TERMS OF REFERENCE

for Procurement of Software Development Services

Community Budget Revenue Management at the Chernivtsi City Council

Chernivtsi

2023

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1. LIST OF ABBREVIATIONS

Term	Meaning
ToR	Terms of Reference
User authorization based on a unique registration number of the certificate of the user's public key	Validation of the user's public key based on the public key certificate and granting of the relevant user privileges in the System
DB	Database
Directory element	Any value in the System directory
IDSS	Integrated data security system
SW	Software
DBMS	Database management system
Terminal access	Access by the System user via the RDP protocol

2. REGULATORY COMPLIANCE

The regulatory and legislative framework governing the deployment of Software at Chernivtsi City Council comprises:

- The Law of Ukraine *On Information*
- The Law of Ukraine *On Electronic Documents and Electronic Document Management*
- The Law of Ukraine *On Access to Public Information*
- The Law of Ukraine *On the Protection of Personal Data*
- The Law of Ukraine *On the Fundamentals of Preventing and Countering Corruption*
- The Law of Ukraine *On Community Property*
- The Land Code of Ukraine
- The Resolution of the Cabinet of Ministers of Ukraine *On Approval of Model Rules for Outdoor Advertising*
- The Regulations on the Center for Regulation of Outdoor Advertising and Temporary Installations at the Urban Development and Architecture Department of the Chernivtsi City Council
- The Regulations on the Community Property Department of the Chernivtsi City Council
- The Regulations on the Lease Office at the Urban Development and Architecture Department of the Chernivtsi City Council

3. PURPOSE AND OBJECTIVES OF SOFTWARE

3.1. General information about the initiative

The EU Anti-Corruption Initiative (EUACI) is a comprehensive EU anti-corruption program in Ukraine, funded by the EU and Denmark and implemented by the Ministry of Foreign Affairs of Denmark. The program helps to combat corruption in Ukraine at the national and local levels by empowering citizens, civil society, and businesses, and bolstering the capacity of state institutions and local governments.

The EUACI was launched in 2017 and has since earned a reputation for being a flagship EU program. A new 4-year phase with a budget of EUR 22.9 million began in May 2020, and the EUACI became a decentralized division of the Ministry of Foreign Affairs of Denmark. EUACI plays a key role in ensuring the sustainable institutional development of anti-corruption institutions. Assistance provided to civil society organizations and investigative journalists empowers them and facilitates their essential role in fighting corruption.

In five cities (Zhytomyr, Mariupol, Nikopol, Chervonohrad, and Chernivtsi), the EUACI works with mayors and city councils, as well as civil society to strengthen transparency, accountability, and integrity.

The partnership with the cities continues in the current second phase, focusing on the ongoing development of the various integrity tools launched during Phase I and the implementation of new tools agreed upon for implementation during the current Phase II.

3.2. General project information

The purpose of the Project is to create a Product that allows combining city budget revenue streams into a single database consisting of leases of advertising installations, land, and community property. This will contribute to end-to-end transparency of revenue streams and make it possible to plan ahead the city council budget revenue and spending.

Main objectives of the Project:

- Optimize the lease accounting process

- Systematize and keep an accounting of sources of revenue from the use of community properties

- Optimize and systematize the sources of revenue from the use of community-owned land

- Optimize and systematize the accounting of revenue from the use of advertising installations

- Organize the process of accumulation and systematization of data and prioritization of requests from individuals or legal entities

- Develop the "Analysis of Revenue Streams" report (planned vs. actual revenue with deviations)

- Build detailed visualizations of budget revenue along three revenue streams for external users in the public segment of the system

The **Product** is a database for information about tenants with the capability of real-time tracking of payments and issuance of the relevant documents.

The Terms of Reference detail the technical and qualitative parameters of the target of procurement, the list of services involving subsequent Product development and deployment, and the relevant timeframes. The requirements in this document are not exhaustive and may be updated or modified by the the Contractor while the Terms of Reference are being developed.

General requirements with respect to the Product are as follows:

- Versatile

- Functionally sufficient (complete)

- Reliable (automatic backup of all data and correct shutdown of applications without data loss)

- Modernizable and scalable

- Modular

- Intuitive user interface

- Protected against external interference

- Logging of all actions of system users

3.3. Role of the EUACI initiative in the project

- Project funding

- Organizing and conducting the procurement of services involving Project implementation

- Consulting support for participants of the competitive bidding process in matters of participation and procurement requirements

- Interacting with the winning bidder

- Facilitating the organization of meetings after the signing of the contract with the chosen Contractor
- Technical supervision of Project implementation
- Involvement in the testing and acceptance of all Project phases

4. TARGET AUDIENCE

Target audience: internal users (users at specific departments of the city council), external users (community residents, other stakeholders).

5. OVERALL SCOPE OF THE CONTRACTOR'S WORK

The work of the contractor will be divided into Project implementation phases.

Phase 1: Collecting the requirements and analyzing the business processes:
- Conducting studies, including but not limited to the analysis of existing registries and requirements with respect to the connection to third-party APIs
- Developing user interface prototypes
- Preparing a clear Project implementation plan
- Writing the Terms of Reference and coordinating them with the Project participants

Phase 2: Product implementation according to the Terms of Reference:

- Design layout

- Development of the core

- Functional testing by the Contractor

- Product publication on the Contractor's server

- Product testing by the Client

- Product reworking according to the Client's suggestions

- Load testing

- Final Product testing by the Client and the local government agency according to Appendix No. 1 to these Terms of Reference

- Development of the "Product User Manual"

- Handover of the Product source code and all documentation to the Client

Phase 3: Presentation and warranty support:

- Product presentation to the Chernivtsi City Council and the EUACI

- Start of the Product warranty support term

- Training of city council officials

6. FUNCTIONS

The product should be developed on a modular basis, i.e. the system consists of separate modules, each of which implements a certain set of functions that are unique to it.

6.1. Product design

- The design layout should meet the following requirements:
    - The layout of all core elements, directories, documents, and reports has been finalized.
    - The design is adaptive, making it possible to run the product on mobile devices.
    - The product interface should meet modern requirements (user-friendly appearance and selection of commands, etc.).
    - Prompt signals should alert users to errors or erroneous actions, prompting them what to do next.
    - Interface elements such as buttons and links should have names that clearly convey their intended actions to the user, reducing ambiguity.

6.2. Basic contents and settings

    - Convenient template system
    - Logging and audit
    - Support of email and SMS texting
- Authentication. User registration and login using a login name and password
- Encryption. Application of qualified electronic signatures to all kinds of information entities (electronic application, pdf, xml, etc.) Compatibility with certified libraries of the Ukraine Key Certification Center via the Flydoc module
- Notification (ready interfaces for sending messages via e-mail and Telegram bots)

- Reporting (ready reports that can be exported to pdf or xlsx formats)

- Statistics and data accumulation module

- Public data display module

- Core architecture of the database

6.3. Module "Calculation of lease payments accrued for advertising installations"

This modules allows maintaining a record of all leased advertising spaces with automatic calculation and categorization of rent payments. Notably:

- A record of advertising installations is maintained on a per-site basis and factors in a lease fee reduction coefficient of 1.5 when the installation uses electric lighting.

- A total tally of payments is maintained for each contract with contracting parties with a breakdown by type of advertising installation.

- The system should apply a zero fee when public service advertisements are published (based on the relevant document uploaded into the system).

The work will involve:

- Importing data on advertising installations from an Excel file

- Developing the module for payment imports from the Client Treasury hardware and software complex

- Generating reports on fee accruals, zero fees, payments made and balances at the start and end of each month in a monthly breakdown.

- Generating reconciliation reports

- Developing a penalty accrual system

- Developing documents and hardcopy forms "Warning", "Claim", "Contract", "Supplemental Agreement"
- Developing a module that will send SMS and email messages to contracting parties with past-due payments with links to Claims

6.4. Module "Calculation of lease payments for hardscape elements"

The module will make it possible to maintain a database of all contracting parties that signed a lease for hardscape elements, reflecting the fees accrued and paid, taking into account the city zones and lease expiration dates.

This work involves:

- Developing a directory and importing data on hardscape elements.
- Creating the "Agreement (Lease)" document with a selection of different types of agreements and different particulars of hardscape elements, as well as importing data from Excel.
- Developing the hardcopy version of agreements for a "Summer Retail Point of Sale", "Temporary Mobile Installation (Auction)", "Temporary Installation".
- Generating reports on contracting parties and hardscape elements, city zones, and lease expiration dates.

6.5. Module "Calculation of planned vs. actual revenue"

This module will allow generating planned vs. actual reports on the achievement of budget targets with a monthly breakdown and revenue codes, taking into account:

- Automatic population of the "planned revenue" field from lease agreements

- Development of a planned vs. actual report for streams that are not reflected in the database (voluntary donations, compensation of damages)

- Development of the "Analysis of Revenue Streams" report (planned vs. actual revenue with deviations)

- The module will not support integration with the LOGIKA information analysis system.

6.6. Module "Registration of land plots at the Urban Development and Architecture Department"

This module will make it possible to maintain a record of land plots that have been leased out with the ability to keep track of changes using the "Vkursi Zemli" resource and monitor rent payments by importing data from the State Tax Service. The development scope also includes:

- Importing data on contracting parties and land plots

- Importing and reconciling data with the Vkursi Zemli resource (verification of registration in the State Register of Real Rights to Immovable Property and verification of NGOs)

- Storage of scanned documents

- Development of reports: "Expiration of Leases", "Report on Planned Revenue", "Report on New Tenants for the State Tax Service".

- Development of documents and hardcopy forms "Contract", "Appendix No. 1", and "Appendix No. 2", or a new appendix to the contract (lease) in the event of indexation.

- Development of a email messaging module and adaptation of the module that sends SMS texts to contracting parties with past-due payments along with links to Claims, a report on the assessment of the one-time fee for land rent.

6.7. Module "Calculation of property lease fees at the Community Property Office"

This module will make it possible to maintain a record of leased community property in a breakdown by "Leased Property", "Tenant", "Entity Reflecting the Property on its Balance Sheet", with the following documents to be developed:

- Separation and combination of leased properties (vacant properties only without any agreements or termination of a previous agreement and creation of a new one).
- Lease fee accruals based on data from the agreement (generation of the "Certificate of Services Provided").
- Indexation of monthly lease fees (one for all tenants).
- Daily calculation of penalties for all tenants.
- Development of imports from the Client Treasury hardware and software complex (penalties, leases, land, community property should be reflected separately).
- Offsetting of lease fees through reimbursement for the cost of renovations and court-ordered penalty write-offs.
- Development of the hardcopy forms "Warning" and "Claim" for the leases and documents of court decisions.
- Land tax accruals.

The system should have a mechanism for automatic generation of documents reflecting the accrual of utility fees and a Module that will automatically generate documents and send them via email or SMS texts to contracting parties with past-due payments along with links to Claims.

The system should import data on immovable properties and export tax invoices into an XML file based on certificates of services provided.

The system will also support reports with the use of qualified electronic signatures based on Flydoc, which will include:

- Generating reconciliation certificates and reports on utility bill payments.
- Developing a module that will apply the qualified electronic signature based on Flydoc.
- Developing a mechanism for storing electronic documents with qualified electronic signatures and emailing them.
- Developing document templates (agreement - 3 templates, certificates of services provided, invoice, reconciliation report, claim, summary of utility services, land tax report + advertising contract, land lease agreement, contract for hardscape elements).
- Development and storage of scanned documents.

The system must include a mechanism for calculation of utility fees (natural gas, lighting, water supply, heat supply, rent, with tariffs and meter readings) as well as a mechanism for receiving meter readings through a Telegram bot.

6.8. The public data display module allows accessing data through an API and downloading data.

The list of data to be displayed indicated in this document are not exhaustive and may be updated or modified by the the Contractor while the Terms of Reference are being developed.

The public end of the product must display information with a focus on three aspects: Rent of advertising installations, rent of land plots occupied by hardscape elements, rent of land, rent of community-owned property.

- Leases of advertising installations
- List of advertising installations
- List of contracts
- Information about tenants
- Revenue from leases of advertising installations
- Leases of land plots occupied by hardscape elements:
- List of land plots
- Lease revenue
- Leases of land plots:
- List of land plots that have been leased out
- List of contracts
- Lease revenue
- Leases of community-owned property:
- List of leased community-owned properties
- List of contracts
- Lease revenue
- Information about offsetting of lease fees through reimbursement for the cost of renovations and court-ordered penalty write-offs

7. RELIABILITY AND FAULT TOLERANCE REQUIREMENTS

The system must be protected from physical equipment failures by means of logical data redundancy. To protect against errors in the system software and application software, a backup system must be created to quickly restore working software configurations from backups.

The maximum system recovery time is no more than 2 business days.

Backups should be performed at intervals that ensure complete data retention and recovery. The time required to restore the system, taking into account technical delays and performance monitoring operations, should be minimal to ensure continuous operation and not exceed one day.

Data backup must be ensured in cases of:

- Power outages

- Failures of data processing hardware

- Software errors, failures or destruction

7.1. System capacity requirements

The capacity of the system should be calculated for a specific number of workstations depending on the number of licenses (at least 20) and the hardware on which the database runs.

7.2. User interface requirements

End users will access the system via the system interface. For each of the user groups, a separate account interface should be developed and adapted to the corresponding maximum selection of functions. The system must ensure the

versatility of interfaces for different functionalities and make room for subsequent expansion of the list of functions available to users.

7.3. Requirements with respect to data protection against unauthorized access and information security

The system must meet the requirements of regulations on the protection of information and must be protected against the most common types of attacks. The list of common attacks will be agreed upon with the Contractor at the stage of design and ToR approval.

Each instance of system access must be reflected in the access log. Each instance of data modification by the operator must be reflected in the log that must provide the following information:

● the operator who performed the operation

● the specific operation that was performed (new data input, editing of existing data,

removal of data)

● date and time of the operation

The access log and the operator activity log should be accessible to the system administrator and the information security department.

The system may be used by users within the scope of their privileges granted by the administrator in accordance with the approved regulatory documents and guidelines.

7.4. Patent clearance requirements

The software to be used in the creation of the system must have the appropriate license certificates or other documents proving the right to use this licensed software as part of the system.

Should it transpire that the software is to be integrated with another system using an exchange protocol or algorithm that is subject to restrictions in Ukraine, permission to use such a protocol or algorithm must be obtained from the relevant authorities before the integration is implemented and put into operation.

7.5. System scalability and modernization requirements

Each system element must be designed to allow scalability. Database servers must be capable of vertical or, if possible, horizontal scalability.

7.6. Standardization and unification requirements

The standardization and unification of system functions should be ensured through the use of modern software tools that support a single technology for the design and development of functional, informational, and computing aspects of software.

The software system as a whole and its individual components must conform to the primary international and national agreements and standards in the field of information technology.

8. TECHNICAL SUPPORT REQUIREMENTS

The software should meet the following requirements and capabilities:

- Physical and logical integrity of data

- Minimization of redundancy of data in storage

- Standardization of data presentations

- Reliability and currency of data

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

- Ensure the storage of data on the history of data changes made by users, to ensure accountability for data modifications

- Ensure the assignment and granting of access privileges based on roles or a similar principle

- Ensure automatic consolidation and data integrity for geographically distributed data

- Provide a documented API for integration with other information systems

8.1. System deployment

The system may be deployed in a cloud service for the duration of development and rollout.

8.2. Backup and disaster recovery system

The system design should include system backup mechanisms, backup procedures, and instructions for system recovery after disasters. System recovery includes:

- Recovery of system and applied software configurations

- Recovery of user information

- Data recovery

8.3. Connection to the logging system

The development should include a connection to the logging system. The logging system must ensure the logging of the following events:

- Starting and stopping of specific system services

- Login/logout security events

- System operation errors such as communication errors, system data integrity errors, unforeseen data processing delays

- Critical events from the monitoring system (critically low memory, disk space, etc.)

- System usage events (receiving a request, the result of request processing and logging of instances where the request threshold level has been exceeded in order to prevent unauthorized data leaks)

- Other security events

9. ARCHITECTURE REQUIREMENTS AND TECHNOLOGY STACK

The system must use database and logging technologies, tools, and systems, etc.

All system services, such as application servers, the data bus, the main database, and load balancers, must meet the following requirements:

- High availability

- Fault tolerance

- Redundancy
- Vertical and horizontal scalability

10. SYSTEM INSPECTION AND ACCEPTANCE PROCEDURE

The following organizational measures are planned to take into account and respond to changes during the course of detailing and implementation of system requirements:

- System development methodology: Agile, Scrum with a sprint length of 2 weeks;
- Level of detail of the requirements: user story for a part of the system functionality with sections - general requirements, what-if scenarios, design, logging, localization, and acceptance criteria.

Expected system development timeframe: up to 9 months from the contract signing date with subsequent tentative key milestones of system development and delivery:

Key milestone	Tentative timeframe
Updating and detailing of requirements	Throughout the development cycle
Development and validation of subsystem concepts	Up to 1 month
Development and delivery of subsystems	Up to 8 months
Testing and adaptation of subsystems	1 month
Warranty support	4 months from the time of Product

	acceptance

An acceptance committee consisting of representatives of the Chernivtsi City Council and the EUACI must be formed for the purposes of system acceptance into operation.

The Contractor shall grant the EUACI non-exclusive rights to the software developed. The EUACI shall in turn grant the non-exclusive rights to the Chernivtsi City Council.

Upon acceptance into operation, the system should pass acceptance testing to determine the degree to which it conforms to the ToR.

The results of acceptance testing shall be reflected in a report containing an opinion on the degree to which the system conforms to the requirements of the ToR, and a decision to accept the system into commercial operation.

The software to be supplied must be installed and configured on servers chosen by the Chernivtsi City Council.

The system must have the following documentation:

- Functional description of the system

- Data backup and recovery manual

- System user manual

- Training program for system users in various roles

- Certificate of delivery and acceptance of a Product copy (software to be supplied)