

Sierra Leone Electronic Government Procurement (e-GP) Implementation Strategy

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Abbreviations

1. APP: Annual Procurement Plan
2. COTS: Commercial Off The Shelf
3. e-GP: e-Government Procurement
4. GoSL: Government of Sierra Leone
5. IFMIS: Integrated Financial Management Information System
6. ISO: International Organization for Standardization
7. IT: Information Technology
8. NASSIT: National Social Security and Insurance Trust
9. NCRA: National Civil Registration Authority
10. NPPA: National Public Procurement Authority
11. NRA: National Revenue Authority
12. O & M: Operations and Maintenance
13. PIU: Project Implementation Unit
14. RFP: Request for Proposal
15. SSL: Secure Sockets Layer

1 Preamble

The Government of Sierra Leone (GoSL) has taken the initiative to implement an e-Government Procurement (e-GP) system, under the “*Accountable Governance for Basic Service Delivery*” project. A unified e-GP platform will be established, in which all the procurement undertaken by the government agencies in Sierra Leone will be processed. The strategy followed by the GoSL to implement this unified e-GP platform is explained herein, as under:

- a) Project Implementation Unit
- b) Roll-out Approach
- c) Change Management
- d) IT security
- e) Roles and responsibilities of the key stakeholders
- f) Risks and remedial measures

This document shall be read in conjunction with the following two reports:

- a) Sierra Leone Electronic Government Procurement Business Process Reengineering and
- b) Sierra Leone Electronic Government Procurement Policy Framework.

2 Project Implementation Unit

A Project Implementation Unit (PIU) will be established under the National Public Procurement Authority (NPPA) to manage the day-to-day operations of implementing the e-GP system. The PIU will act as a liaison between the e-GP vendor and the end users (i.e., contracting authorities and the vendors) of the e-GP system. As a Commercial Off The Shelf (COTS) e-GP product will be customized and deployed, the PIU will have staff qualified to manage the deployment of the product. In addition, the team will comprise of experts with an excellent understanding of the GoSL procurement practices, training and change management staff and system administrators. A qualified project manager will be hired to manage the PIU operations.

Refer below for the envisaged team composition:

- a) Project manager – 1
 - a. Operations manager – 1
 - i. Functional consultant – 1
 - ii. Trainers – 2
 - iii. Hand-holding support – 4
 - iv. Telephonic help desk – 2
 - v. Admin and accounts – 1
 - b. Technology consultant – 1
 - i. System administrators – 2
 - ii. User administrator – 1
 - iii. Developers (as required)

The GoSL proposes to fill-out these positions through contract hire or by deputation of government staff from NPPA or other government agencies.

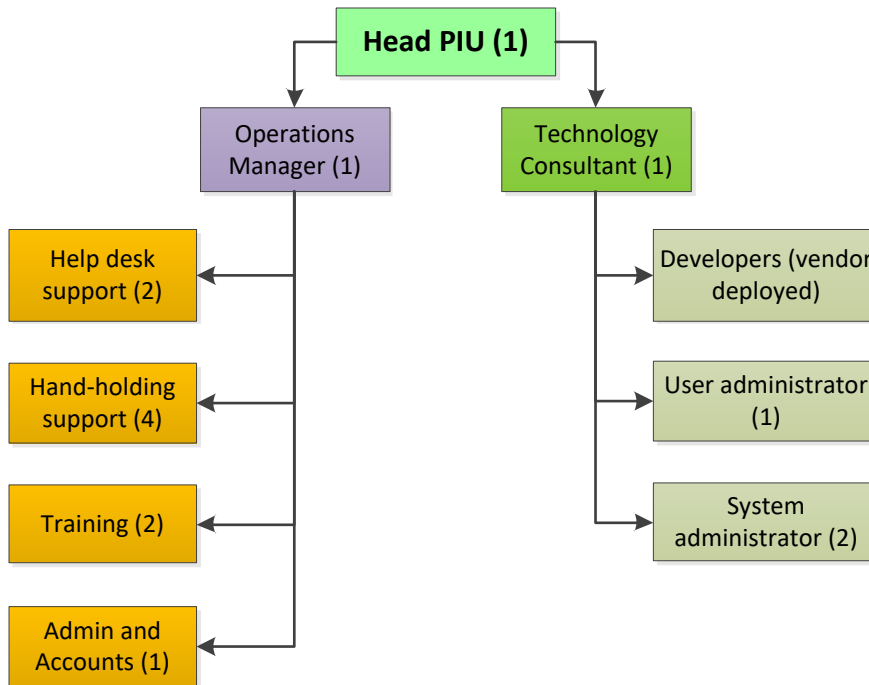


Figure 1: Project Implementation Unit Composition

The roles and responsibilities of the PIU are listed below:

1. A single point of contact for end users (i.e., government users and contractors) of e-GP system and the e-GP product vendor.
2. Registration of government users and contractors in e-GP platform in accordance with the approved procedures.
3. Work closely with the e-GP product vendor and provide them with detailed inputs required for implementation of the e-GP system.
4. Select the IT security auditor and provide detailed inputs required for auditing the e-GP system.
5. Study the procurement practices of contracting authorities in detail and do the needful to onboard them in e-GP system.
6. Identify process reform opportunities and advise on standardization of procurement processes across the procuring entities.
7. Convene the meeting of the Steering Committee at regular intervals and obtain the directions required for expedited implementation of the e-GP system.
8. Identify gaps in the IT and Network infrastructure among the contracting authorities and take suitable remedial measures to address the gaps in the infrastructure.
9. Provide training for both the procuring entity users and the vendors.
10. Provide hand-holding support to the procuring entity users.
11. Establish a help desk facility for end users of the e-GP system and ensure its smooth functioning.
12. Administer rights and privileges assignment to the various users of the e-GP system.
13. Review and approve the vendors seeking to register in the e-GP system.
14. Responsible for the security of the e-GP system and the safety and security of data stored in the e-GP system.
15. Marketing the e-GP system to prospective end users and expedite its adoption.
16. Create publicity and awareness about the e-GP system among all the key stakeholders.
17. Address grievances raised by the procuring entity representatives and the vendors.

18. Coordinate with external IT system owners as required for integrating the e-GP system with their IT systems.
19. Actively manage the user acceptance test of the e-GP system.
20. Process payments due to the e-GP software vendor, for implementing and managing the e-GP system.

3 Roll-Out Approach

A phased approach will be adopted to roll-out the e-GP system in the GoSL. The e-GP system functionality is broadly divided into two phases and a total of 44 features. In the first phase, 26 features will be implemented and the remaining 18 features are planned to be implemented in the second phase. The key e-GP system functionality covered in phase 1 are Annual Procurement Plan, vendor registration and the e-Tendering model with the widely used single envelope procedure. In phase 2, contract management module will be implemented along with the Request for Proposal (RFP) procedure.

In order to effectively test the e-GP system functionality, it is proposed to identify a mix of 5 – 10 procuring entities, selected using a combination of:

- a) Agency type: Budget or state-owned enterprise
- b) Procurement type: Goods or works or Services.
- c) Sector participation: Health, Education, Energy and City council.

The NPPA Board, acting as the Steering Committee, will mandate the selected procuring entities to use the e-GP system to process all procurement falling under a certain prescribed threshold from a certain date. An indicative list of agencies selected for piloting the e-GP system is provided in the table below:

S.no.	Agency name	Features	Date
1	Ministry of Basic and Senior Education (MBSSE)	Phase 1	Launch date
2	Ministry of Senior Secondary	Phase 1	Launch date
3	Ministry of Health and Sanitation	Phase 1	Launch date
4	Integrated Health Projects Administration Unit (IHPAU)	Phase 1	Launch date
5	Freetown City Council	Phase 1	Launch date
6	Sierra Leone Roads Authority	Phase 1	Launch date
7	Electricity Generation and Transmission Authority	Phase 1	Launch date

Figure 2: List of pilot agencies

The functionality covered under phase 1 are Annual Procurement Plan (APP), Tendering, Vendor registration and integration of the e-GP system with external IT systems such as IFMIS, NRA, NASSIT and NCRA. As the system stabilizes, the NPPA board will on-board new procuring entities at regular intervals and gradually expand the threshold to include all the procurement and the entire e-GP system functionality. The objective is to establish a unified end to end e-GP system, that will be adopted by all the government agencies in the country to process 100% of the procurement. For the procurement processed online, manual bid submission will be disallowed.

4 Change Management

The e-GP project requires significant change management effort as several thousands of procuring entity users and vendors will need to shift to electronic procedures for processing their procurement. These users will need to be trained on the e-GP software. Further, there must be an easily accessible

facility available to the end users to contact to express any concerns or challenges they may have in using the e-GP system.

Recognizing the importance of change management, the GoSL intends to take several initiatives to onboard the users onto the e-GP system as detailed below:

- a) Establish two training rooms in which hands-on e-GP system training will be regularly provided to both procuring entity users and the vendors, free of charge.
- b) A telephonic helpdesk will be established where the procuring entity users and the vendors can contact them to express the challenges faced by the end users in using the e-GP platform. Any issue reported to the helpdesk will be continuously tracked until it is resolved.
- c) Despite getting trained, many procuring entities won't feel comfortable in using the e-GP system from their respective offices. To address this lack of comfort, it is proposed to engage hand-holding specialists, who will visit the government offices on a need basis and guide them in using the e-GP software.
- d) Efforts will be made to create awareness among the end users about the e-GP system concept and its envisaged benefits.
- e) Videos about the e-GP system will be created and uploaded in the e-GP system as a user guide to the end users. These videos will highlight the benefits of using the GoSL e-GP system.
- f) User manuals will be created, kept up to date and loaded onto the e-GP platform for free public view.
- g) A few procuring entities lack the basic IT infrastructure (e.g., multi-function printer, computer and the Internet) in their offices, required to connect to the e-GP system. The GoSL will address this gap by centrally purchasing the required IT infrastructure in bulk and delivering them to the end users in need.
- h) Knowledge sharing workshops must be organized to enable vendors and government users to exchange feedback about their experiences in using the e-GP system.
- i) Media advertisements must be released to advise the vendors and the general public about the initiative being taken by the GoSL to implement the e-GP.

5 IT Security

The e-GP is a transactional system in which procurement valued at millions of leones get processed online. As there is competition among the vendors to win a tender, bid confidentiality is of immense importance especially until the expiry of the bid submission due date. Also, there is a need to store the e-GP data safely and securely such that only the authorized users have access to it. Since the e-GP is an internet-based system, data transmission between the end users and the e-GP server happens over the Internet. The security of the data during the transmission needs to be handled as well. Also, many new ways of hacking an internet-based system are being invented. The e-GP system must be in-built with adequate security measures to ensure its safety.

Refer below for the initiatives taken to ensure the IT security of the e-GP system:

- a) The servers and storage of the e-GP system will be deployed in the data centre of the Ministry of Finance in Freetown, Sierra Leone.
- b) The e-GP system will be subjected to an IT security audit by a third-party audit agency. This agency will be required to prepare the audit guidelines based on the best practices defined in globally known IT security standards such as ISO 27001 and Top 10 Open Web Application Security Project. With reference to this guideline, the auditor will verify compliance of the e-GP system. The bidding document prepared for the selection of the e-GP software vendor mandates the vendor to suitably modify the software – within the quoted bid price – to address the concerns raised by the auditor.

- c) The e-GP vendor is required to purchase and install a valid Secure Sockets Layer certificate to secure the data while getting transported over the Internet.
- d) A provision is added in the bidding document, requiring the e-GP system vendor to encrypt the bid prices using asymmetric keys (i.e., public key infrastructure). Asymmetric key encryption of bids provides a higher level of security as compared to the symmetric key. If there is a need to launch asymmetric key encryption before the PKI infrastructure is ready in Sierra Leone, the GoSL can require the e-GP vendor to implement an e-GP specific PKI server.

6 Implementation Timelines

The end-to-end e-GP system will be implemented in 2 phases. The core procurement functionality including the APP, e-Tendering, vendor registration and integration with the NRA, NASSIT, IFMIS and NCRA will be implemented in phase 1, within a period of 1 year of signing the contract with the e-GP software vendor. Post the user acceptance of the system, "Go-live" will be announced. Then, phase 2 features will be implemented during the operations and maintenance (O&M) phase. The O&M phase is initially envisaged for a period of 3 years, during which time the e-GP vendor will be required to maintain the system in conformity with the service levels laid down in the bidding document.

A baseline study will be conducted before the system launch to record performance data on the performance of the e-GP system. The same study will be repeated a few years later to evaluate the impact of the e-GP system on the overall performance of the public procurement function. Refer below for a sample list of metrics which will be gathered during the study:

- a) Average time taken to conclude a procurement
- b) Average number of bidders which participated in a tender
- c) Number of visits made by the vendors to government offices for participating in a tender
- d) Vendors' perception about transparency in government procurement.

Besides the above, refer below for the key milestones and the envisaged timelines in the e-GP project:

- a) Date of signing of the contract: T
- b) On-boarding the 3rd party IT auditor: T + 120 days
- c) A report on the baseline study: T + 180 days
- d) Launch of the phase 1 features: T + 210 days
- e) Final report by the 3rd party auditor: T + 340 days
- f) User acceptance of the e-GP system: T + 365 days (G)
- g) Maintenance of the e-GP system: G + 3 years.
- h) Repeat of the baseline study: G + 30 months

A pictorial view of the work plan is provided below:

Work Plan for Implementation of e-GP Software in the Govt of Sierra Leone																		
S.no.	Activity Description	Timeline in Months																
		T	T+1	T+2	T+3	T+4	T+5	T+6	T+7	T+8	T+9	T+10	T+11	T+12	T+24	T+36	T+45	T+48
1	Signing of the Contract	█																
2	Deployment of Project Manager		█															
3	Constitution of OA Committee		█															
4	Submission of Security audit guidelines			█														
5	Prototype design for Phase 1 features				█													
6	Deployment of server infrastructure in Data Centre				█													
7	Audit of data centre infrastructure					█												
8	Initial prototype of Phase 1 features					█												
9	Enhanced prototype of Phase 1 features						█	█										
10	Report on infrastructure audit by 3rd party auditor							█										
11	Training on Phase 1 features								█									
12	Launch of Phase 1 software									█	█	█						
13	SLA automation tools deployment										█							
14	Documentation about software												█					
15	3rd party audit report on SLA automation													█				
16	Load or performance testing by 3rd party audit agency														█			
17	Report on performance testing															█		
18	Report by 3rd party on functional compliance																█	
19	Go-live acceptance by OA committee																	█
20	Implementation of Phase 2 features																	█
21	Operation & Maintenance Phase																	█
22	Exit / Transition Management																	

Figure 3: Workplan for the implementation of the e-GP system

7 Key Roles and Responsibilities of the Stakeholders

7.1 National Public Procurement Authority (NPPA)

- Provide the functional inputs required for implementation of the e-GP system
- Review the software and related documents and provide feedback to the e-GP vendor in a timely manner
- Select and engage a 3rd party audit agency to conduct an IT security audit of the e-GP system
- Act as a liaison between the e-GP software vendor and the selected IT security audit firm.
- Identify business process reform opportunities, which can be implemented along with the introduction of the e-GP system.
- Establish and manage the e-GP telephonic helpdesk.
- Provide training on the e-GP system features for government users and vendors.
- Conduct User Acceptance Test of the e-GP system.
- Provide hand-holding support required by the procuring entity representatives.
- Actively manage and monitor the contract with the e-GP software vendor.
- Take measures to ensure timely implementation of the software.
- Coordinate with the e-GP vendor and take measures to verify if the e-GP system data is regularly backed up.
- Develop the technical expertise required to manage and administer the e-GP software.
- Develop and implement e-GP related policies such as system malfunction policy and privacy policy
- Prepare e-GP regulations and the e-GP specific conditions to be included in the standard bidding documents for the procurement processed online in the e-GP system.
- Continuously enhance the adoption of e-GP system to cover 100% of the government procurement.
- Grievance redressal from the end users about all e-GP related matters.

- r) Regularly brief the NPPA board at regular intervals on the progress made in the implementation of the e-GP system.
- s) Verify whether the e-GP system confirms to the service levels laid down in the contract with the e-GP software vendor.
- t) Identify the global best practices in the e-GP domain and take measures to incorporate them in the software.

7.2 e-GP Software Vendor

- a) Customize and deploy the e-GP software in compliance with the functional and technical requirements specified in the bidding document.
- b) Supply, install and manage the server-side infrastructure required to host the e-GP system.
- c) Ensure trouble free operation of the e-GP system, in compliance with the service level requirements specified in the bidding document.
- d) Prepare the user manuals explaining the e-GP system functionality.
- e) Providing training to the e-GP PIU staff on administering the e-GP system.
- f) Deploy a qualified project manager on site for the entire duration of the project.
- g) Provide the documentation required by the auditor and make changes to the software as required for successful completion of the third-party IT security audit.

8 Risks and Remedial Measures

The risks envisaged and the remedial measures planned to address these risks are explained herein:

- a) Delays in project implementation: The software implementation projects are usually plagued with delays and the e-GP project is also susceptible to such a risk.
 - a. Remedial measures
 - i. The establishment of a PIU with qualified staff is proposed. If the PIU could take ownership of the project and drive its deployment, delays in the project implementation will get minimized.
 - ii. In a product-based deployment, which is the implementation methodology opted by the GoSL, most of the system features will be readily available. Hence, the time taken to implement the system will be less and consequently the chance of delays gets minimized.
 - iii. The NPPA board will review the project at regular intervals and provide suitable directions to ensure timely implementation of the software.
- b) Software performance issues: Often, end users complain about slow loading of pages or unreliable system performance. Both government users and the vendors find performance issues challenging.
 - a. Remedial measures:
 - i. As per the bidding document, the e-GP software vendor is required to maintain and operate the e-GP system in compliance with a set of service levels as listed below. If the system does not confirm to these service levels, penalties will be imposed on the software vendor:
 1. System availability at 97%
 2. Page loading time must be less than or equal to 5 seconds
 3. Critical faults must be resolved in less than 6 hours
 4. Non-critical faults must be resolved in less than 2 working days
 5. The system must be capable of handling 500 concurrent connects to the server and 1000 transactions per hour.

- ii. The e-GP software vendor is required to size the server infrastructure required to deliver the system in compliance with the laid down service levels. If hardware upgrade is required to improve the system performance, the vendor shall pay for it as a part of its quoted price.
- c) Users resist adopting the e-GP system: It is quite common for both government users and vendors to resist using the e-GP system, fearing change or due to lack of understanding of the e-GP system.
 - a. Remedial measures:
 - i. The importance of change management is well understood. Hence, a lot of emphasis is placed on change management initiatives such as the establishment of the telephonic help desk, training infrastructure and the provision of hand-holding support. Also, continuous efforts will be made to create awareness about the e-GP system. Refer to Section 4 of this report for further details about the change management initiatives proposed.
 - ii. In addition, the NPPA board may decide to mandate the adoption of e-GP system for certain procurement. Thus, the change from the manual system to the electronic system will be enforced in a phased manner.
- d) Ensuring security of the e-GP system: The government users and especially the vendors express concern about the confidentiality and security of their bids submitted online. If the bids get compromised, the trust in the e-GP system gets adversely affected.
 - a. Remedial measures:
 - i. The engagement of a third-party IT security audit agency is envisaged. This agency will audit the system against the global standards for IT security and advise the changes to be made to the software to ensure its security.
 - ii. The bidding document has provided the option for asymmetric key encryption of bids. Also, the use of SSL for transport layer security is mandated.
- e) Sustainability of the e-GP system: As the e-GP system will eventually replace the manual system, it needs to be perennially maintained and upgraded in sync with the latest technology developments. For this, the project needs to be continuously funded.
 - a. Remedial measures:
 - i. The funding required for implementing the core system functionality and its maintenance for 3 years is provided for under the “*Accountable Governance for Basic Service Delivery*” project.
 - ii. Under the guidance provided by the NPPA board, the vendors will be required to pay a nominal fee for vendor registration and bid submission. The fee thus collected can be used to self-sustain the e-GP system.