TECHNICAL SPECIFICATIONS

1. Subject of the tender

Subject of the tender is development and implementation of an electronic platform for identification of systemic anomalies in public procurement and oversight of public expenditures.

In conjunction with the project »Improving Governance and Transparency in Uzbekistan«,[1] contracting authority aims to develop platform for identification of systemic anomalies in public procurement and monitoring of public expenditures, thus identifying and eliminating corruption risks in that area. The main functionality of the platform shall be to detect and visualize various anomalies in public procurement (depending on available data). The platform shall be developed to support structural reforms; however, it shall also be able to support concrete criminal investigations.

2. Contracting Authority requirements

The successful tenderer will be required to develop and implement a new electronic platform enabling/including:
- obtain the data or at least the structure of the data,
- data recognition, understanding and preprocessing the data,
- repository and hosting server setup,
- development of tools for analysis and visualisation of collected data (including ML/AI),
- development of tools for data importing,
- design and UX of the application,
- data export implementation,
- implementation of authentication mechanisms,
- implementing cybersecurity measures,
- testing,
- user manual and technical manual in ENG (created by successful tenderer).

Setting up the production server in Uzbekistan and importing the real data will be done by Uzbekistan local technical partners. However, the selected tenderer will be required to provide assistance in this respect.

In the context of the development and implementation of the new platforms, the selected contractor will be responsible for carrying out the following activities:
- repository and hosting server setup, basic project environment settings and automatic deploy pipeline implementation;
- database Setup and Management:
  o design and implement database schemas,
  o optimize database performance and query efficiency,
  o set up database backups and recovery mechanisms,
  o implement data migration strategies for seamless updates;
- data preprocessing:
  o clean and normalize raw data for consistency,
  o develop data validation scripts to ensure data integrity,

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[1] https://www.giz.de/en/worldwide/129655.html

- o implement data transformation pipelines for analytics readiness,
  - o automate data extraction, transformation, and loading (ETL) processes;
- API Development and Integration:
  - o design RESTful or GraphQL APIs for data access and manipulation,
  - o implement third-party API integrations for extended functionalities,
  - o ensure robust error handling and logging mechanisms,
  - o secure APIs with appropriate authentication and authorization protocols;
- performance Optimization:
  - o conduct load testing to identify and address bottlenecks,
  - o implement caching strategies to improve response times,
  - o optimize server configuration for better performance,
  - o monitor and log system performance metrics for continuous improvement;
- infographics and Data Visualization:
  - o design interactive charts and graphs using libraries,
  - o create dynamic dashboards for real-time data visualization,
  - o implement responsive design to ensure compatibility across devices,
  - o ensure visual consistency and accessibility in data presentation;
- search Functionality:
  - o implement full-text search capabilities for efficient data retrieval,
  - o develop advanced filtering and sorting options for search results,
  - o optimize search algorithms for speed and accuracy,
  - o integrate search with user-specific preferences and history;
- interactive features:
  - o implement interactive forms with real-time validation,
  - o develop drag-and-drop interfaces for enhanced user engagement,
  - o integrate social media sharing and interaction features,
  - o provide customizable user settings and preferences;
- testing and quality assurance (classical unit test, manual testing);
- deployment;
- preparing technical documentation;
- final presentation of the web platform.

3. Deadlines

The selected tenderer will be required to start performing the works within 8 days (if not agreed otherwise) of the signing of the contract.

Development and implementation will take place in several phases which are set out in more detail in the model contract.

The development and implementation of the new platform must be completed **within 24 months** of the start of the works.