premises)

1. The user logs in to the system using a QES.
 - 1.1. Opens the housing search section and fills in all the necessary data and clicks the search button.
 - 1.2. The system checks the data entered by the user to identify matches with existing records.
2. If the system does not find a match, the user can correct the search data or terminate the process.
3. If the system finds a match, the user is shown the records in which the match is found.
 - 3.1. The user can view the residential premises and select the desired one.
 - 3.2. The user presses the button to place a person, after which the system should display a form for searching for IDPs.
 - 3.3. The user enters the necessary data for the search.
4. If the system does not find a match, the user can correct the search data or terminate the process.
5. If the system finds a match, the user is shown the corresponding record.
 - 5.1. The user selects a person or several IDPs and clicks the place button.
 - 5.2. The user must confirm his action by signing the entered data with QES.
6. If the selected person is already assigned to residential premises, the system should notify the user and prevent the IDP from registering for another residential premise.
7. In case an IDP is not assigned to any residential premises.
 - 7.1. The system registers and links IDPs to residential premises.
 - 7.2. After that, the time of placing an IDP in residential premises in person-days is counted for the purpose of calculating compensation to the person who accommodated the IDP.

4.4 Requirements for data structures of process forms

Form

Field	Data type	Edit	Description
Form No. 1			
Last Name	string	Yes	Filled in by the user according to the application
Name	string	Yes	Filled in by the user according to the application
Middle name	string	Yes	Filled in by the user according to the application
Document type	Radio button	No	• Passport • GO-Passport
Series	string	Yes	Filled in by the user according to the application
Passport number	string	Yes	Filled in by the user according to the application
RNOKPP	string	Yes	Filled in by the user according to the application
URNR	string	Yes	Filled in by the user according to the application
IBAN	string	Yes	Filled in by the user according to the application
Form No. 2			
Registration number of the real estate object	string	Yes	Filled in by the user according to the application
Type of real estate object	Reference table	No	• Apartment • Private house • Your own version
Address	Reference table	No	Address reference table with the ability to add addresses if you don't have the necessary one.

Field	Data type	Edit	Description
Total area	string	Yes	Filled in by the user according to the application
Living space	string	Yes	Filled in by the user according to the application
Cadastral number	string	Yes	Filled in by the user according to the application
Form of ownership	string	Yes	Filled in by the user according to the application
The size of the dwelling ownership share	string	Yes	Filled in by the user according to the application
Housing condition	string	Yes	Filled in by the user according to the application
Accessibility for children	checkbox	No	The user checks the box
Accessibility for animals	checkbox	No	The user checks the box
Form No. 3			
Last Name	string	Yes	Filled in by the user according to the application
Name	string	Yes	Filled in by the user according to the application
Middle name	string	Yes	Filled in by the user according to the application
Document type	Radio button	No	• Passport • GO-Passport
Series	string	Yes	Filled in by the user according to the application
Passport number	string	Yes	Filled in by the user according to the application
RNOKPP	string	Yes	Filled in by the user according to the application

Field	Data type	Edit	Description
URNR	string	Yes	Filled in by the user according to the application
Contact phone number	string	Yes	Filled in by the user according to the application
IDP certificate number	string	Yes	Filled in by the user according to the application
Date of issue of the certificate	string	Yes	Filled in by the user according to the application
Form No. 4			
FULL NAME (IDP)	Reference table	No	Filled field with data from the Registers
Contact phone number	Reference table	No	Filled field with data from the Registers
RNOKPP	Reference table	No	Filled field with data from the Registers
Passport data	Reference table	No	Filled field with data from the Registers
URNR	Reference table	No	Filled field with data from the Registers
IB AN	Reference table	No	Filled field with data from the Registers
Information on the number of IDPs	Reference table	No	Filled field with data from the Registers
Information on the number of person-days during which the accommodation was provided	Reference table	No	Filled field with data from the Registers
Amount of expenses to be reimbursed	Reference table	No	Filled field with data from the Registers
Form No. 5			
Preferred locations	Reference table	Yes	Select from the address book

Field	Data type	Edit	Description
Number of adults	string	Yes	Filled in by the user according to the application
Adult gender	Reference table	Yes	• Female • Male
Number of children	string	Yes	Filled in by the user according to the application
Gender of children	Reference table	Yes	• Female • Male
Number of animals	string	Yes	Filled in by the user according to the application
Desired object type	Reference table	Yes	• Apartment • Private house
Form No. 6			
FULL NAME	string	No	Filled in by the user in accordance with the document
RNOKPP	string	No	Filled in by the user in accordance with the document
Passport data	string	No	Filled in by the user in accordance with the document

Table 2 - data structures

4.5 User interface requirements

The System interface shall be simple, convenient, logically consistent and understandable for the user. Information entry forms should have hints on whether fields are required and how to fill them in.

Information entry forms should reduce the likelihood of user errors when working with the System.

When entering information, the correctness of the data should be checked using input masks (number of characters, absence of invalid characters, extra spaces, etc.) and logical conditions.

The System interface shall be adapted for use by visually impaired persons in accordance with international recommendations (DSTU EN 301 549:2022 (EN 301 549 V3.2.1 (2021-03), IDT) "Information Technology. Requirements for Accessibility of ICT Products and Services").

The System interface should be adapted for use on mobile devices.

4.6 System reliability requirements

The System architecture must provide fault-tolerant operation in 24x7x365 mode and guarantee the availability of at least 5000 simultaneous users.

If users are unable to access the System's functionality for technical reasons related to System failures or errors, the System shall be deemed unavailable.

The system should provide means of saving data in case of failures and the ability to restore it from a backup copy.

The maximum recovery time of the System shall be 12 hours.

The failed parts of the software are restored from a working version from the archive.

4.7 Requirements for information integrity and disaster recovery

It should be possible to create backup copies of information and restore it using these copies.

Backup and restoration of information (archive copy functionality) should be provided, which should work automatically in accordance with the regulations (incremental backup and full backup).

Full backup - once a week:

A full backup should be performed at least once a week.

It includes absolutely all the data and system files needed to restore the system in full.

This backup provides a complete copy of the data at a specific moment and is used to restore 100% of it immediately in case of data loss or system failure.

Incremental backup - every day:

Daily incremental backups should be performed every day except the day of a full backup.

Includes only the changed parts of the data since the last backup, which significantly reduces the amount of storage space used and the backup time.

These backups are used to ensure fast and efficient recovery of data lost during the last day.

The data storage period is 2 weeks:

All backups should be stored for two weeks.

After this period, old backups can be automatically deleted to optimize storage space utilization and keep only the most current data.

This period ensures that data can be recovered as of any time within the last two weeks.

Automation and Monitoring:

All backup processes should be fully automated to avoid errors and ensure regularity.

The monitoring system should track the success and time of each backup and report any problems or failures.

The centralized management of the process of creating backups and restoring information should ensure that backups are transferred to the backup data center at the intervals specified in the relevant regulations.

4.8 Information security requirements

In the field of security, the system must comply with DSTU 3396.0-96, DSTU 3396.1-96, DSTU 3396.2-97.

The System shall provide modern security and data protection tools, including data protection against unauthorized access, role-based access to data and access control to the physical computing infrastructure used by the System, including database servers.

The system shall guarantee data integrity, accountability and availability of data, as well as prevent unauthorized changes to the System's data, their damage and unauthorized access to them.

The administrative part of the System should allow setting up arbitrary sets of roles, taking into account restrictions on access to information, including restrictions on access to read, write, modify and delete data, both to individual database records and individual fields.

Only authorized users shall have access to the administrative part of the System.

Access to transactional data in the System database should be provided through the use of pre-configured roles.

To control database security, authentication and access, when logging in directly to the database, the System must provide the ability for the System administrator to enter a unique name and password.

The system shall not contain in the source code hard-coded accounts that can be used to log in to the database or the System.

When working with the web interface, the System shall support data encryption between the client and the server, using the TLS or SSL cryptographic protocol.

It should be possible to create an IISS with subsequent confirmation of its compliance with the requirements of regulatory documents on technical information protection.

The terms of reference for the creation of an IIS is developed separately, in accordance with the requirements of ND TZI 3.7-001-99 "Methodical instructions for developing terms of reference for the creation of an integrated information security system in an automated system".

IIPS shall be installed within a period not later than one (1) year after the system is put into trial operation.

4.9 Requirements for storage of personal data and confidential information

The processing of personal data of individuals, as well as their transfer, is carried out in accordance with the legislation on personal data protection.

4.10 Documentation requirements

The documentation to be developed is provided in Ukrainian in two sets in paper and electronic form.

Technical documentation should be developed in accordance with applicable state standards and using terminology compliant with industry standards.

The documentation for the System shall include:

- General description of the solution;
- General instructions for installing and configuring the System;
- Instructions for deploying, backing up and restoring the System;
- User manual(s) (for each role separately);
- Instructions of the System Administrator;
- Preliminary test methodology;
- Preliminary test report;
- Test program and methodology;
- Final test report.

4.11 Requirements for the scope of property rights to the application software to be transferred to the Customer/Lead Beneficiary

The property rights to the application software must be transferred to the Lead beneficiary of the SE "Reintegration and Restoration" in full.

The developer shall transfer free of charge and irrevocably all intellectual property rights (including exclusive rights) to the software or parts thereof created on the order of the Ministry of Reintegration from the developer to the Customer/Lead Beneficiary.

All intellectual property rights to the Software or parts thereof acquired by the Customer/Lead Beneficiary shall relate only to the Software or parts thereof specifically created within the scope of the Technical Requirements and the Terms of Reference.

As a result of the transfer of property rights (including exclusive rights), the Developer loses any property rights, and the Customer/Lead Beneficiary acquires the right:

use the Software and its materials in all ways provided for by the current legislation of Ukraine;

allow third parties to use the Software and its materials in ways provided for by the current legislation of Ukraine;

allow third parties to use the Software and its materials, including prohibiting such use; - transfer (alienate) all or part of the rights to the Software and its materials to third parties;

translate, adapt or otherwise modify the Software, i.e. make changes that are carried out in order to ensure its functioning;

- modify (alter) the Software, i.e. make any changes that are not adaptations;
- other intellectual property rights established by law.

The Customer/Lead Beneficiary acquires intellectual property rights for the Software in accordance with the requirements of the current legislation of Ukraine.

Intellectual property rights to software extend throughout the world without restriction.

At the time of transfer of intellectual property rights to the Customer/Lead Beneficiary, the Developer guarantees that: only it owns exclusive intellectual property rights to the Software, intellectual property rights to the Software in whole or in part have not been transferred (alienated) to third parties; intellectual property rights to the Software in whole or in part are not subject to pledge, litigation or claims by third parties.

The transfer by the Developer of intellectual property rights (including exclusive rights) to the software and its materials to the Customer/Lead Beneficiary shall be free of charge.

4.12 Development and modernization requirements

The Contractor shall provide a guaranteed period of technical support for the System, which shall be not less than 1 year from the date of signing the act of job completion.

The System components must be able to be modernized and continued operation after the expiration of the guaranteed technical support for a period of at least 3 years at the request of the Customer (Ministry of Reintegration of the Temporarily Occupied Territories of Ukraine).

Further development is determined by the Customer (Ministry of Reintegration of the Temporarily Occupied Territories of Ukraine).

4.13 Requirements for types of support

4.13.1 Requirements for information support

The system should have the properties of an integrated information environment:

- ensure data storage in a form that allows organizing work with the System for many users, as well as automatic recovery in case of emergency;
- ensure the distribution and granting of access rights based on the role principle;
- provide a mode of operation for many users simultaneously;
- ensure automated recording of all actions of any users (including those with registration information and registration data);
- ensure automatic data consolidation and information integrity;
- provide for the possibility of integration with other information systems through a documented API;
- Ensure that the SW is adapted to the Customer's requirements.

4.13.2 Requirements to the application software

The Contractor shall ensure cross-browser compatibility for modern versions of Safari, Mozilla Firefox, Chrome and higher (and two previous versions officially supported by the vendor), as well as on standard browsers of mobile operating systems Android, Windows Phone and iOS.

JavaScript support must be enabled in your web browser.

4.13.3 Requirements for technical support

The hardware should be built on the basis of a cluster architecture with hardware characteristics not exceeding:

- processor at least 2 GHz, 16 cores;
- at least 32 GB of RAM with no more than 5 thousand unique visitors per day;
- hard disk with a capacity of at least 1 TB;
- guaranteed power supply to the server;
- dedicated IP address for the server.

It is possible to use a virtual server with guaranteed allocation of the above hardware resources. The operating system of the server part must be based on the Linux operating system.

4.13.4 Data storage requirement

All operational data of the System shall be stored in a structured form under the control of the PostgreSQL 15 relational DBMS.

If it becomes necessary to provide the user with data intended for viewing (images, videos, documents, etc.), such files are stored in the server's file system or in a separate storage, and links to them are placed in the database.

4.13.5 Requirements for language support

The system must display the user interface and information on it in the official (Ukrainian) language.

4.13.6 Requirements for protection against erroneous actions of System users

The System's interface shall be user-friendly and provide an opportunity to correct erroneous actions by confirming the action or by refusing the action.

Also, when an error is detected, the System should indicate the error to the user, with a hint on the expected result of the System upon request.

4.13.7 Requirements for legal support

Personal data, which is confidential information about individuals contained in the System, is processed in compliance with the requirements of the Constitution of Ukraine, the Laws of Ukraine "On Personal Data Protection", "On Information" and other laws.

The authorized persons of the executive body of the village, settlement, city, district council (if established), local state administration, relevant military administration shall verify the accuracy of the information provided **in the** application on the actual location of internally displaced persons by visiting the places of accommodation of internally displaced persons, in particular, to verify the fact of accommodation of such persons, identification of persons by presenting their passport of a citizen of Ukraine, birth certificate of a minor child, permanent residence permit (including electronic display of information contained in such documents), certificate of registration of an internally displaced person or an electronic certificate confirming the fact of internal displacement and registration of such a person, verification of the fact of free accommodation of such persons, the number of accommodated persons and their living conditions.

The inspection is carried out by the decision of the executive bodies of the village, town, city, district council (if established), local state administrations, and relevant military administrations selectively to establish the facts of compliance with the data specified above.

Based on the results of such an inspection, authorized representatives of the executive body of a village, town, city, city district council (if established), local state administration, or relevant military administration draw up an inspection report in any form.

The inspection report can be uploaded to the System.

Upon detection of an offense, a decision is made to refuse to provide compensation to the person who sheltered the IDP.

4.13.8 Requirements for programming languages and frameworks

The HTML5 markup language and cascading style sheets (CSS) should be used to implement the client side of the website.

JavaScript should be used to implement interactive elements of the client side.

When developing the client side, you can use the Vue or ReactJS framework.

The server side of the site should be written in a high-level language using frameworks.

5. COMPOSITION AND CONTENT OF THE SYSTEM DEVELOPMENT WORK

5.1 Composition and content of the system development work

The composition and content of the work on the preparation of the automation object for commissioning of the System shall comply with the requirements of GOST 34.601-89 for the commissioning the System.

The System is being developed in accordance with the schedule of work by stages.

Table 3

Stage number	Description of the stage	Duration, days
1.	Collection, analysis and discussion of information from the Customer required for the project implementation (discussion of processes, data sources and other information)	20
2.	System design and development stage	
2.1	Designing the system architecture	7
2.2	Designing the database structure	7
2.3	System design development	10
3.	System development stage	
3.1	Layout of System interfaces	10
3.2	Technical implementation of the System, programming	50
3.3	System testing	15

4.	Putting the System into commercial operation (by the Developer)	
4.1	Deployment of the System at the Customer's site	2
4.2	Populating reference tables and migrating existing data	15
4.3	Training of System Administrators and Users no more than (25 representatives) with the provision of video materials	1
4.4	Conducting acceptance tests of the System	3
5.	Transfer of the System to the Customer	1
Total days:		141

The total project implementation period is 115 days.

5.2 Requirements for the composition and content of work on the preparation of the automation object for commissioning

Measures to put the System's software tools into operation include the following works:

- installation of SW on the Customer's side;
- setting up the equipment used;
- initial configuration and filling in the System data (user reference tables);
- training of the Customer's users on how to work with the relevant functionality throughout the entire period of operation.

5.3 Measures for technical support of the System

The Contractor shall provide technical support including:

- A direct telephone line for consultation with the System's technical support specialists.
- Consultations by phone, fax, e-mail on the operation of the System's application software.
- Obtaining technical information and/or additional software components (patches) to overcome and resolve problems and errors detected in the System's software components.
- During the warranty period of support, the Contractor shall provide free services to overcome and resolve problems and errors detected in the software components of the System.
- Receipt of new versions, releases and editions of the System's application software as part of the license service.
- Providing initial diagnostics of malfunctions, restoring the functionality of the supported application software with the Contractor's specialist's visit.

6. PROCEDURE FOR CONTROL AND ACCEPTANCE OF THE SYSTEM

6.1 General requirements for acceptance of work

Acceptance of the System shall be carried out by the acceptance commission, which shall include representatives of the Customer and the Contractor.

The decision on the establishment and composition of commissions is made by the Customer. The results of the commission's work shall be documented in an act signed by the commission members and approved by the Customer.

In the event of deficiencies in the System's operation, the Commission shall draw up an act and agree with the Contractor on the timeframe for eliminating the deficiencies

6.2 Types, composition, scope and methods of testing of the System

Acceptance and delivery of the completed work shall be carried out upon presentation by the Contractor of the relevant sets of documents and shall be completed by execution of the acceptance certificate signed by the parties.

The System shall be tested by the Contractor.