



**Government of the People's Republic of Bangladesh**

**ICT Division**

**ICT Tower, Agargaon, Dhaka**

**Access to Information-II Programme**

**REQUEST FOR PROPOSAL**

**FOR**

**“Enhancement and Maintenance/Change Management of Eksheba Uddokta e-Government Solution”**



**INVITATION FOR PROPOSAL NO: 56.42.0000.003.07.094.18.1052**

**ISSUED ON: 23 DECEMBER 2018**

## **Section 6. Terms of Reference (TOR)**

### **“Enhancement and Maintenance/Change Management of Eksheba Uddokta e-Government Solution”**

#### **Introduction**

---

E-Governance is the public sector’s use of information and communication technologies with the aim of improving information and service delivery, encouraging citizen participation in the decision-making process and making government more accountable, transparent and effective. The Knowledge Base of Innovative E-government Practices requires Innovative e-government solutions, services and applications. The Knowledge Base does not promote one solution over another, but rather highlights e-government practices that place the citizen in the forefront. To bring transparency, dynamism in the administrative process and also to improve the efficiency, Bangladesh government has already launched several e government solutions.

The Government of Bangladesh has taken an initiative to revamp the Eksheba Systems to provide a more structured database management and robust monitoring reports to the all stakeholders related with Digital Centers. The purpose of this project is to make the Union Digital Center (UDC) / City Digital Center (CDC) / Pourashava Digital Center (PDC) a robust service provider system and reporting of all the services provided by the UDC/CDC/PDC, which will be monitored by the Ministry, Division, and District and Upazila level offices.

#### **Business Case & Business Realization**

---

Under the scope of the Terms & Conditions, selected company will be awarded for the Revamping of Eksheba System under the supervision of a2i and provide 2 years application and server maintenance and support services from the date of agreement signing for the System as required under a2i supervision and under the close supervision of the a2i Programme. The project manager will receive the assigned task understanding the detailed scope of work that will be defined by a2i and mentioned in this ToR under below category.

1. To review the existing Eksheba application and preform Enhance of Eksheba as per project requirements.
2. Develop Mobile Application (android version) for Eksheba Systems User especially entrepreneurs and Citizens.
3. Provide support & maintenance service.

#### **Existing Features of Eksheba Systems:**

---

##### **Administrative Module**

1. The Eksheba system has comprise of a dashboard which display the following:
  - Slider of important information.
  - A list of popular services.
  - A graph displaying the income of last seven days.

- A graph displaying the recent services provided.
2. The system has the provision for users to view their profile, update their profile and change password.
  3. The System have role-based access control system and ensure application level security creating necessary controls in the software.
  4. Design and develop both operational and monitoring dashboards for different layers of users with configurable presentation and configurable layer definition.
  5. Design and develop functional and analytical reports based on due study on the user requirements.
  6. Provided Data Import/Export facility by UI and ensure data portability.
  7. Added necessary controls and mechanisms for ensuring system interoperability.
  8. Ensure full cloud compatibility and international IS control compliance in the software system to address any acceptable test and audit on the system.
  9. The system allow the users to manage the system via the System Management module in which the users able to create, edit & delete menus, create & edit statuses & create, edit and delete API clients.
  10. The system allow the users to manage users within the system via the User Management module. The users able to create, edit and delete user groups and users and also manage user group permissions.
  11. The system has the provision for users to manage banks via the Bank Management module that allow the user to create, edit and delete banks and bank accounts information.
  12. The system allow the users to manage wallets via the Wallet Management. The users able to approve or deny wallet load request, approve or deny wallet withdrawal, confirm wallet withdrawal & approve or deny Sonali Prepaid requests.
  13. The system allow the users to manage locations within the system via the Location Management module. The users able to create, edit and delete Divisions, Districts, Upazilas, Unions, Municipals, Municipal Wards, City Corporations, City Corporations Wards and Centres.
  14. The system has the provision for a dropdown list that will allow the users to create, edit and delete Education Level, Training, Security Question, Modem and Connection Type.
  15. The system allows the users to manage centres within the system via the Centre Management module. The users able to create, edit and delete category and register centres along with editing of centres.
  16. The system allows the users to manage entrepreneurs within the system via the Entrepreneur Management module. The users able to approve UNO & a2i entrepreneurs, hold entrepreneurs and view entrepreneur details.
  17. The system allows the user to manage services within the system via the Service Management module. The user able to create, edit and delete service category, offline service, service assign management. The user also able to approve or deny service request, new service request, organization request and online service request.
  18. The system has the provision for a dynamic report engine that will allow the user to create dynamic reports and also edit them. The user also able to active or inactive reports.
  19. The system allows the user to manage website via the Website Management module. The user able to create, edit and delete Website Services, Media Gallery,

Help Desk, Opinions, Website Notices, Website Notice Letters, Website Links, Contact Information, Website Stories and also create SMS and send bulk SMS.

20. This system has provision for API Management & Service Integration through API. The system has self-service registration panel for 3rd party services and Passing Callback URL as service initiator.
21. Service charge for services of Eksheba (will be impose in future for a2i) option will be available in the proposed systems.

**Entrepreneur Module:**

22. The entrepreneur system comprise of a dashboard which display the following:
23. A graph displaying the income of last seven days.
24. A graph displaying the last seven days services.
25. The users able to view their profile, update their profile, change password and change secret question.
26. The user has the provision to attach service, provide online service, request for available services and request for new service.
27. The users able to upload offline service report, view service wise income report and online service report.
28. The users able to update investment information.
29. The users able to provide Sonali Prepaid Card information and update Sonali Prepaid Card information.
30. The user has the provision to manage notices and Q&A's.
31. All Post Center (Post Office, Sub Post Office)) of Bangladesh are able to access EKSHEBA and provide all the service that is provided by UDC, PDC & CDC.
32. E-Post Center Registration System is developed for all the Post Centers for registered in the EKSHEBA.
33. A comprehensive user role management system is developed as per the Post Office Organogram that falls under the Jurisdiction of Post Office including (Division, GPO and other offices that falls under the Jurisdiction of Post Office).
34. There is a user-friendly E-Post Center Registration Approval System, through authorized person able to approve all E-Post Center Registration request.
35. The system have a well-structured report of all the Registered E-Post Center like number of E-Post Center, number of E-Post Center Approved, number of services provided by each E-Post Center, Revenue Generated by each E-Post Center, this reports is segregated by Division, GPO and other graphical location that falls under the Jurisdiction of Post Center.
36. Service Data Upload System for E-Post Center.
37. Systems have user Role based wise reporting system.
38. There is E-wallet Management with following features.
39. A well-structured E-Wallet management system is developed for the digital center, to avail all kind of online services. The E-Wallet manages all kind of transaction between A2i and the Digital Center.
40. The wallet management system support followings:
41. Service Base Cost
42. EKSHEBA Agent Commission
43. A2I Commission.
44. System allows one wallet for One Center.
45. System allows Manually/Online Payment to A2I Account.

46. System allows a2i administrator can approve, reject or later block/suspend wallet of any EKSHEBA center including UDC, PDC & CDC.
47. System allows to Agent for requesting withdrawal money from wallet.
48. System checked when any agent initiate a service, at first it will check his/her center wallet have sufficient amount to provide that service.
49. System keep record for all the financial transaction (even financial transaction done by other medium) as 'service base amount' into 'EKSHEBA System'.
50. The system have a Financial Accounting System:
51. The system have a complete financial accounting solution to manage all kind of financial transaction including inflow, outflow, accounts head etc.
52. The system have a complete double entry accounting provision to track the entire transaction flow from different service head.
53. The System have the facility for a2i and user of Digital Center to monitor and report a complete financial picture including inflows (received from different service head with detail breakdown) and outflows.
54. The System ensured the financial transparency and accountability of A2i and Digital Center.
55. The System have Role based accessibility, reports, dash board for different stakeholders like a2i & Digital Center.
56. The System keep all transaction log.
57. The System incorporated the Service tracking facility for financial activity.
58. The System have the service for Block any center's wallet amount.
59. The System have the service for periodically disburse agent commission into agent's bank account (supplied during wallet registration) or agent's wallet as per agent request.

#### **Portal:**

60. From the Eksheba portal the users able to do the following:

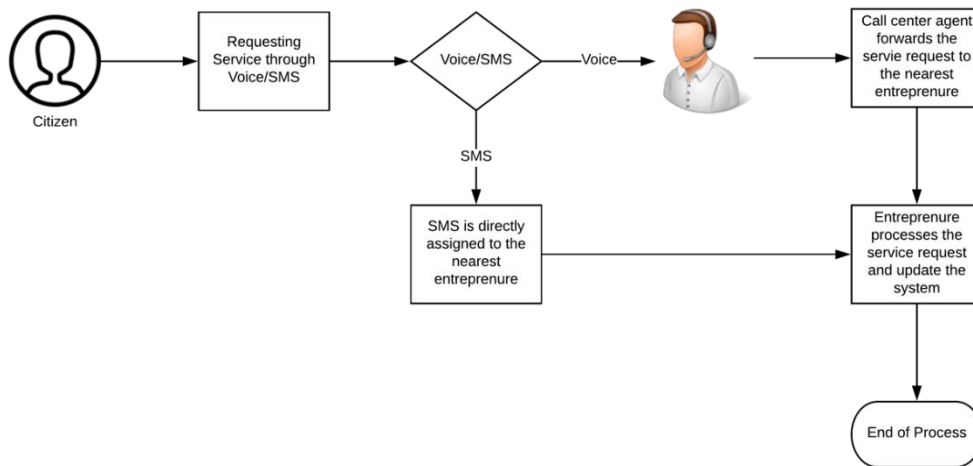
- Register as an entrepreneur.
- Register a service providing organization.
- View service list.
- View media gallery:
  - I. Images
  - II. Videos
  - III. Publications
  - IV. Stories
  - V. Notices
- Give opinions.
- View or give Q&A's.
- View the entrepreneur registration manual.
- View service registration manual.

#### **Scope of work highlights:**

#### **Solution Enhancement**

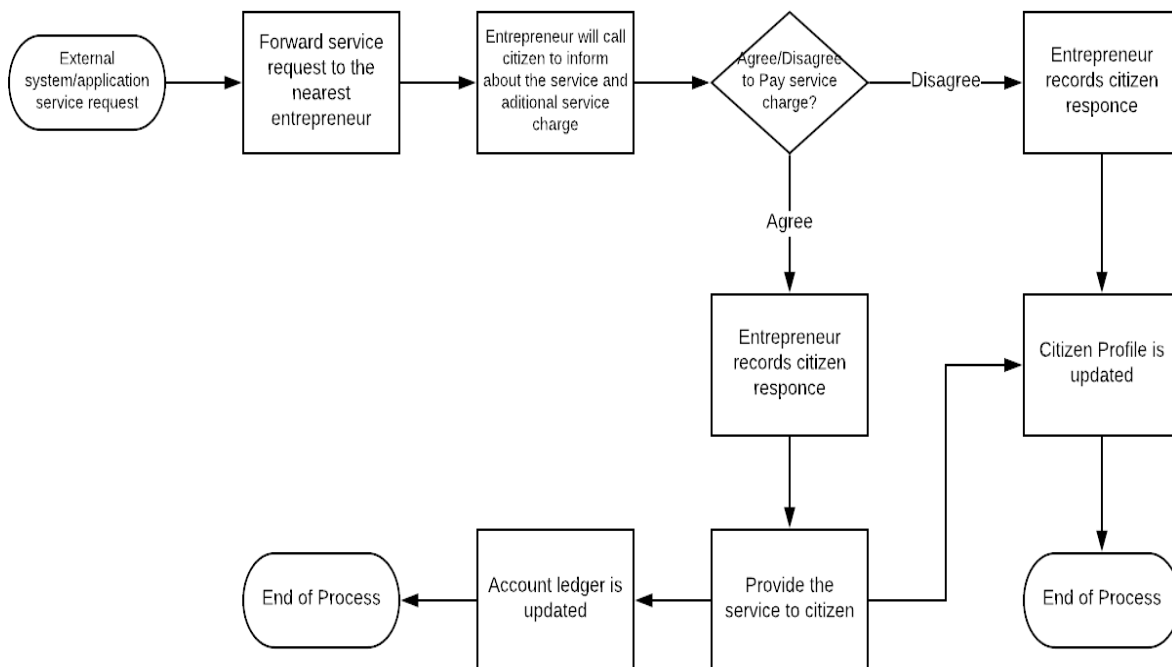
1. Analyze, Design and enhance eksheba solution under n-tier application model compatible with cloud infrastructure environment.

2. Review the existing Eksheba system and conduct a need assessment of the entire Eksheba system to prepare the System Requirement Specification (SRS) for Enhancement of Eksheba System.
3. Redesign the solution architecture of the Eksheba system for better performance, flexibility, scalability and extendibility.
4. Prepare Technical Documents including (Not limited to) SRS, Data Dictionary, Use cases, Test Cases, Training Manual and ERD.
5. Provide concrete revamping plan in the SRS, which should include context diagram of the proposed system, Sequence Diagram, Use case Diagram, and Process Flow Diagram.
6. Design and Develop Database for the software in a structured architecture.
7. Creating necessary plug-ins for integration with OISF/NISF, BSAP. Eksheba will use SSO service, Geo information, Govt. Officer info, Govt service Application, Citizen Profile and other shared/Core services/information/Application / systems through OISF/NISF and BASP for providing Services to entrepreneurs and citizens.
8. Vendor will ensure addressing acceptable UX survey and update the system by reasonable time.
9. Integrate plug-ins for integrating SMS gateway and Payment Gateway.
10. Systems will be connected to any voice/SMS service request platform for capturing citizen request for service for the specific entrepreneur in following way(not limited to):
  - a. Citizen will be able to place service request through voice/SMS.
  - b. Call center agent will forward the service request to the nearest entrepreneur.
  - c. Entrepreneur will ensure the service has been provided to the citizen accordingly.
  - d. Once the service has been raised, call center agent will be able to track the service status.
  - e. The system should generate Voice/SMS service request report segregated by number of service request received from Voice/SMS, number of service served, total revenue generated through Voice/SMS service request platform, number of service request by male/female etc.
  - f. Below is the proposed voice/SMS service request platform process flow:



11. External systems/application Systems will be integrate through API Expose. System should manage API Manager for Smooth Service operation with External systems/Applications.

- a. Whenever a service is initiated through external system/application, entrepreneur will follow up the service request by calling the citizen and informing regarding the service charge associated with the service and provide the service accordingly.
- b. The system should be able to keep track of all the service request that is received through external system/application.
- c. Proposed external system/application service request process flow:



12. Eksheba will provide all services (Govt. and Private) to citizen through online those who are not want to go to Union Digital Center (UDC) / City Digital Center (CDC) / Pourashava Digital Center (PDC). A citizen profile is required for providing all services (Govt. and Private) through online. This Citizen Profile will be share with Eksheba from BSAP through API. Once the service request is initiated through online, a service information accessing record will be stored at eksheba and all the service Accessing information is recorded for monitor by citizen and further uses.
13. Systems should have provision to integrate with a2i's existing Messaging service/Chat boat service application for entrepreneur. The integration should be seamless for the entrepreneur.
14. Systems should be incorporate open source Blog. Where User will be able to write Success story.
15. The proposed system will have e- Ledger with the following facilities:
  - I. The e-ledger must support:
    - a) After Every Successful transaction, Service Provider must have to use 'EKSHEBA Provided API' to inform or acknowledge the System.
    - b) As a payment medium, service provider must provide an option 'a2i pay /ekpay'.
  - II. System will be incorporate the option during payment time, he/she (agent) choose as payment medium 'a2i pay/ ekpay` in that case his/her e- ledger will be update automatically. But if he/she chooses other medium credit card/mobile pay/or any personal account, e- ledger will have no effect.
  - III. E-ledger will manage all type of transaction through various MFS, Banking/ financial institution, -e-GP and any other external payment systems requested by a2i.
  - IV. E-ledger will be integrated with NID enabled payment system.
16. The proposed system have a Financial Accounting System where followings item should be incorporate:
  - a) The system should have a complete financial accounting solution to manage all kind of financial transaction including inflow, outflow, commission, expense, VAT, Tax, accounts head etc.
  - b) The systems will incorporate the features for internal control, reconciliation with bank and agencies including Audit.
  - c) The Systems will have option for Approval/Denial money withdrawal Request from Agent (EKSHEBA).
  - d) The Systems will incorporate Essential reports/ records: Digital Center Information at a glance, Service wise income & commission report, Digital Center wise income & commission report, Head wise collection report, Vouchers, Ledger, Cash Book, Annual Financial Statement, Six & Monthly Report.
17. The Systems will allow Online / Real Time Financial transaction through MFS, Agent Banking, Card and POS payment, Money Transfer Control Number (MTCN) etc.
  - System will Manage Periodical Usage/ Transactional Record.
  - System have real Time Dashboard by crosschecking System data & bank provided Data(Payment record... like remittance, card payment POS payment)
  - Systems will Generate following report(Financial Management)
    - a) Periodical statement (day, weekly or monthly)
    - b) Agent statement (commission)
    - c) Own statement (a2i commission)
    - d) Service Provider Statement (base costing)
  - Provide crosscheck with bank statement & system generated statement.



- Convert complex on premise application services into developer-friendly RESTful APIs.
- As a part of Digital Center, e-Ledger should be integrated to the E-Post Center similar to UDC, PDC & CDC.
- Protect Information Assets Exposed via APIs to Prevent Misuse. (This security test should be considered during the testing phase)
- Ensure that EKSHEBA systems are protected against message-level attack and hijack.
- Authorize Secure Access for Valid Identities.
- Vendor shall provide a user Friendly API Guideline Document or future development and integration purpose.
- System needs to have necessary controls for being browser independent and mobile OS responsive.
- Using static analyzers, Vendor will review codes and will submit the report to a2i.
- Share source code, data structure, technical documents and all other design documents with a2i or its nominated expert or experts creating inter-team IDE with a2i.
- Define technical managed hosting requirements and prepare its technical document.
- Provide necessary support to Data Center and users for data, content and application configuration.
- Track all input, output and reports of the Eksheba system and change the process for data capturing to make the system more saleable and centralized.
- Provide updated technology services, development and implementing those services/solution for enhanced performance of Eksheba system.

#### **Develop Mobile Apps for Eksheba Systems:**

- a) Designing, Developing, integrating and Maintain Android Mobile apps.
- b) Necessary API to integrate with core System.
- c) Prepare Requirements & Technical Design Document for the apps.
- d) Regular Maintenance of the Apps.
- e) The proposed system will have to incorporate following service with Mobile(Android)Apps:
  - I. The application will be accessible by Entrepreneur and citizen through their credential.
  - II. Entrepreneur and citizen will be able to view list of online services through the mobile application.
  - III. Entrepreneur and citizen will be able to apply/avail online services through the mobile application
  - IV. Entrepreneur and citizen will be able to make payment for online services through the mobile application
  - V. Entrepreneur and citizen will be view his/her profile in the mobile application.
  - VI. All digital center location should be available in google map.
  - VII. Mobile app should have Entrepreneur Dashboard showing statistical data such as number of service provided by the Entrepreneur, number of service provided to male/female, total revenue generated by the Entrepreneur etc.
  - VIII. Citizen should be able to register in the mobile app using credentials such as name, address, mobile number, email ID and NID. NID should be validated be the NID database for authentication purpose.
  - IX. Citizen should be able to apply/view list of all available services in the mobile app of Eksheba.
  - X. The app should have citizen dashboard showing information such as number of service availed, number service pending, number of service available etc.

- XI. Citizen should be able view nearby Eksheba center or available Eksheba center segregated by division, district through google map using mobile app.
- XII. The app should have a customized dashboard specially designed for mobile app version.
- XIII. The mobile app will have provision for monitoring account as well.
- XIV. The mobile app should have all monitoring report such as:
  - a) Total Online Service Report.
  - b) Total Service Provided by the Digital Center Report.
  - c) Total Service provided to Male/Female Report.
  - d) Total Revenue report.
  - e) All report should be segregated by E-Post Center, UDC,PDC & CDC.
  - f) Other essential report necessary for monitoring purpose.
- XV. Develop all related API required for Entrepreneur management, citizen management, monitoring user management in the mobile APP.
- XVI. Expose Data & Functionality in API-Friendly Formats should be proposed for mobile app.

#### Production System Management and Sizing:

- a) Configure necessary Staging & Production server.
- b) Continues server monitoring sizing and tuning.
- c) Maintain system uptime as per standard SLA.
- d) Keep planning backup schedule for DB content and ensure its repository at client specified Data Center.
- e) Security: Protection & security of content, hosting environment, servers, network elements, access & network must be ensured.
- f) Ensure senatorial usage of data bandwidth capacity, assessment of data load.
- g) Mirror hosting: To be introduced as a full proof measure and can be done in collaboration with a2i nominated agency.
- h) Ensure Instant Modular expandability option of cloud computing resources using cloud resource control & configuration panel.
- i) Ensure Instant Internet IP address & bandwidth increase & expansion ready arrangement to accommodate scalability, user growth & integration to other systems.
- j) Ensure System software back-up at DR site.
- k) Assist & coordinate with A2i team to upload the content, application & DB. A2i would have full administrative control.
- l) Monitor user experience of IP & Suggest performance development requirements supported by analysis & findings of such monitoring.
- m) Provide Version Control Solution, User Feedback Recording System, Incident Management Mechanism, CMS & DB tuning services for the aforesaid systems.
- n) Internet resource availability: Readily available IP address pool and adequate Internet Bandwidth with instant enhancement option should be readily available.
- o) Provision for scalable VMs, distributed Database system and accommodation for data mining space and database space for other required data stations needed for business intelligence data storage [MySQL/MariaDB].

**Maintenance and Support:**

- p) Provide Post development support service under structured SLA and Change Management Architecture.
- q) Continuous health check of Database, tuning database, tuning codes & queries and mitigating the issues.
- r) Recording, managing reporting issues and user level application related technical problems received through the method prescribed by a2i, develop and deploy necessary solutions.
- s) Updating training manual adjusting the changes in the system.
- t) Fixing all bugs in the system irrespective of its nature and complexities.
- u) Fixing Authentic Data entered into system following structured authorization system
- v) Deploying dedicated Support Engineers 9AM to 9PM each day [Including Holidays] to address maintenance and support issues.
- w) Ensuring deployment readiness support to the client deploying dedicated Infrastructure Engineer
- x) Provide active operational support to update system in compliance with Digital Signature incorporation and respective changes by the government.
- y) Develop new reports as per new requirements based on existing DB Schema.
- z) Enhance and/or re-arrange existing feature of extended development of any supplementary feature within the existing technology framework complying with core SRS.
- aa) Support & Maintenance will cover fixing all bugs and system errors as and when identified by the system users.
- bb) Support and improve Role-wise credential system incorporation for better user role management.
- cc) Vendor shall implement auto backup and database archiving system to meet up the challenge of system recovery, in case of any disaster or missing data.
- dd) The vendor's team will work at their office premises or in case of specialized requirement, they may work at the a2i premises or any a2i designated location.
- ee) Assign a Project Manager who will work closely with the a2i designated official to ensure proper delivery of any assignment during the support and maintenance phase.
- ff) The concerned company cannot assign the programmers to other project till completion of the assignment and will ensure the continuity of the scheduled work by other programmer in case of his/her absence.
- gg) The hired and assigned IT personals for support & maintenance must be regular employees of the vendor company

**Change Management and Version Control:**

- hh) Developing, recording and reporting change documents, source code management and version management.
- ii) Adjust and update system in compliance with any Security test, Load Test or IT Audit conducted by the client.
- jj) Incorporating and streamlining the system in compliance with updated versions of development tools/language/DB and ensure availability of APIs as required for integration with other services.
- kk) Ensure all levels of testing prior to execute changes in production environment.

**Project Management:**

The bidders are expected to provide a detailed project plan and an implementation strategy of the project. This plan is expected to include:

- Information regarding the development process (the bidder will comply with all standards).
- Application development tools, language, and database requirements
- Maximum lead time for delivery of services.
- A development method and schedule with indicative timeline (Gantt chart).
- Risk management strategy and quality control mechanism.
- Any development tasks or assumptions that may be required to render the solution fit-for-purpose.
- Any anticipated integration tasks.
- Comprehensive contingency plan.

**Data Archiving**

Designing and Developing Data archiving system of the data retained in the system as per record retention process in compliance with technology architecture.

**Post-Hosting and Sizing Support**

- Providing active and operation support to Data Center in application/DB sizing the product reconciling and adjusting with user-base and number of offices.
- Regular database tuning and application configuration support to hosted environment.
- On-demand accountable consultancy support to Data Center in terms of Data Backup Scheduling, Back-end service execution, Server Configuration for DB/Application/Load Balancing.

**System Setup & Hosting**

Vendor will install and host the developed system into the Bangladesh Computer Council (BCC) web server or A2i premises and test the system with real data. At this situation vendor will perform all standard test methods before final implementation. During the development period vendor will host the system into their own server till final delivery.

**Capacity Management and Knowledge Transfer**

- a) Assist a2i Implementation team in Piloting the news module/features of software.
- b) Test and confirm Prototype of the software piloting in a specific organization as Technical PoC.
- c) Provide ToT for minimum 50 users and Operational Orientation for minimum 50 end-users nominated by a2i.
- d) Provide technical consultancy to the client for operational management during implementation.
- e) On-demand facilitation of system update information to client as mini-training session (Quarterly and/or in case of major changes executed)
- f) Provide authentic access to client experts to source code and documents.
- g) Developing Video Tutorial for end-users.

### **Intellectual Property Right**

The copyright of the delivered system will be owned by a2i and associate project stakeholder. The vendor must provide all source codes with relevant documentation. The vendor should properly document all such codes and deliver it to the project and cannot claim any royalty or authority of any sort in case of replicating the source code /database or any other deliverables under this ToR for any future use that the Government of Bangladesh may see fit. Furthermore, the vendor shall not use any library or code that has any other copyright claim associated with it, which will prevent or restrict smooth transfer of ownership in any ways.

### **Technology Specification**

---

Developed in Open source platform with renowned development framework and Open source DB.

#### **Security:**

1. The vendor should follow any of the industry standard secure development methodology such as (but not limited to) Comprehensive Lightweight Application Security Process (CLASP) by OWASP etc.
2. PHP based platform with tool architecture like Bootstrap, framework like CakePHP/ Laravel/ codeigniter can be used.
3. Need to work in latest IDE with a2i Tech Team for both web and mobile app (android).
4. Future technology Change, iterative prototyping and agility in product design are the generic expectation.
5. Technology and all related design/data will be open to a2i.
6. Vendor will undertake responsibility for Input Validation Controls, Authorization/Authentication Control and other security controls in place in both test and production environment of application
7. The vendor should consider (but not limited to) common vulnerabilities such as SQL Injection, Cross Site Scripting (XSS) etc. Vendor will undertake responsibility for Input Validation Controls, Authorization/Authentication Control and other security controls in place in both test and production environment of application.
8. The app needs to support android v4.0+ or later.

### **Delivery & Duration of the assignment**

---

#### **5.1 Total Duration of the assignment is 24 Months.**

Selected Vendor will have to sign separate SLA and Non-discloser agreement as part of the core agreement for this 24 months. If performance of the vendor is not satisfactory within first 12 months, client can terminate the contract as on ending 12 months of services with one-month prior notice.

## 5.2 Deliverables:

SN	Major Activity		Timeline
1	Enhanced eksheba Solution. Add/modify functionality to eksheba, Mobile Application development according to the scope of work	Conduct background scoping and research work and finalizing the system requirement specification (SRS)	Month 1- Month 9
		Developing/ Enhanced the application according to requirements	
		Feedback collection and incorporation	
		Handover the final solution	
2	Troubleshooting and maintenance	Provide 24 Months Troubleshooting and Maintenance support for the smooth operation of eksheba from the date of Contract Agreement Signing.	Month 1- Month 24
		Continuous health check of Database, tuning database, tuning codes & queries and mitigating any issues.  The system should have provision for periodical & instant Data Backup & Auto Archiving System.	
3	User support services	Provide 24 months technical support services to the stakeholders from the date of Contract Agreement Signing	Month 1- Month 24
		Provide prompt support for easy and quick registration, log-in, password reset, technical difficulties	
		Ensure access control, application level security and on-demand support to Helpdesk (layer-2) for uninterrupted LIVE service.	
		Provide monthly follow-up calls to officials for sharing individual progress and performance to improve consistency of performance	
	<b>Total</b>		<b>24 Months</b>

**Requirement of Technical Team:**

Team Leader /Project Manager	
<b>Number of Persons</b>	1 person
<b>Job Description</b>	The Project Manager is responsible for the day-to-day operational management of the project, including developing and overseeing work and preparation of project progress reports. S/he is responsible for regular reporting to the client. The chosen candidate is responsible for overseeing all technical aspects of the project implementation including analyze the user requirements, develop software design, choose the right technical solution as well as oversee the right implementation to ensure sustainability.
<b>Requirements</b>	i) Minimum graduate in Computer Science and Engineering/ICT preferably having a degree from a reputed university. ii) 8 years of progressive experience in similar field. iii) At least 5 years' experience in managing large scale IT projects. Past Experience in leading such an assignment, role including software design and development.

System Analyst	
<b>Number of Persons</b>	1 person
<b>Job Description</b>	The System Analyst is expected to analyze the user requirements through meetings and discussion session with the targeted beneficiaries. After finalizing the primary draft of User Requirement Specification through vetting with the users, the System Analyst will prepare the Software Design Document in consultation with the Team Leader /Project Manager and share the document with QA Specialist. Specifically, the System Analyst will – <ul style="list-style-type: none"> <li>▪ Design the architecture for systems integration as required</li> <li>▪ Prepare plans for optimal data storage and retrieval procedures</li> <li>▪ Prepare plans for data standardization</li> <li>▪ Prepare SRS</li> <li>▪ Prepare other technical documentation as per project requirement.</li> </ul>
<b>Requirements</b>	i) Minimum graduate in Computer Science and Engineering ii) 5 years of progressive experience in the sector of software development

Solution Architect	
<b>Number of Persons</b>	1 Person
<b>Job Description</b>	The solution architect will be responsible for the designing of the software architecture

	<p>and design. Specifically they will be responsible for:</p> <ul style="list-style-type: none"> <li>• Software Architecture Designing</li> <li>• Software Framework Design</li> <li>• Software Database Policy Design</li> <li>• Software Security Policy Design</li> <li>• Software Testing Policy Design</li> <li>• Software Documentation</li> </ul>
<b>Requirements</b>	<p>i. Minimum graduate in Computer Science and Engineering or relevant subjects.</p> <p>ii. 7 years of progressive experience in the sector of enterprise software system design, Open Architecture, SOAP and Integration analysis.</p>

Database Expert	
<b>Number of Persons</b>	1 person
<b>Job Description</b>	<p>The Database Expert will be responsible for designing the database of the the proposed system. Document all the necessary findings of the database architecture designed and developed for the application. The position is also expected to provide necessary technological solution to the Software Engineers of the team if required. Additionally, the database expert will –</p> <ul style="list-style-type: none"> <li>▪ Assisting in database design</li> <li>▪ Updating and amending existing databases</li> <li>▪ Setting up and testing new database and data handling systems</li> <li>▪ Monitoring database efficiency</li> <li>▪ Sustaining the security and integrity of data</li> <li>▪ Creating complex query definitions that allow data to be extracted</li> <li>▪ Secures database by preparing access and control policies and procedures; implementing disaster recovery procedures and database archiving management.</li> </ul>
<b>Requirements</b>	<p>i) Minimum graduate in Computer Science and Engineering/ICT</p> <p>ii) 6 years of progressive experience in the related field.</p>

Security Expert	
<b>Number of Persons</b>	1 Person
<b>Job Description</b>	<p>The security expert will be responsible for the security of the system while in and after development. Specifically they will be responsible for:</p> <ul style="list-style-type: none"> <li>• Checking and monitoring security of Server &amp; Network.</li> <li>• Provide input to systems development team during the development phase for ensuring the high level security.</li> <li>• Monitoring Application level Security and provide feedback to Development team for fixing the bug.</li> </ul>
<b>Requirements</b>	<p>i. Minimum graduate in Computer Science and Engineering or relevant subjects.</p> <p>ii. Professional Certification: CISA/ CCISO, CEH/ CHFI/ISO 27001 LA/ COBIT5/ LPT/OSCP.</p> <p>iii. 5 years of progressive experience in web application security and infrastructure security.</p>



Senior Software Engineer	
Number of Persons	2 person
Job Description	<p>The Senior Software Engineer will lead to development team for develop and design different modules for technology solutions for the target population. The systems will be designed after taking necessary input from the target population. He will be responsible for designing and developing system for successful deployment. Additionally, he will monitor the programmers for executing different development tasks to implement different modules of the system. The position is also expected to provide necessary technological solution to the Software Engineers to the team if required. Additionally, the position will –</p> <ul style="list-style-type: none"> <li>▪ Assist Systems Analyst for Conduct requirement analysis for development solution.</li> <li>▪ Develop the necessary business and system specifications.</li> <li>▪ Provide assistance to develop system design for any technical solutions</li> <li>▪ Develop URS, SRS for any outsourcing of project work</li> <li>▪ Carry out the technical evaluation for project development standardization</li> <li>▪ Monitor execution of the outsourced project work.</li> </ul>
Requirements	<p>i) Minimum graduate in Computer Science and Engineering/ICT</p> <p>ii) 6 years of progressive experience in the related field.</p> <p>iii) Must have progressive experience in developing android mobile app.</p>

Software Engineer	
Number of Persons	2 person
Job Description	<p>The Software Engineers are expected to drive the major software programming initiative in the project. This includes design, develop, and modify the modules with arranging the needed functionalities accordingly. The database backend is also expected to be developed by this team, including adding and modifying the structure, the stored procedures (if any), SQL queries, triggers and enable necessary security with backup features.</p>
Requirements	<p>i) Minimum graduate in Computer Science and Engineering/ICT</p> <p>ii) 5 years of progressive experience in the related field.</p> <p>iii) Must have progressive experience in developing web applications.</p>

Mobile App Developer	
Number of Persons	1 person
Job Description	The Mobile Apps (Android) Developer is expected to drive the mobile application

	programming initiative in the project. This includes design, develop, and modify the mobile application with arranging the needed functionalities accordingly. The database backend is also expected to be developed by this team, including adding and modifying the structure, the stored procedures (if any), SQL queries, triggers and enable necessary security with backup features.
Requirements	i) Minimum graduate in Computer Science and Engineering/ICT ii) 3 years of progressive experience in the related field. iii) Must have progressive experience in developing mobile app.

Quality Assurance Engineer	
Number of Persons	1 person
Job Description	The QA Engineers will work under the supervision of the QA Specialist for ensuring the quality of the products that reach the client. Specifically, they will: <ul style="list-style-type: none"> <li>▪ Prepare test cases in accordance with the test plan and share with QA Specialist</li> <li>▪ Execute the test cases, log the results and ensure steps to reproduce (in case of software bug)</li> <li>▪ Share the results with the QA Specialist within expected deadline</li> </ul>
Requirements	i) Minimum graduate in Computer Science and Engineering or relevant subjects ii) 3 years of progressive experience in the sector of software testing and quality assurance

UX Designer	
Number of Persons	1 person
Job Description	The UX Designer will be responsible for supplying all digital imagery required for preparing the software including CSS templates, GUI for each screen. Specifically he will – <ul style="list-style-type: none"> <li>▪ Understand the full functionality of the software applications and organize the UI components in different pages, sections, tabs to ensure maximum user-friendliness and aesthetics</li> <li>▪ Prepare mock HTML /PSD screens for each page of the web-based applications and get the design approved from the relevant authority</li> <li>▪ Prepare and supply the developer team with CSS, GIF, and JPEG files for screens, buttons, banners and other items as required</li> <li>▪ Prepare the help files, manuals, and other documentation to ensure accessibility and attractiveness</li> </ul>
Requirements	i) 5 years of progressive experience in the sector of UX designing for software development purpose. ii) Should have progressive experience in designing mobile app user interface

Support Engineer	
Number of Persons	2 person

Job Description	The support engineers will be responsible for helping the end user use the software applications developed in every mean possible, by identifying and solving the issues, and work as the interface between the software engineer and the targeted users.
Requirements	2 years of experience in IT-related fields, with clear understanding about web-based applications development based on 3-tier technology, and hands on-experience in solving end-user problems.

Technical Writer	
Number of Persons	1 person
Job Description	The Technical Writer will be responsible for preparing all the technical document guided by Project Manager.
Requirements	3 years of progressive experience in the sector of software development related technology documentation.