TERMS OF REFERENCE

Regarding

for development of software The Risk Management, Monitoring, and Efficiency Evaluation System for Procurement

for the Agency for Restoration

## 1. Background and context

**The European Union Anti-Corruption Initiative (EUACI)**

The European Union Anti-Corruption Initiative (EUACI) in Ukraine is a joint EU and Government of Denmark financed programme aimed at supporting Ukraine in its efforts to reduce corruption at the national and local level through the empowerment of citizens, the civil society, businesses and state institutions. In May 2020, the EUACI entered into its phase II that runs until mid-2024.

The large-scale Russian invasion of Ukraine changed the context in which the EUACI is working. To address new challenges, the EUACI revised its work plan and decided to focus on several new topics, including the topic of transparent and accountable management, humanitarian aid ongoing and upcoming reconstruction and building processes.

The topic of reconstruction aid and integrity will become one of the key activities of the program for many months to come, both at the national and local levels and across the three components of the EUACI. The Government of Ukraine is the key counterpart of the EUACI in this area.

Acknowledging the importance of a coordinated and well-managed process of the recovery, the Government of Ukraine in December 2022 decided to merge two Ministries mandated to work on different aspects of this process (The Ministry of Infrastructure and The Ministry of Territorial and Regional Development) into the consolidated Ministry of Communities, Territories, and Infrastructure Development of Ukraine.

In January 2023, the Government of Ukraine established the State Agency for Reconstruction and Development of Infrastructure of Ukraine (hereinafter – the Agency). The Agency has been tasked with ensuring the efficient and transparent implementation of current projects aimed at the country's rapid recovery and post-war reconstruction. The Agency was created by merging the State Road Agency of Ukraine and the State Agency of Infrastructure Projects. Both agencies have a history of construction projects, primarily focused on building roads, bridges, and other infrastructure projects.

The mission and scope of the newly created Agency include not only transport infrastructure but also critical infrastructure, energy infrastructure, housing, and social infrastructure.

Given the complexity of these procurement procedures involving substantial sums of money, often marked by low competition and corruption scandals, the Agency aims to become the most efficient organization in the country for reconstruction projects. These procurements will be in the spotlight of both the public and international donors. Additionally, the electronic procurement system offers opportunities for in-depth analytics and monitoring. Therefore, there is an urgent need to develop an appropriate system for risk assessment and monitoring of procurement procedure outcomes.

EUACI supports the Ministry in the implementation of the risk assessment and monitoring of procurement tool and provides technical assistance in the procurement of services for the development and implementation of the software required for its operation.

These Terms of Reference (ToR) provide more details about the assignment.

**Main Beneficiary, Owner, Administrator and Potential Users of the System**

The main beneficiary of the System is the **Ministry for the Development of Communities, Territories and Infrastructure of Ukraine** (hereinafter referred to as **the** **Ministry**).

The owner of the System is the state represented by the Ministry.

**The State Agency for the Recovery and Development of Infrastructure of Ukraine** (hereinafter – **the Agency**) is the System Administrator.

The potential target audiences for the flexible risk management and monitoring system in public procurement are diverse, each playing a crucial role in ensuring the system's effectiveness and integrity.

These audiences include:

1. **Government Agencies and Public Sector Entities**: As the primary users, government agencies, including the Agency responsible for reconstruction and development, would rely on this system for planning, executing, and monitoring procurement processes. The system's insights and alerts would help these entities maintain compliance with laws and regulations, ensure efficient use of resources, and uphold public trust.
2. **Financial Oversight and Regulatory Bodies**: Entities responsible for financial oversight, such as audit offices and anti-corruption agencies, would utilize the system to detect, investigate, and prevent instances of fraud, corruption, or procedural violations. The system's data-driven approach would aid in ensuring accountability and transparency in public spending.
3. **International Donors and Funding Organizations**: Given the significant financial and developmental stakes, international donors and organizations funding reconstruction and infrastructure projects would be keenly interested in the system. It would provide them with reassurance that their contributions are being managed effectively, transparently, and in accordance with international best practices.
4. **Private Sector Contractors and Suppliers**: Companies involved in bidding for and executing government contracts would benefit from a more transparent and fair procurement process. The system's ability to level the playing field would encourage broader participation from a diverse range of suppliers, potentially leading to more competitive pricing and higher quality outcomes.
5. **Local Government and Community Leaders**: As stakeholders in the regional development and beneficiaries of the projects, local government officials and community leaders would be interested in how funds are being allocated and spent. The system would provide them with valuable insights into the progress and integrity of projects impacting their constituencies.
6. **Civil Society and Watchdog Organizations**: Non-governmental organizations, watchdog groups, and other elements of civil society play a crucial role in monitoring public sector activities. Access to data and analytics from the system would empower these groups to conduct independent assessments and advocacy, thereby contributing to public oversight and accountability.
7. **Journalists and Media Outlets**: The media would use the system as a source for reporting on public procurement activities, uncovering stories of success or raising flags about potential issues. This scrutiny is vital for maintaining public awareness and accountability.

By serving these varied target audiences, the system not only enhances the procurement process but also strengthens the broader ecosystem of public accountability and efficient governance.

**Software description**

The implementation of a flexible system will enable timely responses to changes in legislation and the behavior of organizations and participants, thereby allowing for rapid action against potential violations. This approach will lead to several significant benefits:

1. **Enhanced Competitive Environment and Transparency**: By swiftly addressing potential violations, the system will elevate the level of competition and transparency in the realm of public procurement. This enhancement is crucial for fair and open procurement processes.
2. **Prevention of Fraud and Corruption**: The system's ability to rapidly detect and respond to irregularities plays a pivotal role in preventing possible fraudulent activities and corruption in public procurement. This preventive measure is essential to maintain the integrity of procurement processes.
3. **Identification of Weaknesses in Procurements**: By pinpointing vulnerabilities in procurement processes, the system strengthens monitoring activities conducted by the Agency. Identifying these weaknesses allows for targeted improvements and risk mitigation strategies.
4. **Enhanced Monitoring of Agency Procurements**: The system reinforces the monitoring of procurements carried out by the Agency, ensuring that they comply with the legal and procedural standards and are conducted efficiently and transparently.
5. **Development of the Agency's Procurement System**: The introduction of an automated risk indicator system, including a constructor for their formation, will aid financial control bodies and other interested parties in detecting violations of public procurement legislation. These automated indicators will allow for more efficient and effective oversight of procurement activities, enhancing the overall robustness of the system.

In summary, the flexible system will not only streamline the procurement process but also bolster the integrity and effectiveness of public procurement in Ukraine, aligning it more closely with international standards and best practices.

**Technical Assistance**

These Terms of Reference (ToR) are intended to meet the Ministry and The State Agency for the Recovery and Development of Infrastructure of Ukraine need for technical assistance with the development and improvement of the risk assessment and monitoring of procurement tool.

## 2. Purpose

The purpose of the assignment is to provide a sound technical foundation for the EUACI's support to Ministry for the Development of Communities, Territories and Infrastructure of Ukraine and The State Agency for the Recovery and Development of Infrastructure of Ukraine.

## 3. Objective

The objective of the assignment is to provide services required for the risk assessment and monitoring of procurement tool for the Ministry and the Agency according to the technical requirements annexed to this Terms of Reference.

## 4. Scope of work

The scope of work includes all the activities necessary to ensure the achievement of the objective above, including, but not necessarily limited to:

**Kick-Off:**

1) Present work plan and assignment implementation strategy and considerations to EUACI Component Team and to representatives of the Ministry and the RMS core team during Kick-Off meeting.

**Risk assessment and monitoring of procurement tool development**:

2) Development and delivery of the RMS (Technical requirements set out in this document (Annexes 1), including integrations)

3) Development of design and operational documentation;

4) Deployment and configuration of the System on technical resources specified by the Customer;

5) Carrying out the tests of the System provided for by the current regulatory acts;

## 5. Deliverables (output)

The deliverables are presented in Table 1 below along with a tentative timeline.

All deliverables are expected to be delivered in soft and hard copies unless otherwise agreed upon. Soft copies shall be submitted via email to the indicated EUACI contact person.

**Table 1: Summary of deliverables/outputs and the tentative timeline for delivery.**

|  |  |  |  |
| --- | --- | --- | --- |
| **#** | **Deliverable/Output** | **Timeline** | **Note** |
| 1 | **The work plan**, showing the timing for the System development with detailed stages of services | 1 week after the contract signing | To be submitted to the EUACI contact person by email during the Kick-Off meeting ahead of the presentation.  The service may be provided simultaneously with the 2nd deliverable. |
| 2 | **Development and delivery of the System** | 4 months after contract signing | The System to be developed according to the technical requirements, set out in this document (Annexes 1), including integrations. |
| 3 | **Presentation the developed System** for EUACI, Ministry for Restoration and the Agency for Restoration | 1 week after development | Closed presentation for EUACI, Ministry for Restoration and the Agency for Restoration |
| 4 | **Development** of design and **operational documentation** for the developed System | 3 weeks after development | The Terms of references should be prepared based on the technical requirements, set out in this document (Annexes 1).  The 4th deliverable may be provided simultaneously with the 2nd and 3rd deliverables. |
| 5 | **Carrying out the tests of the System** provided for by the current regulatory acts | 3 weeks after detailed the 3rd deliverable implementation | The developed system should be tested in accordance with technical requirements, set out in this document (Annexes 1).  The bug fixing report should be prepared. |
| 6 | **Deployment and configuration of the System** on technical resources specified by the Ministry for the Development of Communities, Territories and Infrastructure of Ukraine for the Development of Communities, Territories and Infrastructure of Ukraine. | 3 weeks after tests approval | As a result of the work, the Contractor shall provide support in deployment and configuration. At this stage the Contractor have to transfer all source codes and documentation to EUACI and the Ministry for the Development of Communities, Territories and Infrastructure of Ukraine for the Development of Communities, Territories and Infrastructure of Ukraine. |
| 7 | **Guaranteed technical support** for maintaning | 6 months after the system is developed and tested | The contractor guarantee technical support, monitoring of experimental operation, elimination of detected shortcomings, and remarks of the System within 6 months from the date of introduction of the System into the testing process |
| 8 | **At least 2 training sessions for public officials responsible for maintaining and/or working in the system/product** | 1 week after the delivery of IT Product | The contractor is expected to develop training materials and a training plan that includes at least 2 offline/online training sessions for public officials responsible for working in Product.  Training sessions are completed, the list of participants and trained officials are provided to the EUACI staff along with training materials used. |

The timelines indicated in the table above are indicative. The contractor will reflect on and update the timelines for different activities during the preparation and updating of the contractor’s work plan. During the Kick-Off meeting with the EUACI Component Team, the contractor’s updated work plan will be discussed, including the proposed timeline for the different activities and the submission of deliverables.

## 6. Timing

The expected duration of the assignment is 6 months, with a tentative start in Mar 2024 and completion in August 2024.

## 7. Methodology

The contractor will work under the supervision of the EUACI Senior Project Manager for Integrity Reconstruction.

|  |  |  |
| --- | --- | --- |
| **Stage** | **Stage** | **Stage description** |
| **Basic risk setup & analytics** | **Scope of Work** | Development of scope of work |
| **RMS - Operational** | 1. Risk profile Registry with up to 3 filters and  2. CRUD Risk profile card (up to 20 attributes)  3. Risk profile coding based on chosen programming language (python)  4. Risk profile lifecycle (up to 3 statuses)  5. Risk profile testing (basic)  6. Integration to Prozorro |
| **RMS - Backoffice** | 1. User management  2. Role access |
| **RMS - Risk Profiles (coded)** | Up to 20 risk profiles coded within RMS functionality |
| **RMS - Non-functional requirements** | 1. The interface language is only Ukrainian  2. System load up to 50 requests/c with support for horizontal and vertical scaling  3. Browser support - only Google Chrome  4. Web version support for Desktop type screens only  5. Logging of actions in the System (login, change of data, deletion of data with fixation of the author, date, time and name of the object without details) with storage of logs for up to 3+1 = 4 years with the use of an ELK solution (for example, Kibana)  5. Storage of System data for 4 years (3 years - the validity period of initiating a legal action + 1 year for the possibility of responding in the event of an application on the last day of the 3-year period for initiated legal action) |
| **RMS - Documentation** | 1. Terms of reference for the development of System modules;  2. System and Administrator user manual;  3. Developer documentation:  - Description of the System architecture;  - АРI documentation for the developer, which is generated automatically:  -- Has a list of supported methods and their description;  -- Has a list of request parameters and their description;  -- Has a list of response attributes and their description;  -- Allows emulating a request/response with a description of the response status (success, error);  4. Test program and methodology;  5. Test protocol and report to the protocol;  6. Training program and training materials for users of different roles. |
| **BI Basic** | Internal BI with:  1. Up to 5 dashboards with different categories, **based on default BI Styles**:  - Procedural Violations by the Organization  - Verification of Procurement Participants  - Results of Procurements (for different regional Services and the Agency on the whole, for different periods, for different CPV groups or selected procedures)  - Results of Contract Execution |

The contractor should appoint a responsible project manager for communication with the EUACI Component Team and responsible managers for communication with each Ministry for the Development of Communities, Territories and Infrastructure of Ukraine and the Agency.

The contractor reports monthly about the work plan implementation and plans to EUACI Senior Project Manager for Integrity Projects and Reconstruction

## 8. Payment

Payment will be made in a maximum of **three** instalments.

The first payment, representing a maximum of **20%** of the total contract value, will be made as a pre–payment after contract signing and after receipt of the contractor’s work plan.

The second payment, representing a maximum of **50%** of the total contract value, will be made Development and delivery of the 1st stage of the System.

Third, and final payment representing a maximum of **30%** of the total contract value will be made upon receipt and approval by EUACI all documents, including a Final Invoice.

Payment will be based on the stage prices and final contract value.

## 9. Qualifications and Competence of Staff

The assignment described above is expected to be carried out by a qualified Contractor.

The contractor's core team shall include the following profiles:

|  |  |
| --- | --- |
| **Position** | **Team lead, project manager** |
| 1-General Qualifications | o 4 years of experience as a team lead in SW development projects or/and project management  o Proven experience with providing technical assistance, services to government agencies or local self-government |
| 2-Adequacy for the assignment | o Experience in leading teams of a similar nature in a relevant technical field  o Experience in implementation of risks management systems and database management systems |
| 3-Experience in the region and language | o Relevant working experience in the region.  o Basic English language communication skills (verbal and written, A2-level), fluency in Ukrainian |

|  |  |
| --- | --- |
| **Position** | **Software Architect** |
| 1-General Qualifications | o Master degree in information systems and technologies or relevant  o 10-12 years of experience of SW development and implementation |
| 2-Adequacy for the assignment | o Experience in handling an assignment of a similar nature in a relevant technical field  o Experience in implementation of risks management systems and database management systems |
| 3-Experience in the region and language | o Relevant working experience in the region.  o Basic English language communication skills (verbal and written, A2-level), fluency in Ukrainian |

|  |  |
| --- | --- |
| **Position** | **Full stack Developer** |
| 1-General Qualifications | o Master degree in information systems and technologies or relevant  o 3 years of experience of SW development and implementation |
| 2-Adequacy for the assignment | o Experience in handling an assignment of a similar nature in a relevant technical field  o Computer programming services  o Experience in implementation of risks management systems and database management systems |
| 3-Experience in the region and language | o Relevant working experience in the region.  o Basic English language communication skills (verbal and written, A2-level), fluency in Ukrainian |

## 

## 10. Estimated budget and level of effort

The maximum budget available for this assignment is up to EUR 85,000 (633,780 DKK).

The proposed IT-solution can be developed by the Contractor and transferred and further owned/maintained by the Agency (the associated maintenance costs are expected to be minimal).

|  |  |  |
| --- | --- | --- |
| 1. Automatic risk-indicators calculation module; 2. Module for data exchange with other IT-systems (i.e. Prozorro, DREAM, BigRecoveryPortal, State Corporate Register (EDR) and AMCU database); | 6 months | **Up to 85,000**  **EUR** |

This amount includes subsistence allowance as well as costs related to local travel, and other project-related costs such as for example audit, basic technical assessment and printing.

Proposals, where the Contract Price offered, exceed the above maximum budget will be rejected.

## 11. Management

The contractor is responsible for the timely delivery of the outputs required in the required quality and quantity for the internal management of the contractor’s team.

The EUACI will appoint a contact person responsible for the management of this assignment from the side of the EUACI, including for any correspondence with regard to the implementation of the assignment and for issues related to the agreement between the contractor and the EUACI. The contractor will report to and ensure that the appointed contact person is copied in on all relevant communication related to the assignment, including correspondence with all stakeholders.

## 12. Background documents

**Annex 1** Technical requirements for development The Risk Management, Monitoring, and Efficiency Evaluation System for Procurement Procedure of the Agency for Restoration.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

The Risk Management, Monitoring, and Efficiency Evaluation System for Procurement Procedure

for the Agency for Restoration

Technical requirements

## 

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# 1. GLOSSARY

1. **The Risk Management, Monitoring, and Efficiency Evaluation System for Procurement Procedures** (hereafter referred to as the System) is a framework designed to promptly respond to changes in legislation and the behavior of organizations and participants, thereby enabling rapid response to potential violations.
2. **The State Agency for Restoration and Development of Infrastructure of Ukraine (hereafter referred to as the Agency)** is responsible for organizing construction, repair, modernization of infrastructure, residential properties, public buildings, social sector, housing and communal services, landscaping of settlements, engineering-transport, energy infrastructure, civil defense shelters, etc. and formally consists of the Agency, which leads the whole process, elaborates specific methodologies and monitors the projects on different stages, and regional Services for Restoration which are formal procurers and parties of the construction contracts.
3. **A procedure** is a procurement announced by the Customer in accordance with one of the procedures defined by the Public Procurement Law.
4. **The Queue of Risky Procurement Procedures** (hereafter referred to as the Queue) is an organized list of procurement procedures triggered by automatic risk indicators.
5. **An automatic risk profile** is a tool used to check state procurements regulated by the “Public Procurements Law” for compliance with the norms and principles of this law, as well as instructions and orders of state bodies regulating state procurements. In the process of checking, each reviewed procurement procedure takes its place in the list of reviewed procedures (in the Queue).
6. **Customers** are entities defined according to Article 2 of the “Public Procurements Law”, who conduct procurement of goods, works, and services in accordance with the Law.
7. **The Information and Telecommunication System "PROZORRO"** (hereafter referred to as IT System "PROZORRO") is part of the Electronic Procurement System, which includes authorized electronic platforms. There is an automatic exchange of information and documents between the IT System "PROZORRO" and electronic platforms. The IT System "PROZORRO" comprises the electronic Auction module, Central Database, and the system for searching and publishing information.

## 

# 2. THE PURPOSE AND OBJECTIVES OF THE SOFTWARE

## 2.1. General information about the initiative

According to estimates from the KSE Institute, by early August 2023, the direct documented losses of Ukraine's infrastructure due to Russian aggression exceeded $150 billion. This sum largely comprises the destruction and damage of residential buildings, energy facilities, bridges, hydraulic structures, communal services, as well as health care and educational facilities in Ukraine. Importantly, these devastations lead to significant social and economic consequences, adversely affecting the living conditions of millions of people in Ukraine, the opportunities for business operations, and the functioning of the state as a whole.

In response to the critical need for the reconstruction of the country's civil infrastructure, the Ukrainian Government established the Agency at the beginning of 2023. The Agency is responsible for organizing the construction, repair, modernization of infrastructure, residential real estate, public buildings, social sphere, housing and communal services, landscaping of settlements, engineering-transport, and energy infrastructure, civil defense shelters, etc. The Agency is expected to undertake a significant portion of the most complex and comprehensive reconstruction projects. It will assume the role of the organization from local government bodies and other asset holders, conducting procurement procedures for the respective construction works and subsequently overseeing the execution of the contracts.

Given the complexity of these procurement procedures involving substantial sums of money, often marked by low competition and corruption scandals, the Agency aims to become the most efficient organization in the country for reconstruction projects. These procurements will be in the spotlight of both the public and international donors. Additionally, the electronic procurement system offers opportunities for in-depth analytics and monitoring. Therefore, there is an urgent need to develop an appropriate system for risk assessment and monitoring of procurement procedure outcomes.

## 

## 2.2. General information about the project

The system for risk management and monitoring of procurement procedures has several key functions:

1. **Rapidly Identify High-Risk Procurements**: It is designed to quickly examine and identify procurements that have a high degree of risk in terms of dishonesty or inefficiency.
2. **Automatic Verification of Procurements for Procedural Violations**: The system automatically checks procurements for any procedural violations, ensuring compliance with the established norms and regulations.
3. **Comprehensive Evaluation of Procurement Results**: The system comprehensively assesses the outcomes of procurement procedures conducted by the Agency’s organizations. It compares these results with planned indicators, past performance, and similar organizations within the system, providing a holistic view of performance and efficiency.
4. **Monitoring and Evaluating Contract Execution**: The system tracks and evaluates the outcomes of contracts executed by the Agency's regional services as part of the reconstruction program. This aspect ensures that the execution of contracts aligns with the agreed terms and objectives, and any deviations are promptly addressed.
5. **Generating Reports for Stakeholders**: It creates relevant reports for interested parties, including the Agency's management, international partners, central and local government authorities, journalists, and the public. These reports provide insights into the procurement activities, outcomes, and overall effectiveness, fostering accountability and informed decision-making.

By integrating these functions, the system plays a crucial role in ensuring the integrity, efficiency, and transparency of the procurement processes, especially in the context of the significant reconstruction efforts underway in Ukraine.

## 

## 2.3. Purpose of the software

The implementation of a flexible system will enable timely responses to changes in legislation and the behavior of organizations and participants, thereby allowing for rapid action against potential violations. This approach will lead to several significant benefits:

1. **Enhanced Competitive Environment and Transparency**: By swiftly addressing potential violations, the system will elevate the level of competition and transparency in the realm of public procurement. This enhancement is crucial for fair and open procurement processes.
2. **Prevention of Fraud and Corruption**: The system's ability to rapidly detect and respond to irregularities plays a pivotal role in preventing possible fraudulent activities and corruption in public procurement. This preventive measure is essential to maintain the integrity of procurement processes.
3. **Identification of Weaknesses in Procurements**: By pinpointing vulnerabilities in procurement processes, the system strengthens monitoring activities conducted by the Agency. Identifying these weaknesses allows for targeted improvements and risk mitigation strategies.
4. **Enhanced Monitoring of Agency Procurements**: The system reinforces the monitoring of procurements carried out by the Agency, ensuring that they comply with the legal and procedural standards and are conducted efficiently and transparently.
5. **Development of the Agency's Procurement System**: The introduction of an automated risk indicator system, including a constructor for their formation, will aid financial control bodies and other interested parties in detecting violations of public procurement legislation. These automated indicators will allow for more efficient and effective oversight of procurement activities, enhancing the overall robustness of the system.

In summary, the flexible system will not only streamline the procurement process but also bolster the integrity and effectiveness of public procurement in Ukraine, aligning it more closely with international standards and best practices.

## 

## 2.4. Target audience of the software

The potential target audiences for the flexible risk management and monitoring system in public procurement are diverse, each playing a crucial role in ensuring the system's effectiveness and integrity.

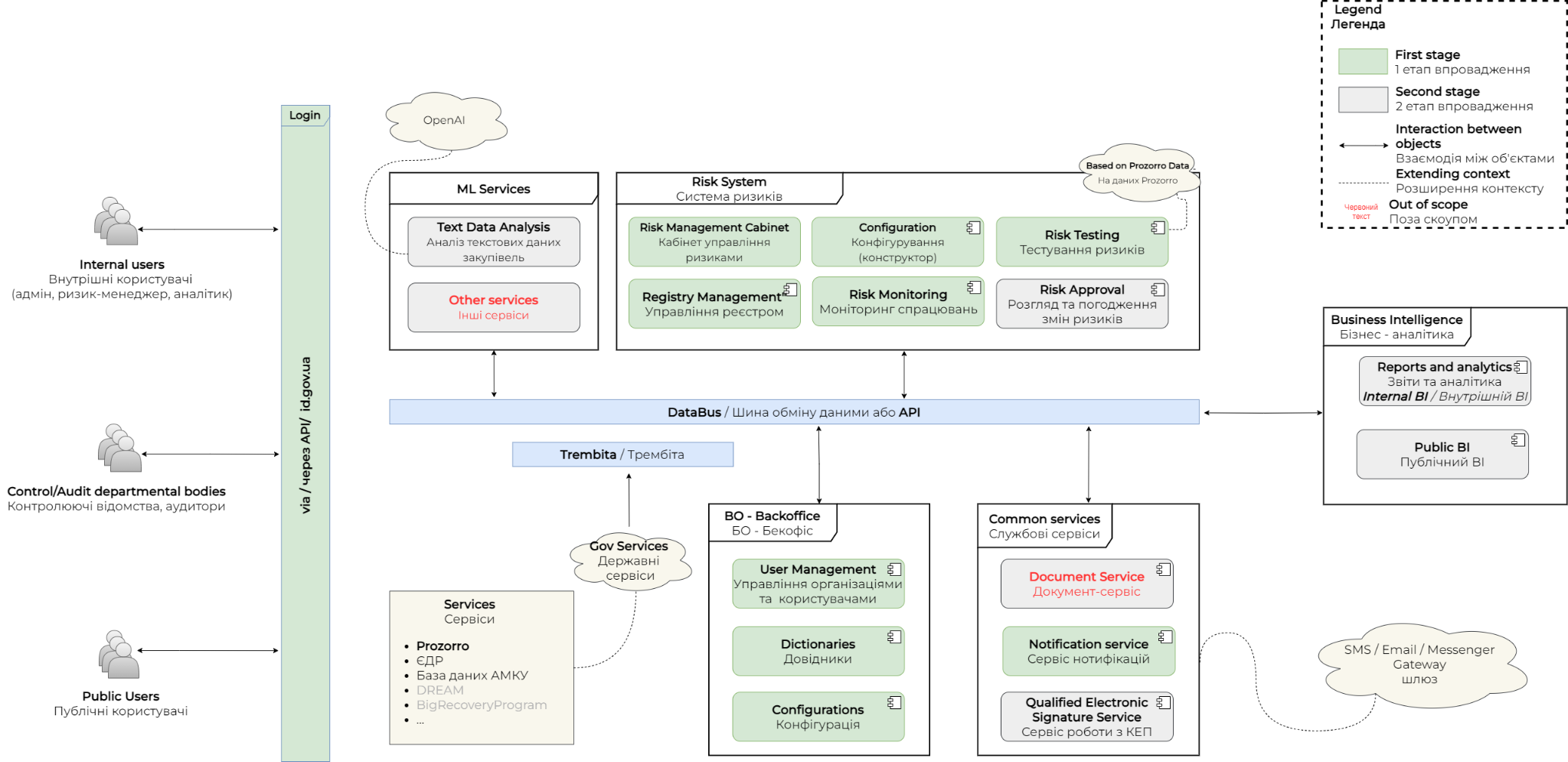
These audiences include:

1. **Government Agencies and Public Sector Entities**: As the primary users, government agencies, including the Agency responsible for reconstruction and development, would rely on this system for planning, executing, and monitoring procurement processes. The system's insights and alerts would help these entities maintain compliance with laws and regulations, ensure efficient use of resources, and uphold public trust.
2. **Financial Oversight and Regulatory Bodies**: Entities responsible for financial oversight, such as audit offices and anti-corruption agencies, would utilize the system to detect, investigate, and prevent instances of fraud, corruption, or procedural violations. The system's data-driven approach would aid in ensuring accountability and transparency in public spending.
3. **International Donors and Funding Organizations**: Given the significant financial and developmental stakes, international donors and organizations funding reconstruction and infrastructure projects would be keenly interested in the system. It would provide them with reassurance that their contributions are being managed effectively, transparently, and in accordance with international best practices.
4. **Private Sector Contractors and Suppliers**: Companies involved in bidding for and executing government contracts would benefit from a more transparent and fair procurement process. The system's ability to level the playing field would encourage broader participation from a diverse range of suppliers, potentially leading to more competitive pricing and higher quality outcomes.
5. **Local Government and Community Leaders**: As stakeholders in the regional development and beneficiaries of the projects, local government officials and community leaders would be interested in how funds are being allocated and spent. The system would provide them with valuable insights into the progress and integrity of projects impacting their constituencies.
6. **Civil Society and Watchdog Organizations**: Non-governmental organizations, watchdog groups, and other elements of civil society play a crucial role in monitoring public sector activities. Access to data and analytics from the system would empower these groups to conduct independent assessments and advocacy, thereby contributing to public oversight and accountability.
7. **Journalists and Media Outlets**: The media would use the system as a source for reporting on public procurement activities, uncovering stories of success or raising flags about potential issues. This scrutiny is vital for maintaining public awareness and accountability.

By serving these varied target audiences, the system not only enhances the procurement process but also strengthens the broader ecosystem of public accountability and efficient governance.

# 

# 3. FUNCTIONAL REQUIREMENTS



[Figure - Functional scheme of The Risk Management, Monitoring, and Efficiency Evaluation System for Procurement Procedures](https://drive.google.com/file/d/1f_R37dFsFU8ubj9zL9rehygSk_dHiz8p/view?usp=sharing)

### 

## 3.1. Concept of system operation

The System for risk management and monitoring in public procurement operates with a sophisticated and multifaceted approach:

1. **Data Utilization from IT System "PROZORRO"**: The System harnesses data from the Central Database of the Information and Telecommunication System "PROZORRO." This database is a crucial resource, providing extensive and detailed information on public procurement processes.
2. **Manual Input of Additional Indicators and Values**: Beyond automated data collection, the System allows for manual entry of additional necessary indicators and values. This feature includes the capability to input plans for announcements, norms for procedure durations, prices of key resources, presence of critical publications in the media, the number of staff in the organization's procurement service, and a list of organizations for comparison, among others. This flexibility ensures that the System can adapt to specific needs and contexts, enhancing its utility and accuracy.
3. **Built on Existing Developments and Models**: The System is constructed on the foundation of existing developments and models. This approach leverages proven methodologies and technologies, ensuring reliability and efficiency while also allowing for innovative enhancements tailored to the specific requirements of Ukraine's public procurement sector.
4. **Dual Components - Closed and Open Sections**: The System comprises two main parts:
   1. **Closed Section**: Access to this part is administered by the user. It likely contains sensitive or confidential data and tools necessary for internal operations, risk assessments, and decision-making processes.
   2. **Open Section with Public Access**: In this section, users can publish reports and analytical information accessible to all interested parties. This open-access feature promotes transparency and accountability, allowing stakeholders, including the public, watchdog organizations, and international bodies, to view and assess the data and outcomes of the procurement processes.

By combining robust data integration, manual input flexibility, established operational models, and a dual-structured access system, this approach aims to enhance the integrity, efficiency, and transparency of the public procurement process in Ukraine.

## 

## 3.2. PROZORRO procurement procedures

1. **"Procurement Plan"**: This process facilitates the creation and publication of procurement plans, appendices to the annual plan, and their amendments. It ensures that procurement activities are planned and transparent.
2. **"Simplified Procurements"**: Automates procurements as outlined in Parts 2 and 3 of Article 3 of the Public Procurement Law. This process streamlines smaller or less complex procurement activities.
3. **"Open Bidding (Ukraine)"**: Automates procurement processes as stipulated in Part 1 of Article 3 of the Public Procurement Law. It is designed for more significant and complex procurement activities within Ukraine.
4. **"Open Bidding (EU)**": Similar to "Open Bidding (Ukraine)" but includes procurements that must publish information in English, as required by Part 4 of Article 10 of the Public Procurement Law. This caters to a broader, potentially international audience.
5. **"Open Bidding with Special Features"**: Automates specific features of open bidding processes as per the Resolution of the Cabinet of Ministers of Ukraine from October 12, 2022, No. 1178. It addresses unique or exceptional procurement scenarios.
6. **"Competitive Dialogue"**: Automates the competitive dialogue process as regulated by the Public Procurement Law. This procedure is used for complex procurements where specifications cannot be established with sufficient precision.
7. **"Report on Signed Contracts"**: Enables the publication of reports on contracts signed within the system as per Article 10 of the Public Procurement Law. This applies to procurements of goods, works, and services conducted outside the electronic system, provided the cost meets specified thresholds.
8. **"Request for Price Proposal"**: Automates procurements using the electronic catalog as defined by the Resolution of the Cabinet of Ministers of Ukraine No. 822 from September 14, 2020. It simplifies the process for certain types of procurements.
9. **"Appeals"**: Automates the submission and review of demands to address violations related to simplified procurements and complaints about procurement exceeding the threshold value.
10. **"Contract management"**: Automates the process of managing procurement contracts, ensuring efficient contract administration and compliance.

## 

## 3.3. List of available risk profiles and performance indicators

The public procurement process within the IT System "PROZORRO" encompasses several key conditions and checks to ensure transparency, compliance, and efficiency. These are outlined in various sections, addressing different aspects of the procurement process:

1. **Main Conditions for Conducting Procurements**:
   1. Submission deadlines for proposals (less than 20 days for procurements over 50 million UAH and less than 14 days for those under 50 million UAH - *specific values could be defined by the user*).
   2. Requirement of additional documents besides the Tender Documentation (TD), such as inspection reports, project documentation, cost estimates in xls or specialized cost estimating software. (to be implemented in second phase)
   3. Type of procedure, particularly noting non-competitive procedures.
   4. The procurement subject defined by a different CPV code than recommended. (to be implemented in second phase)
   5. For procurements over a certain value, the announcement should also be translated into English.
   6. In construction work procurements, the requirement for tender proposal security or contract execution.
   7. Use of evaluation criteria other than “100% price”.
2. **Procedural Violations by the Organization**:
   1. Timeliness in posting information as per Articles 10, 14, 15 of the Law (or corresponding articles of the 1178 during martial time).
   2. Deadlines for providing responses (Article 24).
   3. Requirements for bid security and contract execution (Articles 25, 27).
   4. Lack of publication of mandatory information or documents, or non-compliance with their content requirements (protocols, contracts, appendices, reports, etc.). (to be implemented in second phase)
   5. Decisions by the Antimonopoly Committee of Ukraine (AMCU) regarding violations in TD or decisions of the procuring entity.
   6. Decisions by the State Audit Service of Ukraine (SASU) regarding violations by the organization.
3. **Verification of Procurement Participants**:
   1. Two companies simultaneously participating in a series of tenders, potentially indicating collusion.
   2. Companies registered at the same legal address.
   3. Abnormally low bid prices from a participant.
   4. A company's history of refusing to sign contracts after winning tenders. (to be implemented in second phase)
   5. Companies winning only tenders of the Agency or only regional tenders in a specific area.
   6. Newly registered companies relative to the auction date.(to be implemented in second phase)
   7. Companies with AMCU decisions regarding anti-competitive actions. (to be implemented in second phase)
   8. Companies disqualified multiple times in recent years.
   9. Companies frequently withdrawing from contracts with the Agency.
   10. Positive indicators like companies registered in a different region than the announced project or long-standing companies newly participating in public procurements.
4. **Results of Procurements (for different regional Services and the Agency on the whole, for different periods, for different CPV groups or selected procedures)**:
   1. Percentage of successful procedures against planned and announced.
   2. Average duration of procurement procedures.
   3. Difference in days between the actual and standard/planned duration of the complete procedure.
   4. Average internal organization quality assessment for the winning bidder. (to be implemented in second phase)
   5. Relationship of contract price to market level at the time of contract signing. (to be implemented in second phase)
   6. Average number of bids for competitive procedures
   7. Justification for the necessity of procurement with alternative analysis. (content analysis is to be implemented in second phase)
   8. Percentage of procedures with critical media publications without solid refutation. (to be implemented in second phase)
   9. Procedures with established violations by SASU.
   10. Procedures with violated formal deadlines.
   11. Number and sum of successful procedures per procurement service employee.
   12. Efficiency of the process (savings amount compared to procurement process cost).
   13. Average amount of warehouse remains or advances relative to the annual procurement volume. (to be implemented in second phase)
5. **Results of Contract Execution**:
   1. Percentage of contracts executed as planned. (to be implemented in second phase)
   2. Timely executed contracts.
   3. Contracts with extensions.
   4. Average actual increase in duration compared to the schedule. (to be implemented in second phase)
   5. Projects with complaints from internal organizations. (to be implemented in second phase)
   6. Contracts with quality claims against the contractor. (to be implemented in second phase)
   7. Contracts with price increases. (detailed prices comparison from calculation to be implemented in second phase)
   8. Additional direct contracts signed. (connection to particular asset / object to be implemented in second phase)
   9. Relation of delivery price to current market price. (to be implemented in second phase)
6. Rating formation and comparison with peers (to be implemented in second phase)
   1. Defining specific indicators and wages, as well as peer lists and a period for rating formation
   2. Defining a peer group, a period, an indicator and CPVs for comparison the performance between peers

These conditions and checks are designed to monitor, identify, and address potential risks and inefficiencies throughout the procurement process, from the announcement stage to the execution and completion of contracts.

## 

## 3.4. System role model & main features

The proposed system for risk management and monitoring in public procurement is designed to have different levels of access tailored to specific roles, each with distinct responsibilities. These roles include:

1. Administrator:
   1. Primary Function: The Administrator's key responsibility is managing users and their access to the System. This role involves activities like activating or deactivating user accounts and overseeing user privileges.
   2. Access Level: Administrators would likely have the highest level of access within the system, including the ability to manage system settings, user roles, and permissions.
   3. Significance: This role is crucial for maintaining the integrity and security of the System, ensuring that only authorized personnel have access to sensitive data and functionalities.
2. Risk Manager:
   1. Primary Function: The Risk Manager is tasked with creating, populating, and maintaining the risk profiles and performance indicators within the System. This role includes the activation and deactivation of risk profiles, adjustment of KPIs and ratings, as well as peer groups for comparison, ensuring they are current and effectively identifying potential procurement issues.
   2. Access Level: Risk Managers would have access to the risk management tools and modules within the System, enabling them to adjust risk parameters, thresholds, peers, periods and indicators.
   3. Significance: This role is integral to the System's ability to proactively identify and manage risks, ensuring that procurement processes are monitored for any irregularities or potential inefficiencies.
3. Analyst:
   1. Primary Function: The Analyst is responsible for reviewing the queue of high-risk procurement procedures, actual values of performance indicators and their comparison with planned or previous ones, or with defined benchmarks, as well as for rating formation and interpretation. Besides the Analyst adds internal (non-Prozorro) information which is needed for relevant calculations and comparisons (plans, norms, etc). This role involves analyzing these procedures and the triggered risks to understand their nature, causes, and implications.
   2. Access Level: Analysts would have access primarily to reporting and analysis tools. They would be able to view detailed information about procurement procedures and associated risks but might not have the same level of system control as Administrators or Risk Managers.
   3. Significance: Analysts play a critical role in interpreting data and providing insights that can inform decision-making. Their analysis helps in understanding the effectiveness of the procurement process and in identifying areas for improvement.

During the implementation of the project for the creation of the System, the following actions must be performed and/or foreseen:

1. Analyst:
   1. Viewing the Queue of High-Risk Procedures:
      1. Allows the Analyst to review an updated list of procurement procedures classified as high-risk, facilitating prompt identification and focused analysis of procedures requiring urgent attention.
   2. Accessing the List of Risks Identified in Each Procedure:
      1. The Analyst can view specific risks identified in individual procurement procedures, enabling a detailed understanding of the nature and potential issues associated with each procedure.
   3. Viewing Detailed Information About Each Procedure:
      1. This feature provides comprehensive information about each procurement procedure, including participant details, contract conditions, interaction history, and other relevant data.
   4. Seeing the List of organizations in whose procedures Risk profiles were triggered:
      1. The Analyst receives information about organizations whose procurement procedures have triggered risk profiles, helping to identify potentially problematic interactions and focus on analyzing these organizations' activities.
   5. Grouping Procedures by Organizations Names:
      1. This functionality allows the Analyst to organize procurement procedures by organizations, aiding in the easier identification of trends and connections between different organizations and their procurements.
   6. Sorting Procedures by Organization Names:
      1. The Analyst can sort procurement procedures by organizations, simplifying the process of searching and analyzing specific data related to certain organizations.
   7. Filtering Procedures by Triggered Risks:
      1. The Analyst has the ability to filter procurement procedures based on specific risk profiles that have been triggered, allowing for a more targeted approach to risk analysis and management.
   8. Monitoring Compliance with Legislation and Methodology, Contract Execution, and Payments:
      1. The Analyst is responsible for tracking compliance with legislative and methodological standards in procurement procedures, as well as monitoring the execution of contract terms and payments.
   9. Comparing Procuremen Managers Among Themselves (Execution of Plans, Prices for Similar Goods, Assessment of Dynamics):
      1. This function involves analyzing and comparing different organizations based on criteria such as execution of procurement plans, price values for identical goods, and evaluation of overall activity dynamics.
   10. Accessing the History of Risk Recalculations:
       1. The Analyst has access to the history of changes in risks, allowing for an analysis of the evolution and shifts in the risk landscape associated with procurement procedures.
   11. Adding internal (non-Prozorro) information to the system (to be implemented in second phase)
   12. Selecting specific periods, CPVs (or procedures), peers and indicators for comparison or analysis
2. Risk Manager:
   1. Creating and Editing Risk Profiles, KPIs and ratings in the System:
      1. The Risk Manager can define and input new risk profiles that may emerge in procurement processes as well as KPIs and ratings. This includes the ability to edit existing risks to update and refine them as needed.
   2. Changing the Status of Risk Profile (Activation/Deactivation/Archiving):
      1. Managing risk profiles statuses within the system is a key responsibility, including activating, deactivating, and archiving risks. This enables effective management of risks that are current and relevant, as well as those no longer considered pertinent.
   3. Viewing the History of Risk Triggers:
      1. Access to the history of risk activations allows the Risk Manager to analyze the frequency and conditions under which certain risks become active. Understanding this history is crucial for assessing the effectiveness of current risk management strategies.
   4. Accessing the Risk Profiles Register (Including Sorting and Filtering):
      1. The Risk Manager can view all risks registered in the system, with options to sort and filter them based on various parameters such as creation date, frequency of activation, and status.
   5. Viewing Key Indicators for Risk Profiles (Frequency of Activation, Trends):
      1. Analyzing key performance indicators of risk profiles, including their activation frequency and trends over time, helps in evaluating the potential impact of risks on procurement processes.
   6. Risk Testing: Observing How a Risk Operates in a Specific Procedure:
      1. The Risk Manager has the capability to test how a particular risk might function in a specific procurement procedure. This allows for the verification of theoretical assumptions and the evaluation of the real-world performance of the risk algorithm.
3. Administrator:
   1. Viewing List of Users and Organizations:
      1. The Administrator has access to a comprehensive list of all users and organizations registered in the system. This capability allows for easy review and analysis of data regarding all system participants and tracking their activities.
      2. This overview is crucial for maintaining an understanding of who is using the system and how, which can inform decisions on system improvements and security.
   2. Managing Users (Adding/Removing Users):
      1. The Administrator is responsible for managing user accounts in the system. This includes adding new users to meet evolving needs or removing existing accounts to maintain the system's integrity and relevance.
      2. This function ensures that only authorized and relevant personnel have access to the system, which is essential for both security and efficiency.
   3. User Management (Editing General Information, Contact Details, Resetting Passwords):
      1. The Administrator has the authority to edit user information, including personal data, contact information, and account settings. This role involves ensuring that user information is up-to-date and accurate, and aligns with the organization's needs.
      2. The ability to reset passwords is a critical aspect of maintaining system security. It ensures that access to the system is controlled and that users can regain access if they encounter issues with their credentials.

## 

# 4. NON-FUNCTIONAL REQUIREMENTS

## 4.1. Reliability and safety requirements

The system reliability should be ensured in the following areas:

* Ensuring the operability of each system’s elements;
* Saving data.

At the same time, minimum attention should be required on the part of the system administrator regarding the response to the elimination of the consequences of element failures, while software and hardware should ensure data safety.

The system should provide 24x7x365 fault-tolerant operation and guarantee availability for end users at least at the level of 95 %.

All functional elements of the system should have redundancy according to the scheme of at least N+1 in order to maintain and update the software of individual components without interfering with the entire system operation.

The system should be protected from physical hardware failures by means of data and system elements logical backup using appropriate protocols and containerization and virtualization tools. A backup system should be created to protect against errors in the system software and application software in order to quickly restore working software configurations from backups.

The system should be restored within a maximum of 30 minutes.

The information safety in case of incidents should be fully ensured. Backup should be provided with the functionality implemented within the system software and at the same time with the standard DBMS tools used.

Separate geographically separated storage data centres are created to provide information backup in case of incidents. Backups should be performed at regular intervals, which ensures full data safety and recovery. The time spent on system recovery, taking into account technical delays, connecting to a backup data centre and operating performance monitoring, should be minimum to ensure continuous operation and should not exceed one day.

Data saving should be ensured in the following cases:

* Power off;
* Failure of technical information processing tools;
* Software errors, failures, or crashes.

## 

## 4.2. System Capacity Requirements

The System capacity should be designed for simultaneous operation by at least 40 users. As to the number of simultaneously active risk profiles and request processing time

* Projected number of active risk profiles is ~ 3,000-5,000;
* Taking into account additional double margin, the number of active profiles is ~ 10,000.

Information request processing time should meet the requirements as follows:

* Optimal – no more than 5 seconds (inclusive);
* Satisfactory – 5 to 60 seconds (inclusive);
* Unsatisfactory – more than 60 seconds.

Processing time doesn't include time required to process large volumes of data, data preparation.

## 

## 4.3. User Interface Requirements

End users access the system via the website as part of the system interface. The website will contain access to the signed up user account. A separate account interface is developed for each of the user groups, which will be adapted to the relevant maximum set of features. It is necessary to ensure the flexibility of interfaces for various features and provide for further expansion of the list of features available to users.

The website should work correctly on desktop screens with a resolution of 1366 \* 768 px. The system should be adapted for use in the most up-to-date Chrome version.

## 

## 4.4. Requirements for Protection of Information from Unauthorized Access

A set of the following measures is required to ensure the protection of information in the system:

* Legislative measures (taking into account regulations, standards, etc. aimed at creating a comprehensive information security system);
* Administrative and organizational measures (protection of network systems, especially management systems, selection and control of the activities of personnel involved in the system creation);
* Software and hardware measures (use of special hardware and software tools that prevent or complicate unauthorized access to network elements and information, checking compliance with the requirements of technical protection of equipment used in the system).

Information protection in the system is based on the implementation of the following basic principles:

* Centralized system management;
* Sequence of information security steps;
* Adequacy and effectiveness of protection;
* Maintenance of protection in case of system parts failure;
* Security tools protection;
* Ongoing protection;
* Concealment of protection.

## 

## 4.5. Information Security Requirements

The system should be protected from the most common types of attacks. The list of typical attacks will be agreed with the Contractor during the approval of the design and terms of reference.

Information that weakens information security (such as session id, user id, etc.) should not be displayed publicly.

The following rules should be met at the physical level:

* Physical access to the equipment should be restricted and all actions should be recorded;
* Physical access to the system backups should be restricted in accordance with the system administration regulations and all actions should be recorded;
* The system should have the features to allow limiting the number of requests to the central database in order to protect it from overload.

The system should meet the following requirements:

* The system protection should be provided by a set of software, hardware, and organizational tools and support for their organizational activities;
* The system protection should be provided at all technological levels of information processing and in all operational modes, including during repair and maintenance work;
* Identification and authentication of the system users should be performed based on a username and password;
* All requests that require an automated response from the system should be affixed with an EDS or registered as remote users (they are added to the list of users at the request of the administrator).

## 

## 4.6. Patent Purity Requirements

All software and hardware tools used in the system should comply with the terms and conditions of license agreements and ensure patent purity.

Developer does not have exclusive copyright for any of the system elements or the entire system.

If it is found out that the software should be integrated with any other system using an exchange protocol or algorithm to which any restrictions apply in Ukraine, permission to apply such protocol or algorithm should be obtained by the Developer from any competent authorities before implementing the integration and putting it into operation.

## 

## 4.7. System Development and Upgrade Requirements

Each system element should be designed taking into account the possible scalability. All system APIs should be able to scale horizontally. Database servers should be able to scale vertically or, if possible, horizontally.

## 

## 4.8. Requirements for technical support

Information support should meet the requirements and have capabilities as follows:

* Ensure physical and logical data integrity;
* Minimize redundancy of data stored;
* Standardization of data representation;
* Data reliability and relevance.

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

* Provide storage of data on the history of data changes by users to ensure responsibility for making changes to the data;
* Ensure the distribution and granting of access rights based on a role or any other similar principle;
* Ensure automatic consolidation and information integrity within geographically distributed data;
* Use the documented API to provide integration with any other information systems.

# 

# 5. ADMINISTRATIVE INFRASTRUCTURE

## 5.1. System location

The system should be hosted in a cloud service within the development and implementation period. In order to operate the system in accordance with the operating regulations, the system should have separate environments listed in the table below.

|  |  |
| --- | --- |
| **Environment** | **Description** |
| PROD | Productive environment |
| STAGE | Environment that duplicates the productive environment in terms of configuration and functionality.  Designed for acceptance testing and incident replay |
| DEV | Environment for developing and testing functional prototypes. Used for intermediate testing of new features |

## 

## 5.2. Incident Backup and Recovery System

System development should include system backup mechanisms, backup rules, and incident recovery instructions. System recovery includes:

* Recovery of the system and application software configurations;
* User information recovery;
* Data recovery.

## 

## 5.3. Connection to the Logging System

As part of development the required connection to the logging system should ensure that the following events are logged:

* Starting/stopping individual system services;
* Login/logout security events;
* Errors in the system operation, such as communication, data integrity in the system, unpredictable delays in information processing;
* Critical events in the monitoring system (critical amount of memory, disk space, etc.);
* System usage events (receipt of request, result of the request processing and logging the violation of the level of threshold requests for the implementation of preventive measures against unauthorized leakage);
* Any other security events.

Logging should include the ability to use the ELK Stack (timestamp in logs; the ability to use filebeat/journalbeat and/or write to the rsyslog port; structured logs and/or the availability of a mapping template.

## 5.5. Connection to the Monitoring System

As part of the development, it is necessary to connect to the monitoring system that provides operational monitoring of the operation of all system elements (quantity, current state, etc.), including CPU, RAM, Disk I/O and free space on the disk system, load, and availability of communication channels.

## 

# 6. TECHNOLOGY STACK

Versions of programming languages, frameworks, libraries, and system services should have an EOL (end of life) no earlier than the contract signing date + 12 months.

The web part of the system should be compatible with popular web accelerators, such as Nginx, Varnish, and Cherokee.

Application servers, possibly in addition to databases, should run in docker containers, in a docker-compatible environment (<https://www.docker.com/>).

Database should be built in cluster mode, with the expectation of avoiding the possibility of a split-brain failure.

The system should use technologies, tools, and database systems, logging, etc. with open source only. You need to use the Git Family Service to store the system code.

The Products the system should be built on:

* UNIX open source operating system with the version defined by developers as Long Term Support (LTS);
* Management systems Git, Jira, Confluence or analogues;
* Work between client and server elements should be implemented using the RESTfull API only;
* Open source database for a central data warehouse;
* REST compatible open source object data warehouse;
* Integration with third parties (registries, databases, web services, etc.) is carried out using the Data Exchange bus.

All system services, such as application servers, data processing bus, main database, load balancers, Key/Value database, caching services, and any other services, should meet the requirements as follows:

* High Availability;
* Fault tolerance;
* Redundancy;
* Vertical and horizontal Scaling ability.

The data exchange bus is built:

* Based on Apache Kafka Message Broker (or analogue) using guaranteed message delivery, subscription and streaming methods, and subscriber groups;
* With built-in conversion of inter-exception programming languages and hierarchical error codes;
* With distributed processing of functional and technical errors;
* With different dialects support;
* With relevant logging to collect statistics before and after queries;
* Verification and validation of input data;
* On intermediate databases with short-term storage of received messages and their post-processing;
* Based on the microservice architecture.

The data exchange bus is integrated and provides various types of file access, such as:

* Public access;
* Private access;
* Shareware access (for example, public access for identified users);
* Short-term access (time based private access).

## 

# 7. SYSTEM INSPECTION AND ACCEPTANCE PROCEDURE

The following organizational measures are planned to take into account and respond to changes in the process of detailing and implementing the system requirements:

* The system development methodology – Agile, Scrum with a 1 week sprint;
* Level of detail requirements – user history to the part of the system features with sections – goal, level, preconditions, basic requirements, endpoints, UX/UI design, and acceptance criteria;
* Expected system development term for iteration "Basic risk setup & analytics": no more than 6-7 months, starting from the contract date, with the following estimated key milestones in system development and delivery:

|  |  |
| --- | --- |
| **Key milestone** | **Approximate time** |
| Clarifying and detailing requirements | throughout the entire development cycle |
| Development and validation of system concepts | no more than 1,5 month |
| Development and delivery of systems | no more than 5 months |
| Testing and adapting systems | 1 months |

The contractor’s works will be divided into the following Project iterations:

|  |
| --- |
| The scope of first TR is iteration "Basic risk setup & analytics" |

|  |  |  |
| --- | --- | --- |
| **Iteration** | **Stage** | **Stage description** |
| **Basic risk setup & analytics** | **Scope of Work** | Development of scope of work |
|  | **RMS - Operational** | 1. Risk profile Registry with up to 3 filters and  2. CRUD Risk profile card (up to 20 attributes)  3. Risk profile coding based on chosen programming language (python)  4. Risk profile lifecycle (up to 3 statuses)  5. Risk profile testing (basic)  6. Integration to Prozorro |
|  | **RMS - Backoffice** | 1. User management  2. Role access |
|  | **RMS - Risk Profiles (coded)** | Up to 20 risk profiles coded within RMS functionality |
|  | **RMS - Non-functional requirements** | 1. The interface language is only Ukrainian  2. System load up to 50 requests/c with support for horizontal and vertical scaling  3. Browser support - only Google Chrome  4. Web version support for Desktop type screens only  5. Logging of actions in the System (login, change of data, deletion of data with fixation of the author, date, time and name of the object without details) with storage of logs for up to 3+1 = 4 years with the use of an ELK solution (for example, Kibana)  5. Storage of System data for 4 years (3 years - the validity period of initiating a legal action + 1 year for the possibility of responding in the event of an application on the last day of the 3-year period for initiated legal action) |
|  | **RMS - Documentation** | 1. Terms of reference for the development of System modules;  2. System and Administrator user manual;  3. Developer documentation:  - Description of the System architecture;  - АРI documentation for the developer, which is generated automatically:  -- Has a list of supported methods and their description;  -- Has a list of request parameters and their description;  -- Has a list of response attributes and their description;  -- Allows emulating a request/response with a description of the response status (success, error);  4. Test program and methodology;  5. Test protocol and report to the protocol;  6. Training program and training materials for users of different roles. |
|  | **BI Basic** | Internal BI with:  1. Up to 5 dashboards with different categories, **based on default BI Styles**:  - Procedural Violations by the Organization  - Verification of Procurement Participants  - Results of Procurements (for different regional Services and the Agency on the whole, for different periods, for different CPV groups or selected procedures)  - Results of Contract Execution |
| **Advanced RMS and BI** | **Advanced RMS, BI & Integrations** | 1. User feedback's upgrades (e.g. notifications, type of filters for RMS, UI for dictionary management, using e-signature for legal actions)  2. Integrations (EDR, DREAM, Big Recovery Program, AMKU)  3. Risk profile enhancements (e.g. adding new functions to coding, expand risk rules types, etc)  4. BI enhancements (e.g. adding 1-2 new dashboards, adding up to 10 new data parameters, etc)  5. Basic setup of infrastructure toolkit for monitoring and logging purposes |

To accept the system for operation, an acceptance commission should be created consisting of the Agencies’s representatives.

Contractor transfers the exclusive rights to the developed software to EUACI. EUACI, in turn, will transfer exclusive rights to the Agency.

When the system is put into operation, it should pass acceptance tests to determine its compliance with the terms of reference.

Based on the results of acceptance tests, a report is drawn up, which contains a conclusion on the degree of compliance of the subsystem with the requirements of the terms of reference and a decision on its acceptance into commercial operation.

The software being supplied should be installed and configured on servers specified by the Agency.

The system should be provided with the documents as follows:

1. Functional description of the system.
2. System user manual.
3. System administrator manual:
   1. Guidelines on deploy, update, rollback.
   2. Manual on data backup and recovery.
   3. Helm charts and/or ansible playbooks to pp4.
   4. SDLC policies and procedures in the form of the document and pipelines in Gitlab СI/CD with the use of GitLab runner.
4. Developer documentation:
   1. System architecture description:
      1. Detailed L2/L3 system topology as a diagram.
      2. ERD diagram.
   2. Guidelines on deploy, update, rollback.
   3. API documentation for the developer, which is automatically generated:
      1. Has a list of supported methods and their description.
      2. Has a list of query parameters and their description.
      3. Has a list of response attributes and their description.
      4. Allows emulating a request/response with a description of the response status (success, error).
5. Test program and methodology.
6. Test protocol and report to the protocol.
7. Training program and training materials for users of different roles.