

Government of the People's Republic of Bangladesh  
Bangladesh Forms & Publication Office  
Tejgaon, Dhaka-1208.  
REQUEST FOR EXPRESSION OF INTEREST (EOI)


For  
Hiring a Firm

**(National)**


No-05.86.0000.001.14.006.24-143

Date: 27-02- 2025

1.	Ministry/Division/Office	Ministry of Public Administration Department of Printing and Publications Bangladesh Forms & Publications Office
2.	Agency	Bangladesh Forms & Publications Office
3.	Procuring Entity Name	Deputy Director (Deputy Secretary) Bangladesh Forms & Publications Office, Tejgaon, Dhaka-1208
4.	Procuring Entity District	Dhaka
5.	Expressions of Interest for Selection of	Hiring a Firm for Development & Maintenance of Digital Service Delivery Platform for Bangladesh Forms and Publications Office (BFPO)
6.	EOI Ref. no and date	No-05.86.0000.001.14.006.24-143 , Date 27-02- 2025
<b>KEY INFORMATION</b>		
7.	Procurement method	Quality and Cost Based Selection (QCBS)
<b>FUNDING INFORMATION</b>		
8.	Budget and Source Of Funds	GOB (Revenue Budget)
<b>PARTICULAR INFORMATION</b>		
9.	Program Name	Digital Archives and Searching System (1947-2017), e-Requisition Systems, Store Management System, Online Sales & Management Systems and 2 years Maintenance.
10.	Last date & time of EOI submission	[Expression of Interest shall be Submitted by 1.00 pm on <b>19-03-2025</b> in sealed envelope to Deputy Director, Bangladesh Forms & Publications Office and be clearly marked 'Expression of Interest (EOI)' for "Hiring a Firm for Development & Maintenance of Digital Service Delivery Platform"]
<b>Information for Applicant</b>		
11.	Brief description of the assignment	Development & Maintenance of Digital Service Delivery Platform for Bangladesh Forms and Publications Office (BFPO). Digital Archives and Searching System (1947-2017), e-Requisition Systems, Store Management System, Online Sales & Management Systems, help Module and 2 years Maintenance. For detail Terms of Reference (TOR) Please log in: <a href="https://www.dpp.gov.bd/bfpo/">https://www.dpp.gov.bd/bfpo/</a>
12.	Experiences, resources & delivery capacity requirement	This is a high-priority national project with utmost importance towards the future Bangladesh goal, so the firm must prove that they have a solid technical background and operational strength to undertake and take this service forward without any hindrance. Applicants must also have adequate technical ability, resources and processes. As such, the following are defined as minimum eligibility criteria of the firm/company:  1. Must have a minimum of 10 (Ten) years' experience in Software development/IT/ITES business in Bangladesh. 2. Must have update BASIS membership and ISO 9001 or ISO 14001 or ISO 27001 certified. 3. Must have valid and up-to-date Trade license, Incorporation certificate, VAT Registration certificate, TIN certificate, Updated income tax return certificate.  4. Must have experience of completing similar nature of service at least 02 (Two) large scale/ nationwide software development, implementation and maintenance service amounting taka 5,00,00,000 (Five Crore) with the Government/ Semi-Government/ Autonomous/Private Organization of Bangladesh either combined or separately, where designing, developing and implementing Web based Application/ Mobile Application/ Desktop based Application is included. Must submit the work completion certificate in this regard.

  
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	<p>5. Must have experience of successfully completing at least 01 (One) project where digital document archiving and indexing at least 1,00,000 (one lac) document archiving related work is included. Must submit the work order/completion certificate in this regard.</p> <p>6. Must have had an average annual turnover above TK 5,00,00,000 (Five Crore) in the last 02 (two) financial years. Must submit financial audit report showing annual turnover in this regard.</p> <p>7. The minimum amount of liquid assets or working capital or credit line(s) of the tenderer shall be Tk. 5,00,00,000 (Five Crore).</p> <p>8. List of adequate professional staffs with relevant qualification along with experience in developing similar solutions and delivering similar services Please submit the necessary Documents.</p> <p>The Deputy Director of Bangladesh Forms and Publications Office, Department of Printing and Publications, Ministry of Public Administration now invites eligible firms to indicate the interest in providing the services. Interested firms/vendors are invited to provide information indicating that they are qualified to perform the services. This shall require substantiation through submission of brochure and other documents describing similar assignments, experience availability of appropriate professional qualification and experience among applicant's staff, resources to carry out the assignment, logistical capability, etc.</p> <p>Short list of firms/vendors will be prepared upon evaluation of EOIs of the eligible applicants and 'Request for Proposal (RFP)' document will be issued in their favor. Firm/vendor will be selected using the Quality and Cost Based (QCBS) method in accordance with the PPA 2006 and PPR 2008.</p>
13	Submission of EOI: a) Application for Expression of Interest (EOI); b) Up-to-date Trade license; c) Constitutional documents of the firm; d) Up-to-date Audited financial reports of the firm; e) Up-to-date VAT registration certificate; f) Up-to-date Income Tax clearance certificate; g) One set original copy and one set true photocopy should be submitted.
14	The sealed envelope marked as 'Expression of Interest (EOI)' should be submitted to Deputy Director, Bangladesh Forms & Publications Office Tejgaon, Dhaka-1208. Short list may comprise minimum 3 or maximum 8 firms who will be requested to submit the Technical and Financial Proposal (RFP).
15	The procuring entity reserves the right to accept or reject all EOI's.

  
29.2.2020

MD. Nazrul Islam  
(Deputy Secretary)

Deputy Director and Procuring Entity  
Bangladesh Forms & Publications Office  
Department of Printing and Publications

Tejgaon, Dhaka-1208

Tel-02-226603922

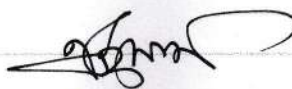
E-mail: dd.bfpo@dpp.gov.bd

**Government of the Peoples Republic of Bangladesh**

Bangladesh Forms & Publication Office Tejgaon,

Dhaka-1208.

**ToR**  
**Development & Maintenance of Digital**  
**Service Delivery Platform**  
**FOR**  
**Bangladesh Forms and Publications**  
**Office (BFPO)**



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## Introduction

The Government has a vision of reforming through the utilization of technology in conducting administrative operations inside the agencies to enable efficient rendering of services and to allow accessibility of these services to the citizens. An online one-stop government service application platform can make government services easily accessible to citizens where they will be able to select and apply for relevant services, make payments for the services easily and get delivery of these services. It can be a means of improving service delivery, engaging public sector employees and getting faster results for citizens.

"Digital Bangladesh" is an integral part of government should be designed to be more citizen centric and automated which will reduce the hassle and difficulties which service providers and service recipients are facing right now. In collaboration with Government, Department of Printing and Publications (DPP) has brainstormed an idea to introduce a centralized Service Delivery Platform for citizen and government officials with a vision to establishing a digitized and automated workflow in DPP.

## Background of the Organization

The Department of Printing and Publications (DPP), a department of the Ministry of Public Administration, is in charge of all government printing, publishing, and stationery-related matters. Under the Department of Printing and Publications, there are 5-unit offices/Presses, 8 zonal offices, and the Bangladesh Forms and Publications Office (BFPO), Bangladesh Government Press (BG Press), Bangladesh Security Printing Press (BSPP), and Zonal Offices. The Department of Printing and Publications, which is a division of the Ministry of Public Administration, GOB, houses the Bangladesh Forms & Publications Office. It began operating as a crucial component of the era's East Pakistan Government Press (EPGP). Forms and Publications, and execute the necessary steps to print, publish, and distribute them to the appropriate government offices around the nation.

Various sorts of forms, registrations, etc. are provided by this office at no cost in accordance with the needs of the various government offices. The volume book of the land registration office, Treasury Challans, forms and registers for marriage registration, money receipts for land revenue collection, and DCR books, among others, are among these forms and registers. In addition, the rules and regulations, ordinances, and SRO issued by the Parliament are printed, distributed, and purchased by the general public through its own sales centers and agents.



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## Objectives

The objectives of this assignment are stated below:

- Design and develop digital archiving system with advance powerful searching mechanism.
- Develop a robust e-Requisition system.
- Design and develop a store management system to manage the inventory of Bangladesh Forms and Publications Office (BFPO).
- Develop a dynamic form builder to create 4000 existing forms and custom forms (if required).
- Develop a system for online sales and monitoring to sell public documents, Gazettes, forms, etc.

## Scope of Work

### 1. Requirement Analysis

The Firm will have to go through a comprehensive requirement analysis phase and prepare system requirement specifications acknowledged by all the relevant stakeholders.

### 2. Architecture & Standard development

The establishment of the appropriate standards and guidelines to move the Public Administration e-Government Architecture practice forward to cover main architecture domains like: business, information, data and application, technology with the Whole of Government (WoG) approach and perspective.

### 3. Development of Digital Service Delivery Platform

The Firm will have to develop digital archives and searching system, e-Requisition System, Store Management System, Online Sales and Monitoring System, Common Services Configuration and other relevant solution in accordance with the standards, specification and client requirements.

### 4. Scanning and Data Entry

The selected firm will have to scan around 8 lac pages ( $\pm 10\%$ ) of books, forms and other documents of various sizes and do data entry of the required info/metadata of those documents. The vendor must consider the entire scanning and data entry part as a single deliverable. This part of the work must be done in the client's own premises.

### 5. Service Integration

The developed systems must have provision to integrate with any other relevant systems used by governments, non-government and third-party stakeholders.

### 6. Implementation Model

Firm will propose an implementation model in terms of partner assistance, capacity management, common module support, user assistance and administrative arrangement.

### 7. Capacity Development and Management

Capacity management of the stakeholders (i.e., Government/non-government/international agencies, industry, academia etc.) is an expected deliverable of the assignment.

### 8. Quality Assurance and Testing

The firm must purpose a Quality assurance & testing plan starting from development to deployment.

### 9. System stabilization and user acceptance

The firm will have to complete dedicated on-site support to the client and UAT environments to incorporate all minor, major and critical changes as and when necessary for the overall smooth working functionalities for all services.

#### **10. Support & Maintenance**

Provide 24x7 support, maintenance and troubleshooting to the developed solutions and provide warranty for a period of 30 months after the completion of the main services.

### **Requirement Analysis**

Requirements analysis is critical to the success or failure of a systems or software project. The requirements should be documented, actionable, measurable, testable, traceable, related to identified business needs or opportunities, and defined to a level of detail sufficient for system design.

In this phase project plan, requirement fixation & high-level design will be completed for the entire project. The entire functional scope that will be finalized in the "System Requirement Analysis & Design" phase may be divided into separate independent multiple parts. Each part may contain a number of components, modules and features based on the implementation priority, dependency, and integration complexity. This entire system must be designed and developed following service-oriented architecture so that interdependencies and integration functions among the modules and features of different components of multiple parts will be smooth but very organized

### **Architecture & Standard Development:**

The appropriate standards and guidelines need to be developed and followed while executing the entire project.

#### **Architecture & Standard development**

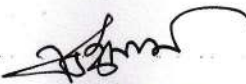
In order to develop the Architecture for this project, TOGAF (The Open Group Architecture Framework) will have to be used as the core architecture development methodology. The Firm will follow enterprise principles, standards, frameworks, artifacts, and best practices by working with the Client technology team through an acceptable vetting and enacting process. Firms will use TOGAF 9++ components which are: ADM (Architecture Development Method), ADM Guidelines & Techniques, Architecture Content Framework, Enterprise Continuum, Reference Models, and Architecture Capability Framework.

The Firm has to design the system architecture in a way so that the system can be extended and enhanced both vertically and horizontally at any given time in the future development or enhancement scope intended by the Client.

#### **Business Architecture**

In the Business Architecture phase, the selected Firm will need to develop a detailed Baseline Business Architecture Description in this phase. In this phase, the system needs to identify Required Catalogs of Business Building Blocks (such as Organization/ Actor catalog, Role catalog, Business Service/Function catalog, Process/ Event catalog, etc.), Diagrams (such as Use-case diagram, Process Flow diagram, etc.).

In the Data Architecture phase, the selected Firm will need to provide Baseline Data Architecture, Data Entity/ Business Function matrix, etc.).

  
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### Application Architecture

In the Application Architecture phase selected Firm will need to provide Baseline Application Architecture, Application Interoperability requirements, and relevant technical requirements. The Firm also will need to provide Diagrams such as Application Use-Case diagram for Application Architecture components of an Architecture Roadmap.

### Technology Architecture

In the Technology Architecture phase, selected Firms will need to provide Technology Components, Technology platforms, Hardware and network specifications and Baseline Technology Architecture. The Firm also will need to provide updated technology requirements, Technology Architecture components.

### Standards & Guidelines


Architecture standards and guidelines should provide the methods and tools for assisting in the acceptance, production, use, and maintenance of the project. Standards and Guidelines should be based on an iterative process model supported by best practices and a re-usable set of existing architecture assets. We are expecting the following Standards and Guidelines to be prepared in collaboration with stakeholders' acknowledgment.

- Application standards and guideline
- Integration standards and guideline
- Data standards and guideline
- Security standards and guidelines
- Technology standards and guidelines
- API Specification
- Deployment standards and guideline
- Other Standards, guidelines, and models based on TOGAF (if any)

### Development of Digital Service Delivery Platform

#### Component 01: Digital Archives and Searching System

A digital archive and searching system is used to store, manage, and search digital documents and files. The digital archive and searching system will ensure documents in a central repository and make searching easier. Some of the key modules of digital archives and searching system include:

  
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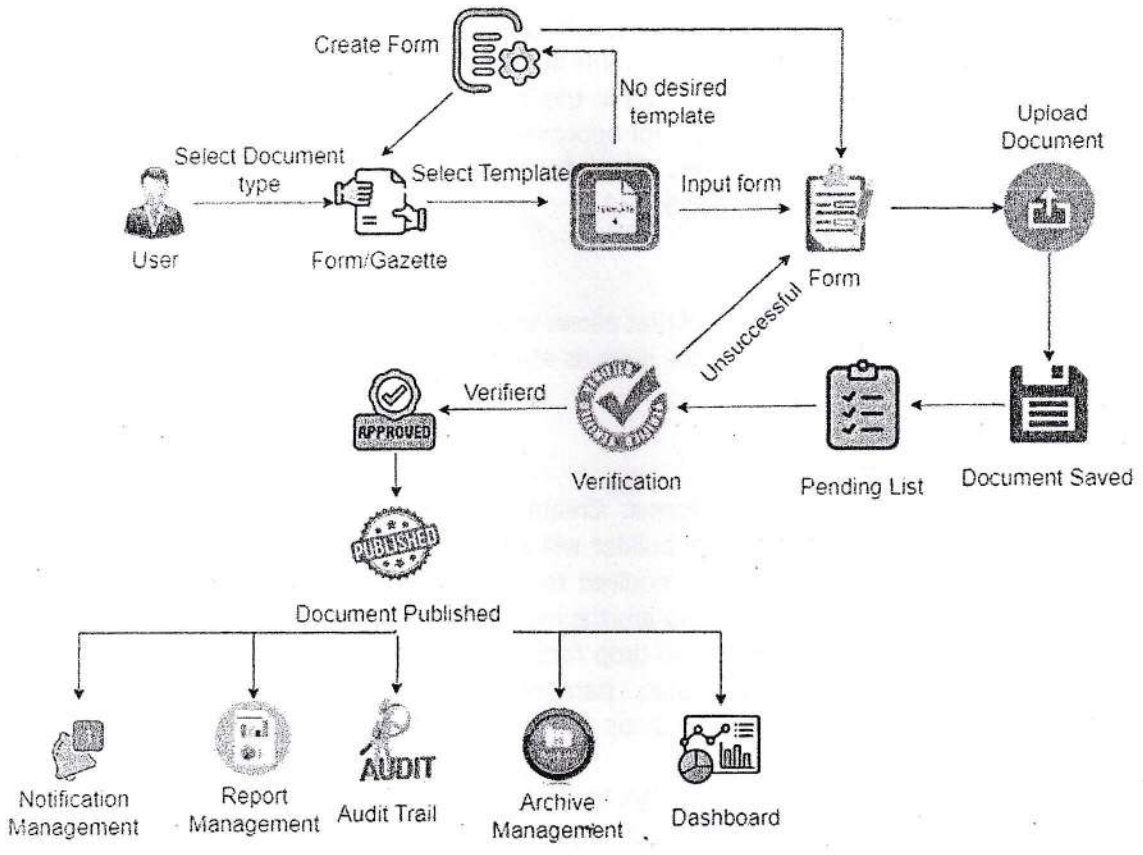


Figure: Digital Archive and Searching (Regular Operation)

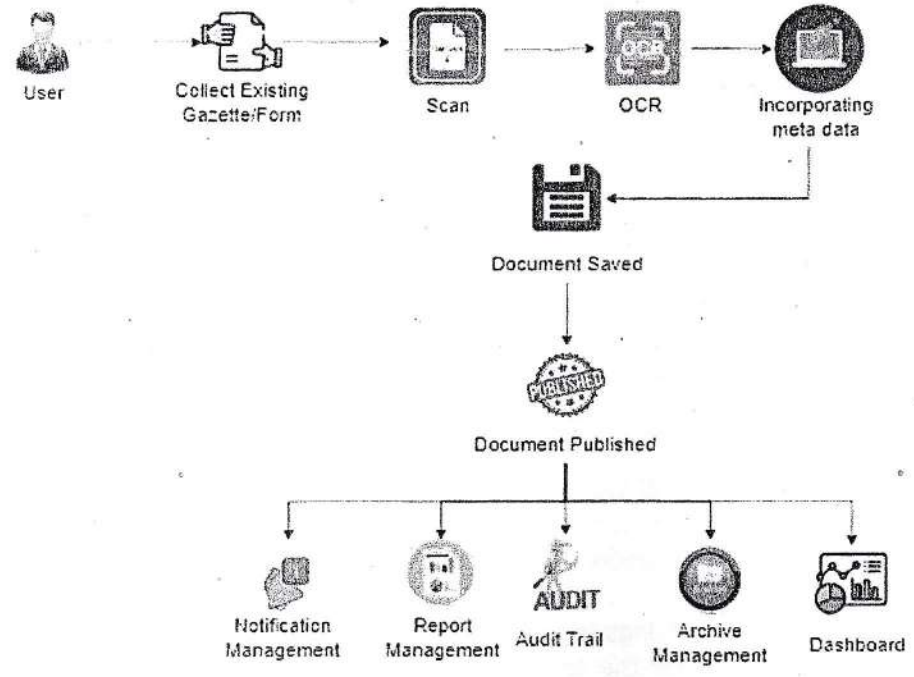


Figure: Digital Archive and Searching (Exiting Document)

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The user will select the document type, whether it is a form or gazette. Then a desired template is chosen by the user from the available templates, if the desired template is not present, then the user is redirected to the form builder where they can create the desired forms. After template selection, the user fills in the input fields of the form and uploads the document. The document is then queued for approval. When the document is approved, it is visible online the forms/Gazette's list. The document is then manually archived or automatically archived after a certain period of time.

#### Module 01: Dynamic Form Builder

A dynamic form builder is a software tool that allows users to create and customize forms with various types of fields and input elements, such as text fields, checkboxes, radio buttons, and drop-down menus.

##### Dynamic Form Builder

The consulting firm will build 4000 forms. Create and manage different service forms dynamically from the form builder. The builder will support all the parameters, validations, terms & conditions and other settings required to build and publish the forms to deliver services to the consumers efficiently. Here are the main features of the dynamic form builder:

- Create service form by drag and drop facilities with all types of form elements like text field, image field, graphic, paragraph, validation etc. There will have configuration regarding service steps and process mapping with service users and desks.
- There will have notification settings to send notifications at different service steps. The system will expose API for the service to integrate the service with external system.
- The form can be updated and form elements can be added or remove any time even if the service is in live having live user data associated with that.

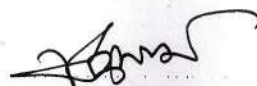
#### Module 02: Dynamic Gazette Builder

Dynamic gazette builder allows users to create and customize gazette templates with various types of fields and input elements, such as text fields, checkboxes, radio buttons, and drop-down menus.

##### Dynamic Gazette Builder

The consulting firm will build any kind of gazette template. From the gazette builder, create and manage various service gazettes dynamically. To efficiently provide services to users, the builder will support all the parameters, validations, terms and conditions, and other settings needed to create and publish the gazettes. Here are the main features of the dynamic gazette builder:

- The ability to drag and drop all types of gazette elements, including text fields, picture fields, graphics, paragraphs, and validation, is used to create service gazettes. There will have configuration regarding service steps and process mapping with service users and desks.
- There will have notification settings to send notifications at different service steps. The system will expose API for the service to integrate the service with external system.



- The gazettes can be updated and gazette elements can be added or remove any time even if the service is in live having live user data associated with that.
- Authorized user can approve the gazette templates, by using the gazette builder.
- Pre-Define gazette templates can be customized and edited by authorized users by maintaining proper rules and regulations.

#### Module 03: Dynamic Book/Publications/Document Builder

Dynamic Book builder will allow users to create and customize books or document templates with various types of fields and input elements. Following are some feature lists that the Book builder module must have:

- Customizable book templates: The system should offer customizable book templates that allow authors and publishers to choose the layout, font, and other design elements of their book.
- Multiple formats support: The book builder system should support various formats for publishing, such as eBooks, PDFs, and print books.
- Content management: The system should have a content management system that allows authors and publishers to manage and organize their content efficiently.

#### Module 04: Document Management

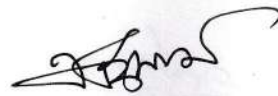
The system will be equipped with the option to allow users to upload, store and organize digital documents/gazettes/forms, etc. in a centralized repository. The consulting firm shall manage all the Gazette (Weekly Gazette & Extraordinary Gazette) from 1947 to 2017, available Publications and All Govt. Forms by a well-defined, standardized and controlled archiving process. The system shall block the uploading facility of documents if a duplicate document is already archived in the system.

The document management module has the following features:

#### Indexing

The digital documents will be archived and stored in a PDF file format. The archived files will be indexed for better search availability. The indexing information will be used for storage and retrieval process. While storing the documents the certain information needs to be attached with it such as:

- Document name
- Document Code/ Number
- Ministry Name
- Department Name
- Document Pricing
- Document ownership
- Uploading authority
- Published Date, etc.



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### Metadata management

The system has a provision to add/edit/delete meta data or keywords and document properties. These meta data are used to improve the searching mechanism of the system.

### Document Approval

The documents uploaded in the system will require an approval system. Once the documents are approved, they will be visible online.

### Access Control

The proposed system will have different layers of access to the archived documents. These access control feature enables security and limits the users to view or modify these documents based on the authorization of the users.

### Integration

The system can integrate with other systems such as content management systems (CMS), and records management systems to improve the access and management of documents.

### Module 05: Archive Management

Archive management is the process of organizing, storing, and preserving documents and records. The Archive management module involves features such as:

#### Document Preservation

The system includes features to help preserve documents and records, such as digital preservation, media migration, and disaster recovery. The system allows authorized users to organize and store the documents.

#### OCR

The system will be integrated with a provided OCR to extract texts from images or the scanned documents. These extracted texts help in the searching mechanism of the system. The search results become more reliable and accurate.


#### Dynamic Search engine

The system will be equipped with a powerful search engine that can search the digitized documents by simply using the typed gazette number, memo number, keywords, metadata, etc. There will be a filtering option to filter out the digitized documents based on Ministry/ Division/ Directorate/ Zone/ Division/ District/ Upazila and autonomous/ semi-autonomous offices etc. The search engine will have the advance searching options such as

- Auto Suggestion
- Auto Complete

#### Download and sharing

The archived content can be downloaded by the authorized user using this system. The users will have the ability to share these contents in social media such as Facebook, WhatsApp, LinkedIn, etc.

  
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## Module 06: Gazette Management

Gazette management is the process of creating, publishing, and maintaining official government publications, such as official government notices, laws, and regulations. The authorized users from different offices will be able to add their content in weekly/monthly/yearly gazettes by clicking on the template shown in their respective panels. The BFPO officer can later modify or reorganize the gazettes before publishing. The Features of gazette management is as follows:

### Receive Information

Information for publication in the gazette is typically obtained from government agencies, other organizations, or members of the public. This may include legal notices, regulations, proclamations, and other official announcements.

### Reviewing and editing

The authorized users will have the privilege to review and edit the information to ensure accuracy and compliance. The editing facility will be available only before approval.

### Approval

The content reviewed is in the pending list waiting to be approved. When the BFPO officer approves any content in the weekly/monthly/yearly gazette, the content is stored in that specific gazette.

### Publication

The BFPO officer reviews and validates all contents in the gazette. When the BFPO officer is satisfied with the content, they organize the content as per their convenience and space of the content. When all processes are over and the officer is done organizing the gazette, they publish it.

### Archiving

After the gazette is published, it is archived for future reference and for public use. The archiving is done by the BFPO officer manually or it is automatically archived after a certain predefined time limit expires.

### Search

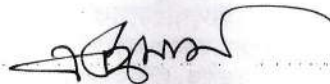
After publishing the gazette, it will be available on the system for public view and use. Users/viewers can search the archive for their respective gazette.

### Payment

If the gazette is free for view, then user can view or download it without any payment. If the gazette is not free, then the user will have to pay for it for further access through the integrated payment platforms in the system.

### Download and sharing

After completing the payment option, user can access the gazette. The gazette can then be downloaded or shared to social media platforms using the available download and sharing button respectively.



The vendor will have re-type selected old gazettes and other relevant documents (along with proofreading of the contents with the support from the domain experts possibly) and other relevant documents to generate content. The amount of such document is subject to be decided later.

#### Module 07: Notification Management

Notification management is the process of creating, managing, and delivering notifications to users. Notifications are generated whenever a document is uploaded, approved, rejected, etc. Some key features of a notification management module include:

##### Customizable message templates

The system allows users to create and manage customizable message templates, which can be used to quickly send out notifications.

##### Targeted delivery

The system allows users to target notifications to specific groups of users or individuals based on criteria such as location, role, or device.

##### Real-time delivery

The system can deliver notifications in real-time, allowing users to receive important information as quickly as possible.

##### Multi-channel support

The system can send notifications through various channels such as email, SMS, push notifications, in-app messages and web notifications.

#### Module 08: Report Management

The system will generate various reports based on the online archiving and searching data. The reports will be in daily/weekly/monthly/yearly basis. The documents may include weekly gazette, extra-ordinary gazette; forms, register book, diary, calendar, reports, publications, budget, speech, question papers, court cause list etc. The reporting module will have the ability to filter the results date wise, department wise, ministry wise, etc. The reports will contain information such as

- Documents uploaded related
- Documents approval related
- Documents editing related
- Notification Related
- Audit report
- Gazette related
- Archive related
- Template related



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## Module 09: Audit Trail

An audit trail, also known as an audit log, is a chronological record of system events that can be used to track and investigate activities within a system. Some key features of an audit trail module include:

### Timestamp

Each entry in the audit trail includes a timestamp that indicates when the event occurred.

### Event details

The audit trail includes information about the event, such as what type of action was taken and by whom.

### User identification

The audit trail records the user who performed the action, this could be a username or an IP address.

### Tamper-proof

Audit trails are designed to be tamper-proof, meaning that they cannot be modified or deleted without leaving a trace.

## Module 10: Dashboard

A dashboard is a user interface that displays key performance indicators (KPIs), metrics, and other data in a graphical format. Dashboards are often used to provide users with a quick and easy way to access and understand important information. The dashboard will show the data of digital archiving. Some key features of a dashboard include:

### Customizable layout

Dashboards can be configured to display the data and metrics that are most important to the user.

### Real-time data

Dashboards can be configured to display real-time data, allowing users to stay up-to-date on the latest information.

### Visualization

Dashboards use various types of visualizations such as charts, graphs, and gauges to display data in an easy-to-understand format.

### Data filtering

Dashboards can include features that allow users to filter the data displayed on the dashboard by different criteria, such as date range

## Component 02: e-Requisition System

The e-Requisition system allows the different ministries, government bodies and NGO's to request for any gazette, extra-ordinary gazette, forms, register book, diary, calendar, reports, publications, budget, speech, question papers, court cause list.

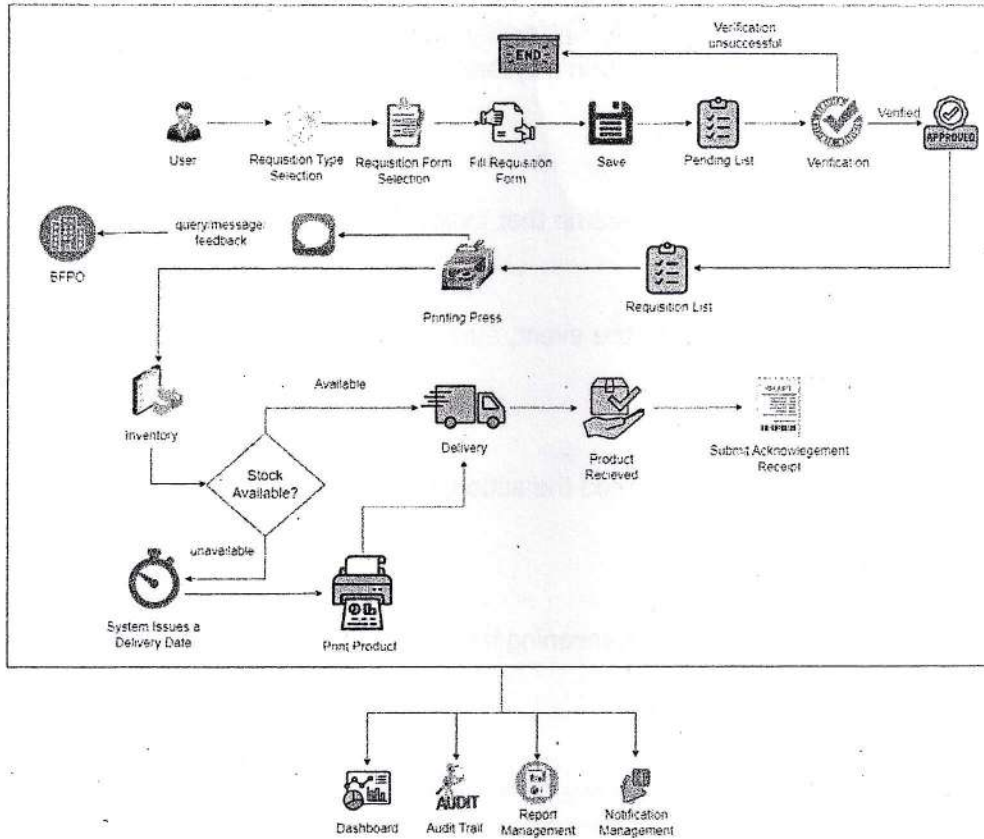
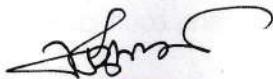


Figure: e-Requisition Management

Once a valid need is identified, a formal request is initiated, typically using a purchase requisition form. The purchase request is then verified and approved by the authorized officer of BFPO. The requisition is then piled up in queue waiting for approval. When the requisition is approved, the requester is notified and the requisition gets processed. The requisitions are sent directly to the printing press. The designated printing press then checks the inventory, if it has available stock or not. The printing press processes the requisition if it has the stock and delivers the product. When the requiring body receives the product, they need to submit an acknowledgement receipt through the system. If the stock is unavailable in the inventory, the system issues a delivery date and the requisition is processed according to the delivery date. The printing press and the BFPO will be able to track the progress of the product through their respective dashboards.

The vendor will have to design the e-requisition module in a way so that indenting offices or users will be able to select options between BFPO and any of the 3 press offices to place the e-requisition.

The indenting offices or users will be able to classify their e-requisition type according to their respective urgency or priority levels e.g: general, urgent etc.

  
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Once received an e-requisition the BFPO or press offices will estimate and assess their capacity (resources like printing ink, paper, time etc) to fulfill the e-requisition on time. If the estimate that the e-requisition cannot be fulfilled in due time with the available resources, then the BFPO will issue an NOC to the user. On the other hand, press offices will request the DG of BFPO to issue the NOC.

The following are the modules of e-Requisition system:

#### Module 01: e-Requisition Management

Requisition management is the process of creating, processing, authorizing, and tracking purchase requests within an organization. The module allows the users/different government bodies to make requisition for their required products. The system tracks the requisition request through various stages of its processing.

The following are features of e-Requisition management module:

#### Online Request Submission

The users or officials from different ministries/government bodies can submit requisition requests through an online portal or form. They requester can also set priority of their request. There will be an option for attaching documents along with the request. The documents may include weekly gazette, extra-ordinary gazette, forms, register book, diary, calendar, reports, publications, budget, speech, question papers, court cause list etc.

#### Acknowledgement Receipt

The BFPO authority will send a system generated acknowledgement receipt the concerned requesting body by means of notification.

#### Requisition Approval

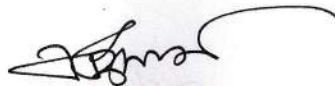
The authorized user will receive system generated notification for the requisition. The authorized user can view the requisition and verify it. The authority can then approve it and assign the requisition to a printing press of their favorability based on priority and availability of that press.

#### Status Tracking

The approval and assigning to press results in the generation of tracking id. The BFPO authority and the assigned press authority can track and monitor the status or progress of the production and publishing of the requested orders.

#### Feedback

The respective presses can submit any queries/messages/feedback related to the jobs assigned to them through the system. The BFPO authority will receive the feedback through a notification. The feedback will also be available to the BFPO authority in their respective dashboards.



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## Module 02: Notification Management

Notification management is the process of creating, managing, and delivering notifications to users. Notifications are generated whenever a requisition is made, approved, rejected, etc. Some key features of a notification management module include:

### Customizable message templates

The system allows users to create and manage customizable message templates, which can be used to quickly send out notifications.

### Targeted delivery

The system allows users to target notifications to specific groups of users or individuals based on criteria such as location, role, or device.

### Real-time delivery

The system can deliver notifications in real-time, allowing users to receive important information as quickly as possible.

### Multi-channel support

The system can send notifications through various channels such as email, SMS, push notifications, in-app messages and web notifications.

## Module 03: Report Management

The system will generate various reports based on the data from e-Requisition system. The reports will be in daily/weekly/monthly/yearly basis. The documents requested may include weekly gazette, extra-ordinary gazette, forms, register book, diary, calendar, reports, publications, budget, speech, question papers, court cause list etc. There will be a provision for filtering the results according to date, ministry, department, etc. The reports will contain information such as

- Requisition related
- Requisitions approval related
- Notification Report
- Audit report
- Delivery Report (word file and Excell file)
- Feedback report, etc.

## Module 04: Audit Trail

An audit trail, also known as an audit log, is a chronological record of system events that can be used to track and investigate activities within a system. Some key features of an audit trail module include:

### Timestamp

Each entry in the audit trail includes a timestamp that indicates when the event occurred.

### Event details

The audit trail includes information about the event, such as what type of action was taken and by whom.



### User identification

The audit trail records the user who performed the action, this could be a username or an IP address.

### Tamper-proof

Audit trails are designed to be tamper-proof, meaning that they cannot be modified or deleted without leaving a trace.

### Module 05: Dashboard

A dashboard is a user interface that displays key performance indicators (KPIs), metrics, and other data in a graphical format. Dashboards are often used to provide users with a quick and easy way to access and understand important information. Some key features of a dashboard include:

#### Customizable layout

Dashboards can be configured to display the data and metrics that are most important to the user.

#### Real-time data

Dashboards can be configured to display real-time data, allowing users to stay up-to-date on the latest information.

#### Visualization

Dashboards use various types of visualizations such as charts, graphs, and gauges to display data in an easy-to-understand format.

#### Data filtering

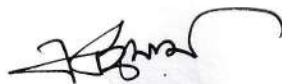
Dashboards can include features that allow users to filter the data displayed on the dashboard by different criteria, such as date range

#### Search and Filter option

The respected users will be able to search and filter the requisition requests using different criteria such as date, status, etc.

### Component 03: Store Management System

Store management refers to the process of overseeing the operations of a retail store. The consulting firm will develop a system through which Bangladesh Forms and Publication Office can manage their store in an automated process.



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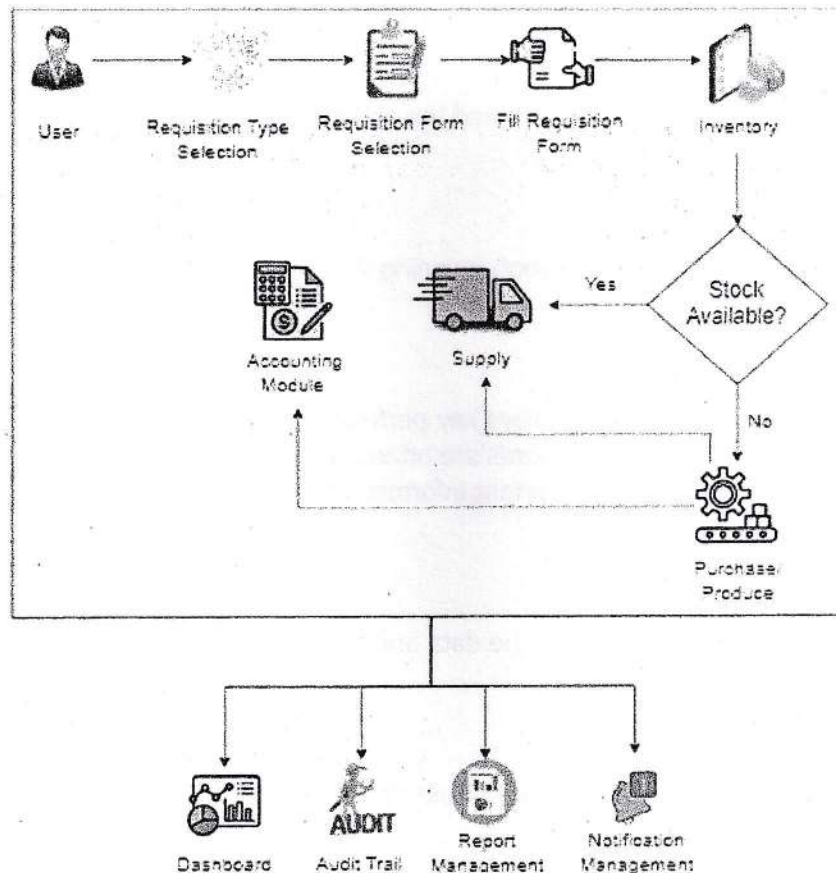


Figure: Process Flow of Store Management System

When any governing body makes a requisition to the Bangladesh Forms and Publication Office, the request is processed and checked in the inventory. If the materials are available the requisition is processed and supplied and if the materials are unavailable, the required materials are purchased, the inventory and accounting module data are updated and the product is supplied to the requester.

Some of the key aspects of store management module are:

#### Module 01: Inventory Management

The system allows the store managers to oversee and control the flow of goods and materials. The module allows store managers to keep track of the store's inventory levels, including monitoring stock levels, ordering new stock, and managing stock returns. The module also forecasts demand of the users based on the previous data of demands.

#### Inventory

The inventory manages stock and tracks items on the inventory. It helps companies identify which and how much stock to order at what time. It tracks inventory from purchase to the sale of goods.

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### Financial Management

Financial Management means planning, organizing, directing and controlling the financial activities such as procurement and utilization of funds. The system will be able to track data such as sales and expenses. The system will be integrated with an accounting software to streamline the financial data.

### Customer Management

The system allows users to track customer information, such as contact details and purchase history.

### Data Analysis

The system will analyze the sales data, inventory data and customer data to show trends of these data. These analysis of data enables the store managers to take better data driven decisions.

### Inventory forecasting

The system can generate forecasts of future inventory needs based on historical data and current trends.

### Security

Store management systems include security features such as user-level permissions, password protection, and data encryption to protect sensitive data and ensure compliance with industry standards.

### Module 02: Notification Management

The process of creating, managing, and sending notifications to users is known as notification management. Whenever transactions in inventory occur, notifications are generated. Some key features of a notification management module include:

#### Customizable message templates

The system allows users to create and manage customizable message templates, which can be used to quickly send out notifications.

#### Targeted delivery

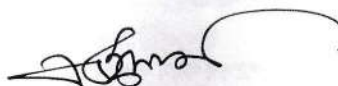
The system allows users to target notifications to specific groups of users or individuals based on criteria such as location, role, or device.

#### Real-time delivery

The system can deliver notifications in real-time, allowing users to receive important information as quickly as possible.

#### Multi-channel support

The system can send notifications through various channels such as email, SMS, push notifications, in-app messages and web notifications.



### Module 03: Report Management

The system will generate various reports based on the data from the inventory system. The reports will be in daily/weekly/monthly/yearly basis. The report results can be filtered using date range, ministry, departments and many other parameters. The reports will contain information such as

- New product enters into the inventory
- New Products
- Inventory value
- Usage of Inventory
- New forecasted data
- Shortage of an item
- Inventory Summary, etc.

### Module 04: Audit Trail

An audit trail, often referred to as an audit log, is a time-stamped record of system events that can be used to monitor and look into system activity. Some key features of an audit trail module include:

#### Timestamp

Every record in the audit trail has a timestamp that shows when the event took place.

#### Event details

The audit trail contains details regarding the incident, including the sort of action taken and by whom.

#### User identification

The audit trail saves the username or IP address of the user who executed the action.

#### Tamper-proof

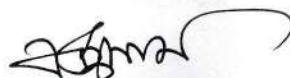
To be tamper-proof, audit trails must be unable to be altered or removed without leaving a trace.

### Module 05: Dashboard

Key performance indicators (KPIs), metrics, and other data are shown graphically on a dashboard, which is a user interface. Users frequently utilize dashboards to give them a quick and simple way to obtain and comprehend crucial information. The dashboard displays an overall summary from the data retrieved from the inventory. Some key features of a dashboard include:

#### Customizable layout

Dashboards can be tailored to show the information and metrics that the user cares about most.



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### Real-time data

Users can keep up with the most recent information by configuring dashboards to display real-time data.

### Visualization

Dashboards display data in an understandable manner using a variety of visuals, including charts, graphs, and gauges.

### Data filtering

Dashboards can have features that let users filter the data they see by a variety of parameters, like date range.

## Component 04: Online Sales and Monitoring System

Online Sales and Monitoring System will allow to the users to buy Gazettes, Forms and others government related documents. The consulting firm will develop a system for BFPO where BFPO will sell Gazettes, Forms and others government related documents. Users can find and buy the published Gazettes and others government related documents in this system easily. There will also be a Monitoring system which will be developed by the consulting firm where an authorized person will able to see and track the payments and sold documents record. Some of the key modules of online sales and monitoring system are:

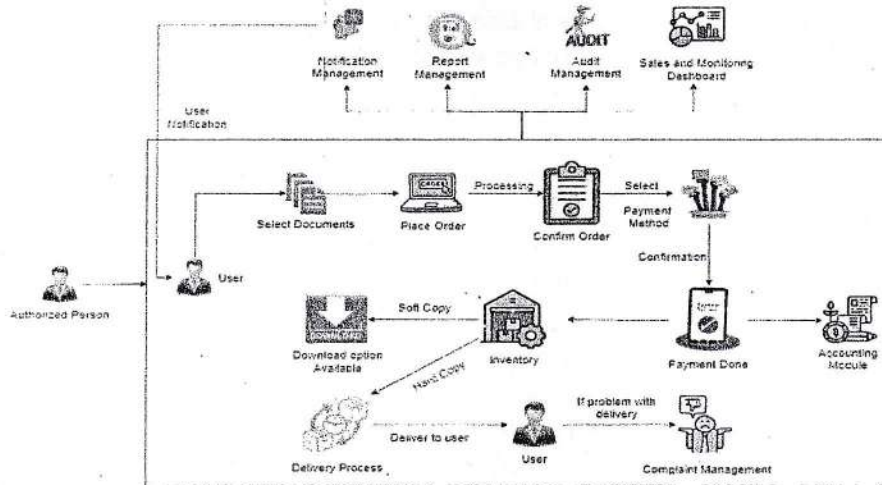


Figure: Process flow of sales mechanism

When a user wants to buy any document from the BFPO, they select and place order in the system. When their order is confirmed, they have to make the required payment using the integrated payment gateways in the system. After payment, if the requested product is soft copy, then the option to download and share becomes available and if the document is hard copy, then it is processed and delivered to the user. If the materials required to deliver the product are absent in the inventory, then the materials are purchased and then the delivery is processed. The user also has the ability to complain about the delivery process, if they face any problems regarding the delivery process.

## Module 01: Sales and Monitoring System

### Online Agent Registration

The agents will need to be registered into the system. There will be an online registration form in the system for registration as agents. The form includes information such as:

- Full Name
- Date of Birth
- Email
- Gender
- Ministry
- Department, etc.

After submission of the information, the agent's information will be verified by different officials and after a series of approval process, the agents will be registered in the system. After successful completion of registration, he will get system generated verified certificate for specified period. The registered agents will get individual dashboards through which they can buy government published Gazettes, Forms and other public documents (Weekly/Monthly/Yearly).

### Profile Manage

The system will have a section for profile management, where the user can check and update their respective profile information. User will able to add their information like name, date of birth, address etc. The users can view, edit and delete information in their profiles.

### Order Management

There will be an option for managing orders through this system. The Agents can view the document list available and place orders for it using the e-Requisition system. The orders will have order ID which would be used to track the orders. After placing the order, it would be awaiting approval. The agents can track and view their orders.

### Payment Gateway and Confirmation Receipt

The system will be integrated with various payment gateways, through which user can pay for their required documents. The payment for the goods purchased from the BFPO sales centers will be resolved utilizing MFS and/or online payment solutions. The payment gateway system will be integrated with the government recognized standard payment gateway system (Government challan payment system, Bank Payment & MFS).

After successful payment, the system will generate a confirmation receipt, which will be sent to the user by a system generated notification. The payment receipt will contain the following information:

- Name of buyer
- Product name
- Product price (excel file)
- Date
- Payment details, (excel file) etc.



## Module 02: Notification Management

Notification management is the process of creating, managing, and delivering notifications to users. Notifications are generated whenever a document is uploaded, brought, payment confirmation, etc.

Some key features of a notification management module include:

### Customizable message templates

The system allows users to create and manage customizable message templates, which can be used to quickly send out notifications.

### Real-time delivery

The system can deliver notifications in real-time, allowing users to receive important information as quickly as possible.

### Multi-channel support

The system can send notifications through various channels such as email, SMS, push notifications, in-app messages and web notifications.

## Module 03: Report Management

The system will generate various reports based on the online sales and monitoring data. The reports will be in daily/weekly/monthly/yearly basis. The reports can be filtered using parameters such as date range, Department, Ministries, etc. The reports will contain information such as

- Requested Documents
- Payment collected
- Pending Approvals
- Payment Summary
- Audit report
- Notification Report
- Sales Data, etc.

## Module 04: Audit Trail

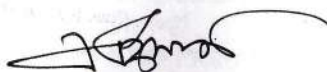
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### Timestamp

Each entry in the audit trail includes a timestamp that indicates when the event occurred.

### Event details

The audit trail includes information about the event, such as what type of action was taken and by whom.



### User identification

The audit trail records the user who performed the action, this could be a username or an IP address.

### Tamper-proof

Audit trails are designed to be tamper-proof, meaning that they cannot be modified or deleted without leaving a trace.

### Module 05: Dashboard

Key performance indicators (KPIs), metrics, and other data are shown graphically on a dashboard, which is a user interface. Users frequently utilize dashboards to give them a quick and simple way to obtain and comprehend crucial information. The dashboard displays an overall summary from the data retrieved from the sales. The dashboard will view the information using info graphs, charts, tables, etc. Some key features of a dashboard include:

#### Customizable layout

Dashboards can be tailored to show the information and metrics that the user cares about most.

#### Real-time data

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#### Visualization

Dashboards display data in an understandable manner using a variety of visuals, including charts, graphs, and gauges.

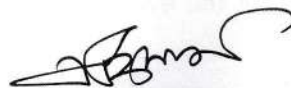
#### Data filtering

Dashboards can have features that let users filter the data they see by a variety of parameters, like date range.

### Component 05: Common Services Configuration

Common services configuration refers to the setup and configuration of services that are commonly used in an organization or network. They are often designed to be reusable, modular, and easily configurable, allowing them to be easily integrated into different systems and applications. By using common services, organizations can reduce the costs and complexity associated with developing and maintaining separate, standalone services for each application or system.

The selected vendor needs to migrate legacy data to the newly developed system. Also, the vendor may need to migrate data from Department of Printing and Publications (DPP) sub offices to the newly developed system. This migration/process will be a part of whole development.

  
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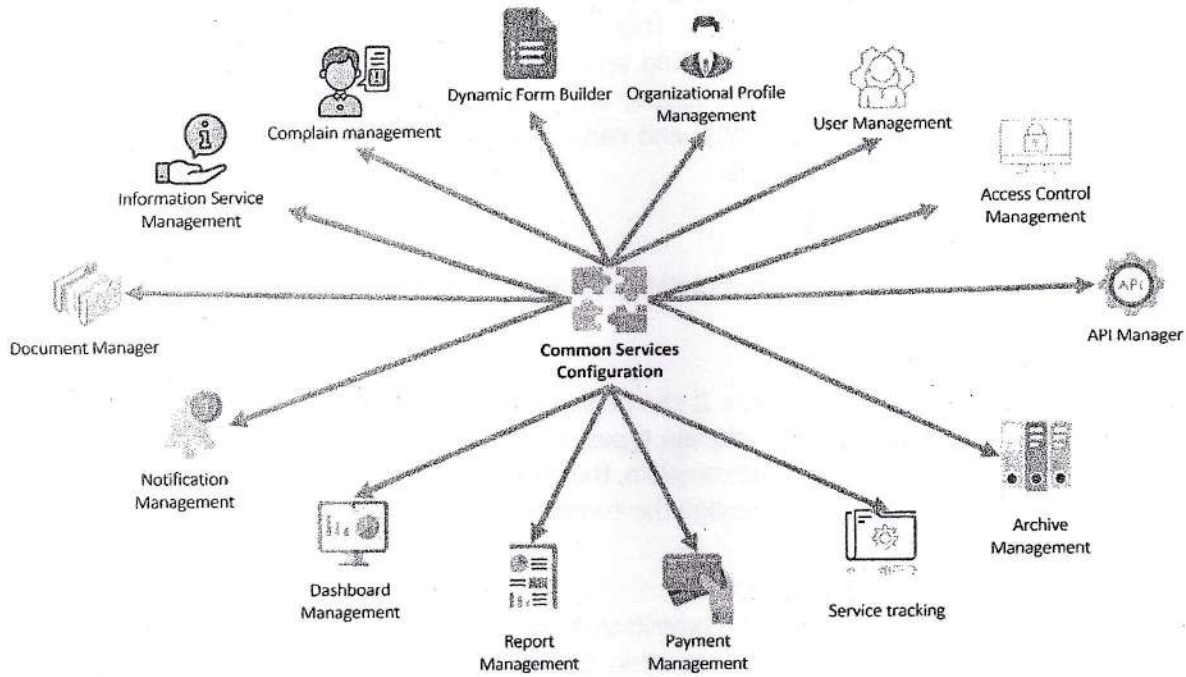


Fig: Components of Common Services Configuration

## Module 01: Information Service Management

Information Service Management (ISM) is the process of managing and organizing the flow of information within an organization. It includes the management of information systems, data management, and technology infrastructure to ensure the efficient and effective use of information to support the goals and objectives of the organization. ISM also involves the management of information security, data governance, and compliance with legal and regulatory requirements.

### Content management:

Manage digital content dynamically Using the system's control panel.

### Smart Search:

Text content searching option having intelligent search suggestion.

### Service Eligibility Checker:

There should have an eligibility checker for information and service consumer to access or avail the information and services.

### Dynamic FAQ Management:

There should have instruction/requirement/FAQ Manager To manage and display necessary instruction/requirement and FAQs.

## Module 02: Complain management

Complaint management refers to the process of receiving, addressing, and resolving complaints made by customers or clients. This can include identifying the source of the complaint, determining the cause, and taking appropriate action to resolve the issue and prevent it from happening again in the future. Effective complaint management can help improve customer satisfaction and loyalty, and can also provide valuable feedback that can be used to improve products or services.

### Add Complain:

Any user or service consumer can add complain as a registered user or anonymously.

### Add Complain Types:

There can be different types of complain. It can be service specific or any other issue specific. The system will have option to add complain types, Complainer will select complain type to lodge the complaint. For service specific complain, the complainant should put service application ID for tracking the service status to manage the complaint.

### Inspection Committee Management:

The authority can form an inspection committee to access insights of a complaint. The committee can set meeting and run inspection on the complaint and submit report to authority.

### Complain tracking

The complainer will have a tracking ID after lodging a complaint S/he will be able to check the status of the complaint any time.

### Complain Feedback Management

After resolving a complaint, the complainer will share his/her feedback with rating. This is very crucial to enrich the service process and ensure better complain management.

### Report Management

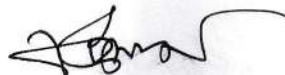
The system needs extensive report management of the complaints. Management will have option to generate reports with all possible parameter combination like geo-location, date range, organization, department, users etc.

## Module 03: Organizational Profile Management

Organizational profile management refers to the process of maintaining accurate and up-to-date information about an organization, such as its structure, mission, goals, products, services, and contact information. This information is used to identify the organization's strengths and weaknesses, and to communicate with stakeholders such as customers, employees, investors, and partners.

### Organizational Profile Information Management:

Insert, update, delete organization's basic information including name, about organization, hierarchy, mission, vision etc.



### Services And Service-Related Information Management:

Insert, update, and delete organization's service list, instructions, and procedures.

### Mission, Vision, Management:

Insert, update mission & vision information of the organization

### Module 04: User Management

User management is the process of creating, modifying, and maintaining user accounts for an organization's system, software, or website. This includes tasks such as creating new accounts, assigning roles and permissions, resetting passwords, and deactivating or deleting accounts. User management is an important aspect of ensuring the security and access control of an organization's systems and data.

### Organogram management module

The office Organogram in the government of Bangladesh is designed to provide a clear chain of command and ensure efficient functioning of government departments and agencies.

There will be mainly 3 types of users: end users, visitors and admin users. The roles and users of admin/office users will be governed by an organogram management module. The super admin of the system will be allowed to create, edit update the users of the other admin users and also update the organogram if required.

### User Account Management

User account management should have the following options:

- Insert, update, block, delete users -Users can register in the system.
- System admin can assign users to their designations with designated roles.
- System admin can assign users to their designations with designated roles.
- System admin can release user from his/her designation.

### User Role Management

Insert, update user roles. Assign different types of roles to different kinds of users.

### User Account Verification

There will have option to verify users based on email and/or SMS.

### User Account Recovery

Easy implementation of a "Forgot your password?" feature in this Platform can choose between three methods: using email or using a secret question or using SMS based secret code.

### Change Password

Any user can change his/her password any time to address security challenges.



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## Profile Management

System will have provision to add and update user account information such as the password, email, phone number, photo, signature etc.

## Module 05: Access Control Management

Access control management is the process of controlling access to resources or systems within an organization. This includes identifying and authenticating users, granting or denying access to specific resources, and monitoring and logging access attempts. Access control management helps to ensure the security and integrity of an organization's systems and data by preventing unauthorized access or changes.

## Multi-Layer Access Control Mechanism

The system will have system access control panel. Every system user will be assigned to one or multiple roles. Every role should be assigned to a set of actions or activities. The system admin will have provision to assign roles to users and to assign set of actions/activities to roles. There should have provision to assign layer, section, department, office-based access management system

## SSO

This should provide options to users to access all of his/her assigned systems with single user and password. No multiple access credentials needed to access multiple systems. The users can log in from D-Nothi/Doptor.

## Module 06: API Manager

An API (Application Programming Interface) Manager is a software or platform that helps manage and secure the use of APIs. It typically includes tools for creating and managing API endpoints, controlling access to APIs, monitoring usage and performance, and enforcing security policies

All API need to integrate with Doptor API Manager to ensure and establish secured channel of API communication.

## Module 07: Document Management

Document management refers to the process of organizing, storing, and tracking electronic or physical documents. It typically involves the use of software or systems to capture, store, manage, and distribute documents, as well as to track and control access to them.

## Document store and management

User will upload documents, system will categorize, index and store those. System user will have provision to add, update and delete documents.

## Document optimization

The system will have mechanism to automatically optimize raw documents special image or video files uploaded from different devices. Usually, the sizes of files are excessive than system really needs to process services. So, an automated and configured optimization mechanism is needed to optimize and make the system efficient.



### Document processor and Management

The system will need to have generate special types of documents like certificates, approval letters, testimonials etc. The system should option to store, share, circulate and use the document as reference to another system.

### Document Verification Management

There will have option to verify a document once delivered from the system.

### *Document Meta Data Management*

There needs to have options to store meta data associated with the documents for better searching, sorting, indexing and archiving.

### Document Upload and Download

There should have options to upload and download documents. There will be access control to document download options depending on the sensitivity and security of the documents.

### Document Archiving

There will be large number of documents stored in the system over the time. So. need to archive documents with proper indexing and mapping to faster and to ensure efficient document management.

### Module 08: Notification Management

Notification management refers to the process of controlling the display and behavior of notifications on a device or application. This can include setting rules for when and how notifications are displayed, creating custom notification sounds, and grouping or prioritizing certain types of notifications. It can also include the ability to turn off notifications altogether or for specific apps, as well as the ability to clear or archive notifications that have already been received.

### Notification Settings Management

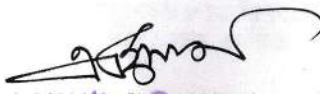
There should have provision to create, configure and manage notification rules for different service delivery process.

### Notification Medium

There are two mediums of notifications- SMS, e- Email, SMS: Sending SMS to service consumer and provider's mobile phone in real time is an important concern to process and deliver services efficiently. Email: Proper and timely notification is a vital concern at required point of each service's life cycle. Email notification is very usual among 3 types of notifications like Email, SMS and System notification. There should have template with specific format for these notifications. The systems can access Queue manager and Enterprise Bus for these notifications.

### Notification Types

System generated notification is another important concern and should be ensured along with Email/SMS notification in service life cycle Notification can be 3 types configurable, call to action, alert und medium can be via e-Mail, SMS and application systems.

  
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## Module 09: Dashboard Management

Dashboard management refers to the process of creating, designing, and maintaining a dashboard, which is a visual display of information that provides an overview of a particular system or set of data. Dashboards are commonly used to present data in a way that is easy to understand and can be used to monitor performance, track progress, and make decisions. Dashboard management includes tasks such as selecting the data to be displayed, designing the layout and visual elements of the dashboard, and configuring the dashboard to update automatically with new data. It also includes the ability to customize the access and permissions to the dashboard, schedule and export the reports, and integrate with other data sources and third-party tools.

### Institute Wise Individual Dashboard

There will have multi-layer dashboard for different types of senior officials to monitor overall activities under his/her jurisdictions so that s/he has overview of the whole scenario to take informed decision to ensure smooth and efficient service delivery. The access of the dashboard will be configurable by super admin user's access.

### Dashboard Template Management

There can be different types of dashboard templates based on user layers and types and systems.

### Multi-Layer Access Mechanism

There will have different levels of users in the dashboard. So, need proper access control for those users to assign access of relevant data/contents to relevant users.

### Dashboard Sharing

There will have provision to share or circulate dashboard information to other systems when necessary.

### Intelligent Insights and Directives

The dashboard will generate intelligent insights and directives to assist higher official to take action to boost up and enrich quality service delivery.

## Module 10: Report Management

Report management refers to the process of creating, designing, and maintaining reports. Reports are a way to present information in a structured format is used to provide detailed information on a particular topic or set of data. Report management includes tasks such as selecting the data to be included in the report, designing the layout and visual elements of the report such as select columns, change the name of columns, and viewing the report with new data. It also includes the ability to customize the access and permissions to the report, schedule the report to be generated and exported, and integrate with other data sources and third-party tools.



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তেজগাঁও, ঢাকা-১২০৮

## Generate and Manage Report

The institutions need different types of reports periodically or in instant need basis. Here are some of examples:

- Report on Annual Performance Agreement (APA)
- Report on Progress
- Report on Pending Response
- Report on Audit and Law Report
- Report on Monthly Coordination Meeting
- Investigation Reports

## Report template

There should have pre designed report templates for report generation. System users will be able to choose a template and prepare report to serve purpose. Users can use it as a template.

## Report Sharing and Circulation

System users will be able to export and share the reports to others.

## Report Scheduler

There will have a scheduler to generate reports and even to circulate those to respective authorities/users as per configuration.

## Module 11: Payment Management

Payment management refers to the process of handling financial transactions and payments, including the acceptance, processing, and recording of payments. It can include tasks such as setting up and maintaining payment methods, such as credit card and electronic funds transfer (EFT) systems, reconciling payment records, and handling disputes or refunds. It also includes setting up and maintaining security and compliance measures to protect sensitive financial information and ensure compliance with laws and regulations.

### Payment gateway Integration

The service recipients will pay and get their payments through a payment gateway system integrated with this platform. System users can manage payments to users and track/monitor payment status. Here are some of options needed in the payment system.

- Ensure at least one MFS for Payment process.
- Need transaction log and audit trails

## Module 12: Service Tracking

Service tracking is the process of monitoring and managing the status and progress of services provided by an organization. This can include tracking the status of service requests, monitoring the performance of service providers, and managing service-related tasks such as scheduling and assigning resources. Service tracking can be done through manual means, such as by using a spreadsheet or calendar, or through specialized software, such as a service management system. These systems can provide capabilities such as automated task assignment, real-time status updates, and reporting and analytics on service performance. Additionally, service tracking may also involve capturing customer feedback, and monitoring customer satisfaction levels.

## Real-time Service Tracking

Every service will have a service tracking id. Service recipients will be able to track their application status in real-time using the service ID. The system should display the status via system message, email or SMS as per the configuration.

## Module 13: Archive Management

Archive management is the process of organizing, preserving, and managing historical records and information that is no longer actively used but still needs to be retained for legal, regulatory, or business reasons. This can include documents, emails, digital files, and physical records. Archive management includes tasks such as identifying and classifying records that need to be retained, creating and maintaining an inventory of the records, and storing the records in a secure location.

### Archive Scheduler

There will have a scheduler to achieve data and content as per the schedule.

### Archive Configuration

There will have a configuration setting to set different parameters needed for regarding the overall archiving process management.

### Archive Log Management

System will store log for the archiving process.

## Module 14: Help Section

There would be a help section accessible from the entire system. It should be designed to assist users in understanding and effectively using the software. The primary purpose of software help section is to provide guidance and support to users, helping them navigate through the software, understand its features, and troubleshoot issues they may encounter.

- 1. Content:** Help sections should have the resources such as:
  - **Tutorials:** Step-by-step guides to help users learn how to use specific features or accomplish tasks.
  - **FAQs (Frequently Asked Questions):** Common queries and their answers, addressing typical issues users might face.
  - **Troubleshooting:** Guidance on identifying and resolving common problems or errors.
  - **Glossary:** Definitions of technical terms and jargon used within the software.
  - **Contact Information:** Ways for users to reach out for additional support, such as customer service or community forums.
- 2. Formats:** Help section should be presented in various formats to cater to different learning preferences and needs:
  - **In-App Help:** Integrated directly into the software interface, accessible via menus or dedicated help buttons.



- **Online Documentation:** Hosted on the system, searchable and downloadable.
- **Video Tutorials:** Visual guides demonstrating software usage or features.
- **Community Forums:** Facebook Group-based user-driven platform where users can ask questions, share tips, and find solutions.

## Scanning and Data Entry

The scope of work entails a project for a selected firm to scan and digitize approximately 800,000 pages of books, forms, and other documents of various sizes. The task includes capturing, proofreading with the domain experts, entering the required information and metadata from the documents into a digital format.

The vendor will be responsible for the entire process of scanning, proofreading and data entry of the documents. The vendor should plan to perform the work on the client's premises. This means that the selected firm will need to set up a workspace at the client's location to perform the scanning and data entry tasks.

The scanning process involves the use of specialized equipment to create digital copies of the physical documents. The vendor will be responsible for procure or hire, managing all the equipment needed like scanner or any other relevant hardware devices for the scanning purpose with their own cost. The vendor will need to ensure that the scanning process produces high-quality images that are easy to read and accurate.


The data entry part of the project involves extracting relevant information from the scanned documents and entering it into a digital format. The required information could include names, addresses, dates, and other relevant data depending on the nature of the documents being scanned.

The metadata, on the other hand, is descriptive information about the documents that can be used to help organize and retrieve them. This may include document titles, author names, publication dates, and other relevant information.

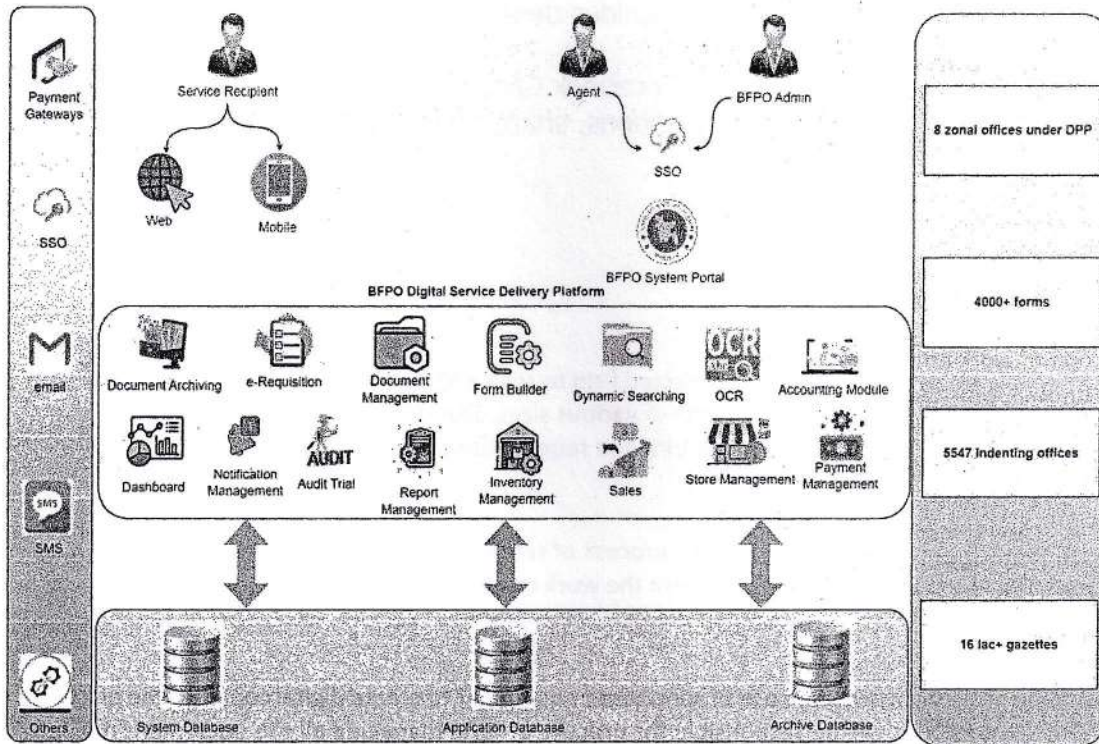
Overall, the selected firm will need to have the necessary equipment, personnel, and expertise to perform the scanning and data entry tasks accurately and efficiently within the client's premises.

## Solution Architecture


Solution architecture plays a useful role at the initial stage of understanding of the solution ideation, solution design, and solution implementation plan. Here the solution architecture is expected to establish the complete understanding of the business context. i.e., Service delivery and receiving process in digital form, the vision, objectives and ultimate requirements of this solution for proposed application. The overall scope of solution architecture may be designed based on the proposed business architecture which describes bellow the holistic, multidimensional business views, high-level service delivery scopes and access points, major stakeholders' involvement and relationship (Organizations are acting as

  
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service provide including ministry/division itself.), major integration scopes and high-level information management etc.



This architecture should define the process of developing and documenting covering the context of the proposed e-Service solution including all impactful and applicable architecture domains such as Micro-Service approach, accessibility, business, data, application, technology, integration, cross cutting issues like security, management operation etc. The vendor shall submit a **"Comprehensive Solution Architecture"** in their technical proposal which may include business, information, application, and technology architecture focusing on the scope mentioned in this TOR.

  
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## SDLC Approaches & Methodology

Considering the current context of digital government implementation of Bangladesh, it is proposed hereunder a tailored SDLC methodology for the development of this integrated service delivery platform. Under the scope of this SDLC methodology, for effective, efficient, timely and fruitful development of this system and achieving early release as a tangible result, the scope of this assignment can be divided into multiple parts (components & modules) based on priority and dependency of the modules and features to be developed and released. In the inception phase, the parts of the components/modules will be defined by the concerned authority (implementing agency) discussing with the Firm.

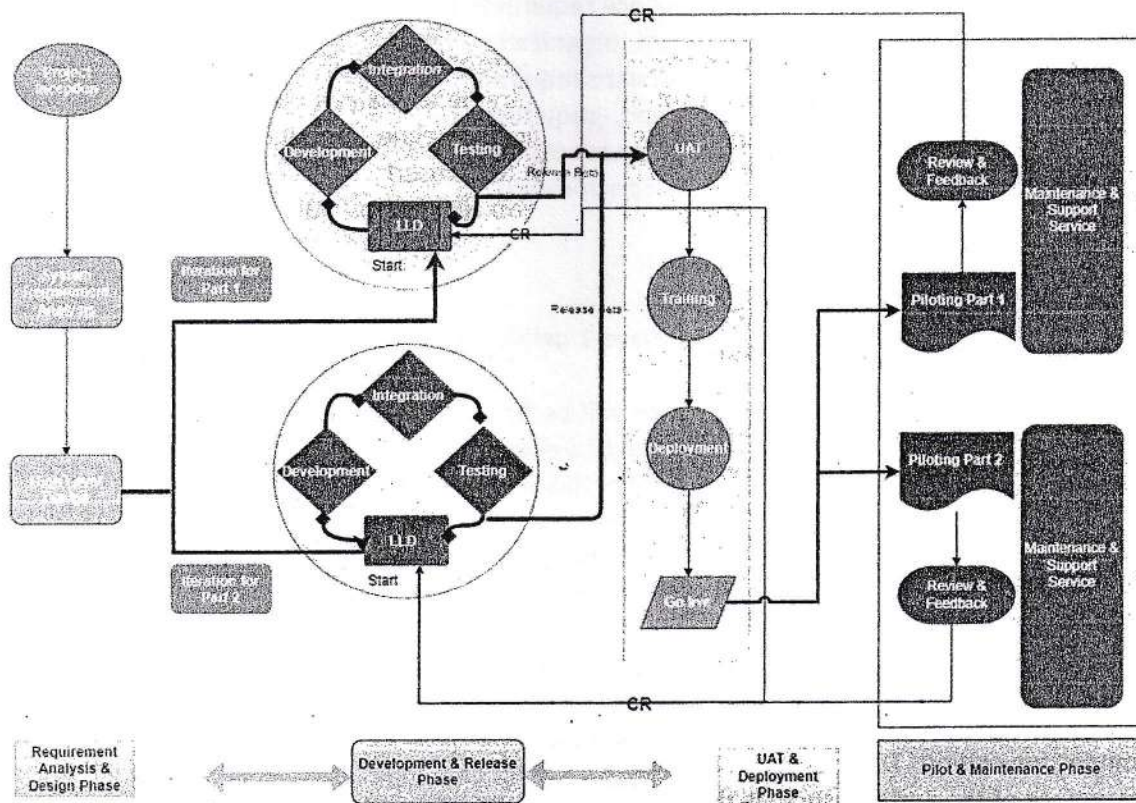


Figure: Hybrid SDLC Methodology (Dividing scopes into two parts)

The methodology covers the following phases:

### Phase-1: System Analysis & Design

#### Project Inception:

The SDLC process will be started from this phase. Project will be initiated with a kick off meeting between Firm, implementing agency & relevant stakeholders. At this phase, the entire project scope mentioned in TOR will be briefed and discussed extensively, the part boundaries will be defined, preliminary project implementation timeline, project management plan format & content structure will be discussed. At the end of this phase, the applicant will submit a comprehensive and detailed project management plan for client's approval with a power point presentation and submit hardcopy of documents. On receipt of approval of the project management plan, only the phase will move to Phase 2.

**Deliverables:** Approved Project Management Plan

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### System Requirement Analysis:

The applicant will initiate the assignment with this phase which includes requirement finalization for the entire (Part 1, Part 2, Part 3,...) assignment scope from functional aspect. Proposed e-Services requirement study, analysis and finalization is a very important phase in the entire SDLC. It is expected that, the selected the applicant will carry out detailed requirement study and analysis on each and every scope of e-Service that mentioned in the TOR. Under this scope of work, the selected the applicant has to analyze the detailed functions, processes, documents, actors, service delivery sites and infrastructure of the relevant services precisely of the concerned organization. At this phase, applicant's ultimate objective will be finalization of the e-Service requirements in details under the scope of TOR and receiving approval of the concern organizational authority. Here the applicant is requested to propose and submit a software requirement analysis plan which should cover the relevant activities to be performed, required timeline, specific deliverables to be produced, determine dependencies and resources to be used.

**Deliverables:** Software Requirement Specification (SRS) and UI based non-functional prototype/ Mock.

### High-level System Design (HLD):

The phase-2 is entirely dependent on phase-1 deliverables which will only be initiated after the completion of phase 1.

The scope of the high-level design phase will be based on the entire assignment's (Part-1, Part-2, Part-3,) approved SRS. However, the HLD document (if required) can be updated based on the changes of SRS i.e. version changed of SRS on received CR.

Here, high-level design will ensure the architecture that would be used for developing this e-Service solution. The architecture diagram will provide an overview of an entire system, identifying the main components that would be developed for the e-Service and their interfaces.

The ultimate deliverables of this design will be high-level design document or HLDD which adds the necessary details to the current assignment description to represent a standard model for coding. This document includes a high-level architecture diagram depicting the structure of the system, such as the database architecture, application architecture (layers), application flow (navigation), security architecture, technology architecture and integration blueprint.

**Deliverables:** High-level design document or HLDD.

### Phase-2: Development & Release:

Based on the priority, importance and dependency, the project scope will be divided into two or multiple Parts as per organizational consideration and decision. Each Part will be completed through an iteration. The iteration process may follow the scrum process with several sprints of Agile Methodology. The iteration includes several steps such as LLD (Low Level Design), Development, Integration, Testing, Review and Release. For detail clarification the "Iteration 1" steps for Part 1 are described below:



### Iteration 1 for Part 1:

Low-level design (LLD) is a component-level design process in which the actual software components, modules and functional requirements are designed. This process can be used for designing data structures, required software architecture, source code and ultimately performance algorithms. Vendor will have to submit a report on LLD based on which development will be started.

**Deliverables:** Part1 LLDD version 1.0

### Development:

At the development stage based on the LLDD, a development team will be mobilized who will start the coding process following the standard code convention, code level documentations, header of each file, algorithms, interfaces, code compression and APIs should be supplied with proper description within the given schedule as per the plan. The team will strictly follow the standard procedure of version control of codebase, database and related files using stable version control tools. The vendor will use standard project management tools to manage and track issues as well as monitor development progress. The client (Govt) or client nominated representative/product owners need to have access and control to the version control system and in project management tools to manage and monitor the development process.

**Deliverables:** Developed features/modules/components/applications, code documentation, algorithm & interface related documents, development & versioning report, test driven development (TDD) approach should be included at this stage to ensure smooth development etc.

### Integration


Considering the Integration requirements and scopes defined in the SRS, HLDD & LDD for this e-Service application, the vendor must perform the planned integration activities. At this stage, the vendor will perform all necessary above-mentioned tasks & follow guidelines regarding integration to make the e-Service application interoperable.

The vendor will be responsible for integration of the system with payment solutions (MFS, bank, card), NID services (election commission) for KYC purposes and postal delivery system of the Bangladesh Post Office for the delivery of the documents.

The vendor should be making the system modular so that it can be integrated with any other government services and other future components.

The vendor should consider the followings in this regard:

- System should have the ability to build and publish APIs/Services to a selected set of gateways in a multi-gateway environment
- System should support enforcement of government and system policies for actions like API/Service subscriptions, application creation, etc., via customizable workflows
- Manage API/Service visibility and restrict access to specific agencies or systems
- Manage API/Service lifecycle
- Ensure API/Service security by restricting API access tokens to domain/IPs, validating APIs payload contents against a schema, applying security policies to APIs authentication and authorization and provide threat protection, bot detection and token-fraud detection



- System should generate JSON web tokens for consumption by back- end servers
- System should provide a developer portal to search APIs by provider, to provision the API keys, subscribe API, notification for new version of subscribed APIs and view of the API consumer analytics.
- System should have proper capabilities to manage and scale API traffic and enforces rate limiting and dynamic throttling based on usage quotas and bandwidth quotas.
- System should be horizontally scalable with easy deployment into cluster using proven routing infrastructure
- System should have high performance pass-through message routing with minimal latency
- System should provide a pluggable analytics framework for API usage, like, requests, responses, faults, throttling, subscriptions etc.
- System should track consumer analytics per API, per API version, per tiers and per consumers
- System should have configuration payment schemes to monetize API usage
- System should monitor SLA compliance for the API
- System should have provision to do the proper/required integration with SSO System
- System should have a live API monitoring dashboard

### Testing

The software testing process is one of the most vital phases through which it will be expected to evaluate each and every functionality of the proposed software application with an intent to find whether the developed application's functional features meet the specified requirements or not.


The applicant should prepare an extensive testing plan so that any functional failure can be detected and corrected timely and properly. The scope of the software testing should include the examination of code as well as the execution of the code in various environments and conditions as well as examining the aspects of the code; does it do what is required?

The applicant must propose a comprehensive testing plan in their technical proposal for this e-Service application starting from development to deployment that is covered in the full test life cycle. This testing plan should cover all the standard testing approaches applicable for this e-Service solution which may include phase-wise testing activities like test scripting, test documents, testing tools, testing process, test log, result and report formats i.e. expected test deliverables. The applicant should submit testing plan which may include standard test approaches. Some are mentioned below as examples for reference.

- Installation testing
- Compatibility testing
- Stress Testing
- System Functional testing and non-functional testing
- Integration testing

**Deliverables:** Test Plan, Test Reports.

**Note:** Based on the Test reports and received feedback (Change Request) the LLD, version, and developed application may be changed accordingly.

  
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### Release:

After successful completion of "iteration 1" that is predefined, successive steps will be executed properly with expected quality, the developed application will be released as a Beta version considered to be deliverable of this iteration. In case of unsatisfactory testing reports, the iteration will be continued accordingly without any release.

**Deliverables:** Released application (Part 1) with versioning

### Iteration 2 for Part 2:

For another part i.e. another same iteration may be started based on the mobilized team's availability and mobilization plan. As for iteration 1, the engaged team for LLD will be released almost just after entering into the development step, so that team could be assigned for the LLD of iteration 2. In the same way, the development team of iteration 1 will be engaged mostly till integration; therefore, a part of this team can be mobilized for the development phase of iteration -2. Therefore, based on the availability of adequate resources, engagement, and mobilization plan, the applicant may run both parts i.e. 1 and 2 almost simultaneously at different development iteration plans. In this document, iteration -2 will follow the same steps as Iteration -1 to deliver the part and release as a BETA version for UAT and deployment.

### Phase-3: UAT & System Deployment

As soon as one iteration releases any developed application after completing the predefined steps and processes, this released version will be entered into this immediate phase i.e. UAT and system Deployment. The basic objective of this phase is to receive user feedback, adjust them, take final consent or acceptance of user, and ensure system testing for deployment, training and taking final deployment actions to GO LIVE. There may be basically 3 major steps are involved in this phased which are described hereunder:

#### User Acceptance Test (UAT):

Just after the release from iteration as a BETA version, the developed application will enter into this UAT Process. At this step, the system will be tested by the users of different levels extensively to receive their precise feedback and review. Based on the received feedback and review, the process may lead to the previous state i.e. may enter into the previous iteration again with defined CR to adjust. Finally, when user's valuable feedback and review will be addressed, this application will be ready for User Acceptance. This step will end with the user acceptance for the BETA version to move forward.

**Deliverable:** Accepted application (With version) and UAT Report

#### User Training:

After completion of the UAT, at this step, User training will be required to be provided as per a predefined project management plan and timeline. User training has to be very extensive and detailed so that users of each level will receive this training and will be capable to operate and run this system without any major technical dependencies.

**Deliverables:** Training Manual, Training Plan, Training Feedback, Training Report



## Deployment

Deployment is a very important step in the SDLC before going LIVE where different types of necessary and standardized activities should be performed as per a predefined plan. The deployment plan should be prepared in a comprehensive manner by choosing the appropriate deployment method and the right deployment checklist. Automating the deployment process as much as possible is a wise decision at this step. Obviously adopting continuous delivery and using an integration server is necessary. Deployment preparation also may include another code deploying entering version release notes, checking that the required server is running smoothly, and configuring the staging environment properly. At this step, there are various testing processes that should be performed as a part of the obvious process. The deployment test plan and method should be chosen well ahead. This may include deploying the update to the test environment, running each and every test code/script, and reviewing results. Finally, this deployment process may continue with copying the updates to the production environment, running any necessary scripts, setting changes for live and testing on the live server before going LIVE.

## Go Live

Successful deployment of any developed and tested application will lead finally to the "GO LIVE" state. The inauguration of the application may take place immediately when it enters into this stage. As inauguration is the formal session to expose or open the application to the end users/citizen, therefore proper consent of the concerned implementation Organization/Agency is required before going LIVE.

## Phase-4: Piloting & Maintenance

It may be stated that the pilot phase will be started immediately with the starting of "GO LIVE" which should last a maximum of 3-6 months based on the decision of the implementing Agency/Organization and predefined accepted pilot implementation plan. The applicant will provide all necessary support to ensure smooth operation in the pilot phase. It may be mentioned here that, some change requests (CR) based on the end users review and feedback at this piloting stage may be required to be accepted and CRs will be adjusted through predefined development cycle. Obviously at this stage, those CRs must be considered aligned to the Terms of Reference (ToR) of the assignment avoiding major functional changes that may create alternation on architecture, database structure and development complexity. In this document, CRs related to UI and UX, frontend scripting and content presentation level may be accepted. In this piloting phase, technical support, continuous training, timely reporting, receiving end user's feedback and measuring the overall performance of the application are the important factors that should be taken care of by the applicant at this stage.

## Maintenance and Support:

Maintenance phase will be started in this SDLC methodology. This phase is very important because the actual maintenance support service will be started by the applicant and the implementing organization will also take measure for scale up implementation of this software based on the result of the pilot. Those two important issues of this methodology are described hereunder:

In document of software implementation, especially for the e-government, maintenance support service plays a very vital role. The applicant needs to provide this maintenance support service as per the predefined plan and action which will be approved by the



implementing organization at the inception phase under the project management plan. At this maintenance phase, the main objective will be ensuring this e-government or digital service application operation is running smoothly, uninterrupted and without any hassle or complexity. Some factors mentioned below are very important at the time of maintenance support service by the Firm.

1. The developed and deployed digital eservice application should run smoothly and bug freely.
2. In document of any technical problem or support requirement, applicant's response for solution has to be very prompt.
3. Based on the type of technical complexity and support requirement, the response and problem solution plan have to be predefined and precise through a signed SLA.
4. The applicant must consider contingency plan to manage and solve sudden complexity, technical problems arose and support request.
5. The help desk remote support should be comprehensive, strong, standard and adequate.
6. Improving user engagement, user training and receiving user review & feedback should be considered in the maintenance support plan.
7. Communication, software performance evaluation, continuous improvement for user satisfaction and right time reporting to the concern authority should be planned well ahead and execute the same timely as standard service.

Based on the analysis of the impact of piloting phases and adjusting the plan, scale up implementation has to be done. In this document, the applicant will provide proper guidelines and different kinds of planning support to the organization so that the implementing organization can complete the scale up successfully

**Deliverables:** Support and Maintenance Plan, SLA, Running Digital Service

**Note:** The above-mentioned hybrid methodology is proposed based on the e-Government Application/Digital Service implementation context, priorities, dependencies and challenges. This hybrid methodology has been proposed here customizing few popular SDLC methodologies like Agile Scrum, etc. Understanding the scope of the assignment and other important context and factors, the applicant may follow this proposed hybrid methodology, or may customize it as per necessity or may propose any other different SDLC methodology with proper justifications in their technical proposal. The project implementation time plan /schedule should be proposed in the technical proposal completely based on the chosen SDLC methodology by the Firm. But the applicant is requested to describe the SDLC Methodology for this assignment in details in their technical proposal covering the following;

1. Diagrammatic representation of the proposed SDLC showing the phases, methods, processes, flow, steps, deliverables etc.
2. Proper justification/rationality for choosing the SDLC and context/factors considered in choosing the same. The advantages of this SDLC should be stated very clearly and precisely in respective of this assignment scope/context.
3. Detailed activities/tasks and description of each and every phase /step which will be performed under the scope of this SDLC for this assignment like Inception, Requirement analysis, Design, Testing, Development, Deployment etc. This description of each phase/step should also include the purpose, deliverables/documentation, dependencies of this SDLC.
4. The probable risk, challenges, threats of this SDLC that the applicant is assuming



## Non-Functional Requirements

### Application Compliance Requirements

#### Web Application

1. The application which is a web-based solution should be hosted in a centralized Web Server
2. The application should be developed following Service Oriented Architecture (SOA)
3. Application should support MVC framework.
4. Considering the operating/client environment at different levels of this application, it should be developed in such a way so that it requires low bandwidth to run.
5. The web-based application should support cross browser platforms (popular web browsers such Mozilla Firefox, Chrome, Safari etc.)
6. The application should have the ability to seamless integration with future module components/applications
7. Application should be lightweight and rich client-side scripting
8. UI should be developed based on the analysis of UX.
9. Any web interface of this application should be fully responsive

#### Mobile Application Requirements

1. The mobile application version of the system should be developed for Android and iOS
2. The mobile app should have the capability of displaying system notifications
3. Functionality for registration options for service recipients
4. App should enable compact view of services for service recipients.

#### Coding Conventions

The Firm must follow the stander coding style to produce high-quality code for further usage of the code in terms of reusability, refactoring, task automation, language factors, etc. The Firm should submit a standard coding convention approach, which may include different conventions like commenting, indent style, naming etc.

Following the best coding practices

#### Integration

Considering the Integration requirements and scopes defined in the SRS, HLDD & LLDD for this development project, the Firm must perform the planned integration activities. As a government system or application, integration with the required and other prescribed national systems is very important and essential. Only by proper integration and interoperability, an e-Service application can drive the ultimate citizen benefits with the optimum use of technology from manual to digital transformation. Here, the Firm should come up with an integration plan in their technical proposal considering and understanding the scope of the application as per this TOR. The possible integration scopes of this service application are mentioned below as a reference for the Firm.

The Firm can follow standard integration mechanisms such as exposing standard Restful APIs for the service process in different components so that any component or service can



exchange data and related resources whenever it is required by satisfying the Govt. Agency's business purposes. The digital services should be able to exchange data with other digital systems within the particular Govt. agency as well as with inter-agency solutions. So, the Firm will develop a standard API manager following international standards so that the data sharing can happen efficiently and standard securities will be maintained smoothly. The digital solution must address the stated interoperability and integration issues of the agency for systems' sustainability and end-to-end digitalization issues which is the ultimate goal of digital transformation.

Following criterions must be considered by the Firm while integrating the system with other 3<sup>rd</sup> party entities

- System should have the ability to build and publish APIs/Services to a selected set of gateways in a multi-gateway environment
- Manage API/Service visibility and restrict access to specific agencies or systems
- System should generate JSON web tokens for consumption by back- end servers.
- System should be horizontally scalable with easy deployment into cluster using proven routing infrastructure

SL No	System Name	Purpose	Dependent Organization
1.	Payment Gateways	To allow service receipts to make transaction online.	Financial Organization
2.	SSO	To provide a convenient and secure way for users to access multiple systems and applications with a single set of login credentials.	
3.	Email	Sending notifications, alerts, updates, and messages to users, transaction alert as well as allowing users to send and receive information to and from external sources.	SMTP Server, MTA
4.	SMS	Sending notifications, alerts, updates, and messages between users, transaction alert	Telecom Operator
5.	Others	If any system or service needs to enhance the total system that system may be integrated with main system	

#### Integration Guidelines:

Based on the consent and approval of implementing organization (concerned authority) at the system requirement analysis phase of software development, the Firm may follow a customized integration framework complying with BMDA guidelines, published e-government policies & acts and international standards/conventions for minimizing the system's operational dependencies and strengthening sustainability.



The Firm is requested to submit an "Integration Plan" in their technical proposal for this service solution covering the functional, technological, business, strategic, implementation, dependencies and activity related aspects.

## Hosting Requirements

Bangladesh Government is providing an extensive and standard hosting facility for all types of government organization applications and software. It may be mentioned here that the Firm developed application will be hosted in government-provided data center i.e., the National data center (NDC)/BDCCL. Therefore, at this stage Firm is requested to submit a "Hosting Architecture & Requirements (Ref. Doc-)" in their technical proposal for this assignment.

Note: if any implementing organization decides to host this application in their own or any nominated data center, understanding the strength and capacity of this data center and hosting requirements, Firm must guide implementing organization well ahead of the time of system design phase. So, implementing organization can take necessary measures to ensure hosting facilities which will be required at the time of hosting the developed system.

## Security and Privacy Requirements

The Firm should submit an extensive "Privacy Plan" including comprehensive security architectures in their technical proposal for this proposed application considering the following issues:

1. Project technical scopes
2. Functional and non-functional requirements and ultimate objectives
3. Concerned service provider organization's operational environments and capacity
4. User roles - Accessibility, Authentication, Authorization and Accountability
5. Importance of data management & data privacy
6. Strength of technologies to be used for development, operate & maintenance
7. Deployment & hosting
8. Service recipients and providers security, confidentiality and privacy
9. A checklist of security measures to be taken for this solution
10. Overall security standards which should be applicable for an e-government system.

## System Security Requirements

1. The vendor should follow any of the industry standard secured development methodology such as (but not limited to) Comprehensive Lightweight Application Security Process (CLASP) by OWASP etc.
2. The client should consider (but not limited to) common vulnerabilities such as SQL Injection, Cross Site Scripting (XSS) etc.
3. Client will undertake responsibility for Input Validation Controls, Authorization/Authentication Control and other security controls in place in both the test and production environment of the application.
4. The following vulnerabilities must be checked and ensured security from the beginning:
  - o Cross Site Request Forgery (CRSF)
  - o Cross Site Scripting (XSS)


- o Session hi-jacking
  - o Session Fixation
  - o SQL Injection and Code Injection
  - o Input Validation/Filtering
  - o Output Escaping
  - o Secure File Access
5. The vendor shall minimally provide Access control, Authentication and accountability security mechanisms for backend operations of the System.
  6. The proposed security solution shall be scalable and should not affect the performance by creating a bottleneck or single point of failure to the overall system.
  7. The system should provide tamper-proof audit trails and logs for administrator or auditor to check for the actions committed by users. The audit trails shall consist of following details but not limited to:
    - a. Login and logout
    - b. Attempts to access unauthorized resources
    - c. User profile changes
    - d. Past audit events.
    - e. Track all actions performed on documents attached/uploaded.
    - f. The system should have provision to assign the access rights of other resources on need basis to authorized users.
    - g. Information in the System that is deemed to be sensitive shall be encrypted and protected from accidental and/or unauthorized modification.
    - h. The System shall provide automatic session disconnection for inactive user after session time [Proposed best practice session time] is over.
    - i. The system shall protect the audit trails from being modified by unauthorized personnel or privileged users.
    - j.

Security requirement for electronic payments & transactions (But not limited to):

1. Solution should comply with all standardized security features, message protocols and encryption.
2. Payment Gateway should have DC and DR as per international standard guideline.
3. Payment Gateway should comply with international monetary security and must be certified by internationally recognized security authority and financial payment related auditors.

### Sizing, Performance and Scalability Requirements

1. The system processing shall be scalable to support the volume estimates for a period of 10 years at a 20% annual growth rate.
2. The system shall be designed to handle estimated 10000 simultaneous connection (online users) when it is ultimately rolled out.
3. The Firm must conduct an extensive load testing task taking above factors into consideration and submit a load testing result.
4. The database architecture should be such that the system is available to user 24x7x365 days a year without any unapproved downtime.



5. Considering the network infrastructure challenges in Bangladesh, the solution must support low bandwidth conditions for the services defined in the functional requirements.
6. The proposed solution should be highly scalable to accommodate current and future requirements within the scope of the scope mentioned in the TOR
7. Analyze the requirements whether both horizontal scaling (scale-up) and vertical scaling (scale-up) will be required for this application or not?
8. The application should be provided with appropriate caching mechanism to handle very high-traffic scalability
9. The Firm may propose here other relevant measures for the e-Service application scalability.

### Interoperability and Data Exchange

The selected Firm must develop this e-Service system following all the standards and protocols of interoperability, integration and data exchange with other systems. It is expected that the system will be based on open architecture and will be fully interoperable with current and future systems.

The following are the key expectations on interoperability requirements:

1. The system should be designed for interoperability using industry standard protocols.
2. System must expose data by Advanced Message Queuing Protocol and REST via TLS
3. All imported data must undergo data validation to ensure full integrity.
4. Data exchange within the system at different levels via the internet shall be encrypted.
5. The system should have functionality to exchange data with other own systems or external institute systems.
6. The system shall have functionality to export/import files based on the standard template defined through web services and/or API
7. The Firm must ensure standard interoperability facility for the system so that necessary data can be shared with the other concerned public & private sector software or mobile apps based on the approval of the authority simply exposing API for data sharing/ exchanging.

Full API documentation must be provided so that third party integrators can integrate their system with this system.

### UI/UX

The Firm must propose a "UI/ UX Plan" containing UI designing method and tools, UI design Activity plan, prototype or Mock Up design expected result & their finalizing process of that UI/UX design. Apart from this, the Firm should consider the following issues as requirements at the time of UI/UX plan.

- The system interfaces should be highly user friendly, easy to navigate and ensure fast loading.
- The UI shall be designed by using well-established, supported and lightweight UI framework so that it follows widely used industry flow patterns
- UI shall be easily configurable if any changes are needed



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- Menu, content and navigation shall be based on the user entitlements, roles and permissions.
- Firm is requested to include five important features considering service recipient five UI. Those UI should be designing professionally & hardcopy color page so that UI design capacity & standard will be able to measure.

## Language Support

System's default language will be Bangla. The system should support multilingual option i.e. Bangla and English. All the user interfaces will be able to display and input controls can take input both in Bangla and English. System/App users can choose and set his/her preferred language in profile setting for the system interfaces. The system should support Unicode for the Bangla Language.

## Accessibility

Firm must develop this application ensuring access for the citizens (Service Recipients) with disabilities in different standardized accessible formats. The application should be developed in "universal design" and "assistive technologies". Accepting and facilitating the use of sign languages, augmentative and alternative inputs and all other accessible means, modes and formats for inputs and outputs as per their choice by "Service Recipients" with disabilities; all e-service features (Web application or Mobile Application) should be usable with the help of screen reading software by the service recipients with disability.

## Internet and Web-based Content Accessibility Checklist

Accessibility Checklist		
SL.	Item to Check	Details
1	For anything on a web page that is not text, is there a text equivalent for that item?	<ul style="list-style-type: none"> <li>• Anything that is not text on a web page usually includes, but is not limited to, an image, graphic, audio clip, applets (small " application running within a web browser, i.e., text chat window, etc.), tickers, or other feature that conveys meaning through a picture or sound. Examples include buttons, check boxes, pictures and embedded or streaming audio or video.</li> <li>• Providing a text equivalent means that words are being used to describe what an item (that does not physically consist of text) actually is, why it is there, and any information being communicated by the use of that item or the item itself.</li> <li>• Check that all images have accurate and meaningful text equivalents. Images mostly use an "alt-tag" or "longdesc" attribute as part of the object. To check, mouse users can roll their cursor over an image. If a text label or window pops up, then it has a text equivalent. Screen reader users</li> </ul>



		<p>can listen to see if an image is identified and described. It is also acceptable to simply include a text description above or below the image. For example, "The picture below shows..."</p> <ul style="list-style-type: none"> <li>• Ascertain that images of text, graphical text (pictures of text), or text that is part of an image have a text equivalent. Be sure that the text equivalent correctly describes the image or communicates any information as part of the image. For example, if the image itself contains words, be sure the exact wording from the image is used within the text equivalent</li> <li>• Ensure any audio has a text equivalent, such as a text transcript.</li> </ul>
2	<p>Is captioning, audio descriptions, or other equivalent provided for presentations that utilize both audio and video at the same time?</p> <p>Is captioning, descriptions, or other alternatives synchronized with the presentation?</p>	<ul style="list-style-type: none"> <li>• Determine that all audios have been captioned for the deaf and hard of hearing, and all videos have audio descriptions for the blind and visually impaired.</li> <li>• Ascertain that captions and audio descriptions are synchronized correctly with the audio and video. For example; synchronized captions allow someone to read captions and also watch the speaker's relevant body language.</li> <li>• Remember that this only applies to multimedia presentations, i.e., those presentations utilizing both audio and video at the same time. For example, the audio and video web cast of a program would need to be synchronized. An audio web cast would require a text transcript. A silent (no audio) web slide show would require a text equivalent for any images.</li> </ul>
3	<p>If color was removed, would it inhibit use of the web site?</p>	<ul style="list-style-type: none"> <li>• To check, view the page using a monochrome monitor (ex. black and white monitor, etc.) or by printing a page to a black and white printer.</li> </ul>
4	<p>Is color being used to emphasize text or indicate an action?</p>	<ul style="list-style-type: none"> <li>• If so, an alternate method needs to be included so users can identify what is being emphasized by the use of the colored text or action.</li> <li>• For example, if all links on a web page are blue, then underlining the links is an acceptable method for identifying blue colored links, another example, if users are prompted to press a green start button, then a text label above the green button saying "press green start button" is an acceptable method.</li> </ul>

5	Do web pages ignore user defined style sheets?	<ul style="list-style-type: none"> <li>• Style sheets are formatting instructions on how a page should be displayed (can also include how it is printed and presented). For example, a user specifies that they want their browser to view pages with an extra-large font with white characters on a black background. These preferences are set up for all pages viewed.</li> </ul>
6	Does a web page override or ignore user or ignore settings	<ul style="list-style-type: none"> <li>• To check, disable style sheets within the browser (Check the browser's help menu for instructions) or try changing the font size or background colors through the browser's settings.</li> </ul>
7	If a link is embedded in an image, is there an equivalent text link?	<ul style="list-style-type: none"> <li>• Frequently, a web designer will use an image map which contains a link or set of links.</li> <li>• Check to see if the image has any text links or labels. In some cases, you may have to move the mouse around the image to see if different text labels appear over different portions of the image. Screen readers will announce "image map link..." when a link is detected. These text labels alert users that by clicking or selecting the link in this particular region of the image, it will retrieve a specific web page. This is an example of a client-side image map which can be quite accommodating to people with disabilities and those using assistive technology.</li> <li>• On the other hand, there are image maps that do not indicate to the user which specific web page will be retrieved when a particular region of the image is selected. These are called server-side image maps, because the computer or server hosting the web page determines which page is sent based on portion of the image selected. These are not accessible image maps, requiring a redundant text link on the same page retrieving the same pages as those links used in the image map.</li> </ul>
8	If information is displayed using a table(s), can columns and rows be identified by screen readers?	<ul style="list-style-type: none"> <li>• Using a screen reader, listen to how the table is read aloud.</li> </ul>
9	If frames are used, are they accurately text labeled?	<ul style="list-style-type: none"> <li>• Frames are used to visually separate information on a web page.</li> </ul>



10	Does anything on the page blink or flicker?	<ul style="list-style-type: none"> <li>Ask if the web designers can prove whether any blinking or flashing elements have a frequency greater than 2 Hz and lower than 55 Hz. This requirement is necessary because some individuals with photosensitive epilepsy can have a seizure triggered by displays that flicker or flash, particularly if the flash has a high intensity and is within certain frequency ranges.</li> </ul>
11	Do web sites not conforming to acceptable and approved accessibility standards offer a text only equivalent of their web site?	<ul style="list-style-type: none"> <li>The World Wide Web Consortium's (W3C) Web Accessibility initiative Guidelines and Section 508 are the two widely accepted authorities on Web accessibility and design.</li> <li>Web sites that cannot adhere to the accessibility guidelines set forth by W3C and Section 508 can offer a text only equivalent for all the information displayed and all functions available.</li> </ul>
12	If scripting is used, such as JAVA, etc., is there a text equivalent so assistive technology, like screen readers, can read the information?	<ul style="list-style-type: none"> <li>An example of scripting could be a stock ticker on a web page that is animated, refreshing, and displaying information. Another example is using an image, that when a mouse cursor rolls over the image, additional information pops open on the screen, and then disappears when the mouse cursor rolls off.</li> </ul>
13	If online forms are used, can people using adaptive technology fill in and submit all the required information	<ul style="list-style-type: none"> <li>Can a keyboard be used to access all the form fields?</li> <li>Are text labels used either inside or near form fields to identify what information users should be entering?</li> <li>Can a screen reader identify the form(s)?</li> <li>Do the forms follow a logical order? For example, if a user hears "Last Name" is the corresponding form the area where they would enter their last name?</li> </ul>
14	Is there a way for users, especially those using screen readers to skip repetitive navigational links?	<ul style="list-style-type: none"> <li>Navigational links are a set of routine navigation links frequently used to move users to pages within a website, usually located on the top or side of each web page. For example, "Help," "Contact skip repetitive Us," etc. links that all appear on the same page within a website in exactly the same way and location.</li> </ul>
15	If users are given a certain amount of time for an action or response, is there any	<ul style="list-style-type: none"> <li>Some web pages may expire or time out after a certain amount of time, and refresh the entire</li> </ul>

	indication how much time they have left or an option to request more time?	page, for example, those requesting personal information.
16	Unicode character set for Bangla	<ul style="list-style-type: none"> <li>Use of Unicode character set for Bangla - Interspersing Bangla and English in the same page should be avoided until such time that there is a screen reader which can handle multiple languages.</li> </ul>
17	Accessible documents on web pages	<ul style="list-style-type: none"> <li>Where it is not possible to make a document accessible, then an alternative, the accessible format should be downloadable along with the original image file.</li> </ul>
18	Navigation mark-up	<ul style="list-style-type: none"> <li>Use of heading level 1-6, in addition to navigation links like 'skip to main content'.</li> </ul>
19	HTML validation	<ul style="list-style-type: none"> <li>HTML is the simplest programming language used for website development and is accessible on all browsers or a mobile browser. All web pages should have HTML validation.</li> </ul>
20	CSS validation	<ul style="list-style-type: none"> <li>Content presented with CSS errors may lead to serious problems such as overlapping of content, making it almost impossible to read. CSS errors may also prevent some users from successfully carrying out custom CSS processing to set the preference of color and size of text and object to suit their vision requirements.</li> </ul>
21	Color adjustment option	<ul style="list-style-type: none"> <li>High contrast and font customization options should be available</li> </ul>
22	Labeling of Links	<ul style="list-style-type: none"> <li>Labeling links correctly rather than just 'click here'- i.e., descriptions should be accurate. <ol style="list-style-type: none"> <li>The web page has a descriptive and informative page title.</li> <li>A sign language video is provided for all media content that contains audio.</li> <li>The page is readable and functional when the text size is doubled.</li> <li>All page functionality is available using the keyboard</li> </ol> </li> </ul>

### Tools and Technologies to be used

The Firm is recommended to choose the appropriate tools and technologies (Open Source is preferable) to be used for the development and implementation of the e-Service application.



The selected Firm has to consult with implementing organization (client) to finalize the tools, technologies, framework, and platform with the approval of the same authorities' consent. The main components of the software will be web-based applications. It should be run in Windows/Linux/OSX operating system at the user's end and should be compatible with all major browsers such as - Firefox, Google Chrome etc.

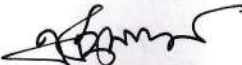
The System UI should be compatible with Tab & Smart Phone browsers and in the case of Mobile Apps should be support both Android and IOS.

Understanding the details scope of this project, Firm is requested to submit a detail "**Tools & Technology plan** in their technical proposal following the table format mentioned below

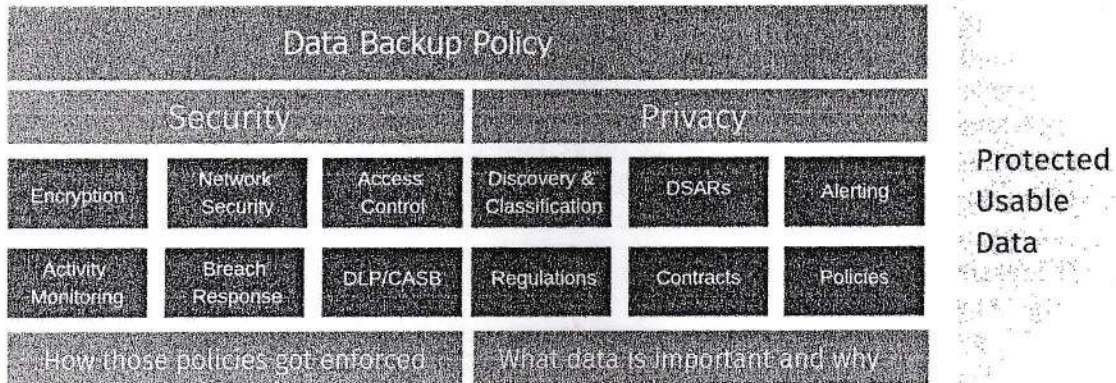
Issues/Phases/Purpose	Used Technology/Tools	Justification for use	Alternative Tool/ Technology
Project Management			
Version Control			
System Requirement Analysis			
System Design			
Development (Client end)			
Development (Server end)			
API/Web services			
Apps			
Testing			
Integration			
Hosting & Deployment			
QA			
Helpdesk/Support			
Reporting			
Communication			

### System Backup/Restore

Malicious attacks can corrupt any data and hence, render the software useless. Therefore, it is of utmost importance to keep backups of data. This can mean keeping an online or offline backup of files, database etc. While keeping back up of hard drive, various types of RAID will be employed moreover; there are variations in frequency of backups. Backups can be



differential (only the changes are backed up) or incremental (meaning only intrusion of new file is backed up).



- All backups to be stored off-site, not be located at your business’s primary location. For example, in the Cloud.
- Make sure all backups are encrypted (to protect data from falling into wrong hands.)
- Only allow small number of trusted employee’s access to backups, this is a measure, to avoid unwanted intrusions.
- Ensure 24x7 support; this is essential in case an incident occurs outside of normal business hours. Cyber-attacks are usually random.
- Ensure the security and accessibility of business data.

### Certification

- Vendor will provide complete source code with comprehensive training, guideline and other technical documentations.
- Vendor will follow the Bangladesh National Digital Architecture (BNDA) guideline and vetting from BCC or Govt. Authority.
- BFPO will conduct Software Quality Testing & Certification (SQTC) certificate from BCC or Govt. Authority and the Vendor will fix the issues at least for one time.
- BFPO will conduct the Vulnerability Assessment and Penetration Test (VAPT) certificate from BCC or Govt. Authority and the Vendor will fix the issues at least for one time.



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## Contract management

The Firm are expected to provide a proposed detailed project plan and implementation strategy of the project. This plan is expected to include (but not limited to):

1. Brief information regarding the system development process consisting as below points:
  - a. System Functional Requirements Description
  - b. SDLC Methodology
  - c. Development method, technology (tools, language and database requirements), technical approaches & standards (List of Standards, Tools & Technology plan, Security and Data Privacy Plan, User Management Plan, Integration Plan, UI/UX Plan, Digital Service Toolkit and Guide)
  - d. Project Implementation Work Plan
    - i. Project implementation schedule with indicative timeline (Gantt chart)
    - ii. Work Distribution and Team Composition Plan
    - iii. Quality Assurance & Testing Plan
    - iv. Deployment and Hosting Plan
    - v. Risk Management Strategic Plan and quality control mechanism
    - vi. Audit Plan
    - vii. Strategic & Action Plan for System Optimization
    - viii. Pilot Implementation Plan
    - ix. Documentation Plan
    - x. Knowledge Transfer Plan
    - xi. Project Deliverable Plan
    - xii. Data Management and Migration Plan
    - xiii. End-User Engagement Plan
    - xiv. Support and Maintenance Plan
    - xv. Performance Review Plan
  - e. 2. Maximum lead time for delivery of services
  - f. Any development tasks or assumptions that may be required to render the solution fit for purpose
  - g. Any anticipated integration tasks
  - h. Comprehensive contingency plan

## Implementation Timeline

The applicant must complete the assignment within a stipulated timeline based on the proposed SDLC methodology. The assignment timeline can be divided in three below phases that is – Development, UAT and Maintenance & Support. As the entire assignment's functional scope will be divided into 2 parts, therefore the release and deployment of the part for going live will be based on the completion of the iteration.

The assignment is divided into three phases. The entire assignment is divided as following phases:



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PHASE-I: Requirement Analysis & Design-

Deliverables/Milestone	Duration
Inception	3 (Three) Months
SRS	

PHASE-II: Development & Release -

Deliverables/Milestone	Duration
Designing and Development of Digital Archives and Searching System, Common Service configuration along with 50% of data entry and scanning V.1	09 (Nine) Months
Designing and Development of e-Requisition System, Store Management System along with rest of the 50% of data entry and scanning V.2	
Designing and Development of Online Sales & Monitoring System along with Mobile App (android & iOS) V.3	

PHASE-III: UAT & System Deployment-

Deliverables/Milestone	Duration
*UAT & Implementation the Whole Solution, Capacity Development	3 (Three) Months

PHASE-IV: Maintenance & Support -

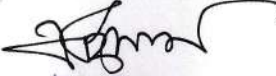
Deliverables/Milestone	Duration
Provide Support and Maintenance Service to the developed systems	21 (Twenty-One) Months

\*NB- The vendor may need to start conducting Testing, UAT & Implementation/Deployment of individual modules right after completing the development of the respective modules.

### Pilot Implementation Requirements

The Firm has to conduct package-wise (as per priority and readiness) pilot implementation of the e-Service software solution in pilot areas which will be decided by implementing agency. The Firm will submit the detailed "Pilot Implementation Plan" in the technical proposal in which the following may be considered incorporated:

1. Firm will be required to provide on-site support in a pilot phase to ensure smooth operation.

  
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2. Firm must provide extensive, premium, and time-bound support at the pilot phase. The detailed support modality, methods, standard, and relevant activities should be mentioned in the proposed plan.
3. Firm will submit a performance assessment report at the end of the pilot phase covering pilot result/output, impact/outcome, scalability, stability, and sustainability for full-scale implementation.
4. The criteria/key factors based on which the pilot evaluation will be conducted should be mentioned in the proposed plan.

## Documentation

Detailed and proper documentation of such ICT-based projects as e-service application development and implementation for the Government is very vital and essential. Documentation is required for any such project as reference, knowledge transfer, analysis of development and implementation history, baseline information for any modification or change, guidance, etc. In this issue. Vender should show the highest level of professionalism for delivering the standardized documentation approach at each phase of e-Service development and implementation project. Firm should include an extensive "Documentation Plan" of this project in their technical proposal.

Project Technical Documentation includes the following components as deliverables: User manual (for both the end user manual and admin/office user manual), training manual, API integration manuals etc.

## Team Composition

Here is the list of key personnel for the assignment. Vendor will propose other personnel skill matrix according to their understanding of the scope of work.

Sl. NO	Position	Qualification	No Of person	Input - Months for Each Person
1	Project Manager	i) Minimum academic requirement is graduation in Computer Science and Engineering/ICT preferable having a degree from a reputed University. ii) Minimum 12 years of profound experience with at least 8 years' experience in managing large scale IT projects. iii) Must have minimum 5 IT/ICT enable software project management (design, development and implementation) experience which should include minimum 3	1	24

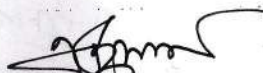


Sl. NO	Position	Qualification	No Of person	Input - Months for Each Person
		(Three) e-Government application/digital service application for the public sector with the government organization. iv) Must have profound knowledge in managing projects using project management tools i.e. Microsoft project, jira etc.		
2	Deputy Project Manager/Technical Lead	i) Minimum academic requirement is graduation in Computer Science and Engineering/ICT preferable having a degree from a reputed University ii) Minimum 5 years of experience in leading large scale IT projects with a total of 10 years of experience in ICT industry iii) Past experience in leading such an assignment role including software design and development preferable in Bangladesh government IT projects.	1	27
3	Software Architect	i) Minimum graduate degree in any relevant discipline from a reputed university. ii) Minimum 5 years of experience in any government domain related to public service delivery with total 10 years of software architecture designing experience in public or corporate field.	1	03
4	Business Analyst	i) Minimum academic requirement is graduation in Computer Science and Engineering/ICT preferable	2	

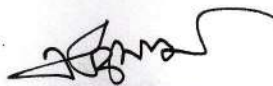
Sl. NO	Position	Qualification	No Of person	Input - Months for Each Person
		having a degree from a reputed University ii) Minimum 3 years of experience in managing large scale IT business with a total of 5 years of experience in ICT industry		06
5	System Analyst	i) Minimum graduate degree in any relevant discipline from a reputed university. ii) Minimum 5 years of experience in any government domain related to public service delivery with total 7 years of system analysis experience in corporate field.	2	09
6	Security Expert	i) Minimum graduate in Computer Science and Engineering / relevant subjects. ii) Minimum 3 years of experience in IT System security with a total of 5 years of experience in ICT industry.	1	06
7	Database Administrator	i) Minimum graduate in Computer Science and Engineering / relevant subjects. ii) Minimum 5 years of experience in Database design and administration with a total of 7 years of experience in ICT industry.	1	09
8	Sr. Software Engineer	i) Minimum graduate in Computer Science and Engineering/ICT or any other relevant Science disciplines from any University. ii) Should have minimum 7 years of profound experience in the field of web-based software programming/coding/scripting for ICT based application or Software development.	2	30

Sl. NO	Position	Qualification	No Of person	Input - Months for Each Person
		Experience needs to focus on multiple development platforms including PHP		
9	Software Engineer	i) Minimum graduate in Computer Science and Engineering/ICT or any other relevant Science disciplines from any University. ii) Should have minimum 03 years of profound experience in the field of web-based software programming/coding/scripting for ICT based application or Software development. Experience needs to focus on multiple development platforms including PHP	6	30
10	Mobile Apps Developer (Android)	(i) Minimum Bachelors in CS/CSE/EEE/IT or any relevant discipline from any reputed university. (ii) Minimum 05 years of experience in Android application development.	1	9
11	Mobile Apps Developer (iOS)	(i) Minimum Bachelors in CS/CSE/EEE/IT or any relevant discipline from any reputed university. (ii) Minimum 05 years of experience in Android application development.	1	9
12	QA Expert (Test Engineer)	i) Minimum graduate in Computer Science and Engineering/ICT or any other relevant Science disciplines from any University. ii) Should have minimum 03 years of profound experience in the field of software quality assurance in application.	2	27
8	Data Visualization Expert	i) Minimum graduate in Computer Science/CSE/Software	1	

Sl. NO	Position	Qualification	No Of person	Input - Months for Each Person
		<p>Engineering or any other relevant Science disciplines from any University</p> <p>ii) Should have minimum 5 years of profound experience in the field of Data Analysis &amp; Visualization Expertise with a total of 7 years of experience in ICT industry</p> <p>iii) Experience with multiple programming languages including Java/C/Python/R, JavaScript and SQL and experience in data science including artificial intelligence</p>		09
11	DevOps Engineer	<p>i) Minimum graduate in Computer Science and Engineering/ICT or any other relevant Science disciplines from any University.</p> <p>ii) Must have minimum 05 years of profound experience in the field of development and operational management.</p> <p>iii) Must have experience on Command of Automation Technologies and Tools.</p>	2	30
12	Infrastructure Engineer	<p>i) Minimum graduate in Computer Science and Engineering/ICT or any other relevant Science disciplines from any University.</p> <p>ii) Must have minimum 05 years of profound experience in the field of system installation, configuration.</p> <p>iii) Must have experience on large-scale data backup and infrastructure management system.</p>	1	30
13	Integration Expert	<p>i) Minimum graduate in Computer Science and</p>	1	

  
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Sl. NO	Position	Qualification	No Of person	Input - Months for Each Person
		Engineering/ICT or any other relevant Science disciplines from any University. ii) Must have minimum 05 years of profound experience of different system integration technology on large-scale e-government projects.		09
14	Deployment Expert	i) Minimum graduate in Computer Science and Engineering/ICT or any other relevant Science disciplines from any University. ii) Must have minimum 03 years of profound experience in the field of deployment and database configuration. iii) Must have experience in the safe deployment of releases into the production environment.	2	06
15	UX Expert	i) Minimum graduate in Computer Science and Engineering/ICT or any other relevant Science disciplines from any University. ii) Should have minimum 05 years of profound experience in the field of user experience.	2	06
16	UI Designer	i) Minimum graduate in Computer Science and Engineering/ICT or any other relevant Science disciplines from any University. ii) Should have minimum 03 years of profound experience in the field of user interface design.	2	09
17	Graphics Designer	i) Minimum graduate in any disciplines from any University. ii) Should have minimum 03 years of profound experience in the field of graphics design.	1	03

  
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Sl. NO	Position	Qualification	No Of person	Input - Months for Each Person
18	Communication Expert	i) Minimum graduate in any relevant subject from any University. ii) Should have minimum 03 years of profound experience in the field of communication for web based application or Software.	1	27
19	Document Management Officer	i) Minimum graduate in any relevant subject from any University. ii) Should have minimum 05 years of profound experience in the field of document management and archiving for web-based application or Software.	2	12
20	Digital Content Developer	i) Minimum graduate in any disciplines from any University. ii) Should have minimum 03 years of profound experience in the field of graphics design & digital content preparation.	2	12
21	Training Executive	i) Minimum graduate in any relevant subject from any University. ii) Should have minimum 02 years of profound experience in the field of user training of web based application or Software.	2	04
22	Maintenance Engineer	i) Minimum graduate in Computer Science ICT/CSE or any other relevant Science disciplines from any University. Should have ii) Minimum 03 years of profound experience in the field of software maintenance service for web application	6	24
23	Helpdesk Executive	i) Minimum graduate in Computer Science ICT/CSE or any other relevant Science disciplines from any University. Should have ii) Minimum 2 years of profound experience in the field of	3	24

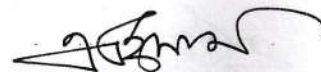


Sl. NO	Position	Qualification	No Of person	Input - Months for Each Person
		helpdesk executive for web application		
24	Project Assistant	i) Minimum graduate in Computer Science ICT/CSE or any other relevant Science disciplines from any University. Should have ii) minimum 3 years of profound experience for assisting software project for web application	2	27
25	Developer/Programmer (On Demand)	i) Minimum graduate in Computer Science and Engineering/ICT or any other relevant Science disciplines from any University. ii) Should have minimum 3 years of profound experience in the field of web-based software programming/coding/scripting for ICT based application or Software development. Experience needs to focus on multiple development platforms including PHP	2	03
<b>Totals</b>			53	

### Quality Attributes and Assurance

The Quality attributes and Assurance plan will describe the standards, processes, and procedures in this e-Service application development life cycle which will be used to support the consistent delivery of high-quality, professional standard applications and services provided in the support of an automated environment. The quality assurance process will be concerned with establishing the authority of the QA function, quality assurance standards, procedures, policies, and monitoring, and evaluation processes to determine quality in relation to established standards. Quality assurance activities will concentrate on the prevention of problems through the continuous improvement of processes.

In order to provide high-quality products and services, each support team will adhere to processes, procedures, and standards. Quality Assurance (QA) is a process used to monitor



and evaluate the adherence to processes, procedures, and standards to determine potential product and service quality. It will involve reviewing and auditing the products and activities to verify that they comply with the applicable procedures and standards, and will assure the appropriate visibility for the results of the reviews and audits.

The Firm is requested to provide an extensive "Quality Assurance Plan" with measurable attributes for each phase of this e-Services development life cycle in their technical proposal.

### Data Management and Migration of Legacy Data

Under the process of service to e-Service transformation, during e-Service activation or deployment, it might be necessary to move the legacy data of prevailing services. In that case, the Firm may require performing different relevant activities that may include data collection, softcopy conversion, data filter, data cleansing, data verification, data processing, data entry, data migration and overall data management. Here, it is expected that, the Firm will propose their detailed "Data Management and Data Migration Plan" for this e-Service application considering the estimation of legacy data mentioned below which will be required to migrate into the developed application.

Data About	Description	No of Pages	Current Status	Amount of Data	Dependency

The plan may cover amount of data to be migrated, activities to be performed the number of resources to be used, required time for different data migration phases for different activities (data collection, hardcopy to softcopy conversion, data entry, data transformation from soft copy, data filtration, data cleaning, data verification) etc.

### Audit trail


This system will maintain an audit trail of any changes or updates made in any information that are considered as vital and should maintain the audit log with information such as

1. Log each and every action of the users who are accessing
2. Log the parts of the application that are being accessed
3. Log the fields that are being modified
4. Log the results of these modifications
5. Log the attempted breaches of access
6. Log the attempted breaches of modification rights
7. Timestamp.

It should be ensured that an audit trail is kept for all transactions and all audit transactions logged are kept on the trail file or trail database from where the system can generate different audit reports as and when required.

The system should provide tamper-proof audit trails and logs for administrator or auditor to check for the actions committed by users. The audit trails shall consist of following details but not limited to:

- a. Login and logout
- b. Attempts to access unauthorized resources

  
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- c. User profile changes
- d. Past audit events.
- e. Track all actions performed on documents attached/uploaded.
- f. The system should have provision to assign the access rights of other resources on a need basis to authorized users.
- g. Information in the System that is deemed to be sensitive shall be encrypted and protected from accidental and/or unauthorized modification.
- h. The System shall provide automatic session disconnection for inactive users after session time [Proposed best practice session time] is over.
- i. The system shall protect the audit trails from being modified by unauthorized personnel or privileged users.
- j. The Firm are requested to submit their proposed **Audit and Trail plan** including strategy & standard measures in their technical proposal.

## Training Plan

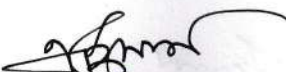
In the case of eGovernment/digital service's successful implementation, user training plays one of the most vital roles in the entire implementation cycle. Firm must consider government culture, the convenience of government officials & staff, and ICT literacy & expertise at the time of designing a user training plan for the eGovernment/digital service implementation. Based on the requirements, target prospective participants, and implementation scope, the Firm may plan for user training in 2 different modalities i.e., 1) End-User Training, 2) Admin/system/Authorized user Training.

Knowledge transfer mode	Total participant	No of personnel per event	Total session	training / workshop
End-User Training (Users from Indenting Offices)	200 (approx.)	25	8	training
Admin/system/Authorized user Training (DPP, BFPO and other officials)	105 (approx.)	35	3	training and workshop

The Firm is requested here to submit a detailed "Training Plan" in their technical proposal considering the following:

1. Training Schedule & program details
2. Methods & modalities of user training
3. No. of targeted user groups and participants
4. Strategy of ensuring training standards
5. Methodology for evaluating performance
6. Ensuring smart training with latest tools & technologies
7. Innovative, user friendly, & Multimedia training materials
8. Team composition skill and expertise as training provider

Please note that, the training infrastructure like venue will be provided by the implementation organization.

  
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## End User Engagement

End user engagement is very important for e-government implementation. The Firm should measure involvement of end users during the materialization of the project and the constant incorporation of feedback to provide high-quality end-user experience satisfying usability tests. Based on different types end-user group, Firm may require to consider the following at the time of preparing **End-User Engagement Plan** which is required to be submitted with the technical proposal,

1. Purpose of end-user engagement.
2. For ensuring end-user behavior, proposed method & activity.
3. Define indicators & factors of the outcome for end-user engagement.
4. Determining area & boundary of end-user's Engagement & their degree of involvement.
5. Mentioning The Firm & implementing organization's roles in engaging end-users for large scale implementation.

## Risk Management

The implementation of the project involves a number of activities that use a variety of technological advancements and requires high levels of domain knowledge because materialization of such a project contains elements of uncertainty and it is known as project risk. The success of such a project depends quite heavily on the amount of risk that corresponds to each project activity along with proper execution of the risk mitigation and management plans. To achieve cent percent success, the Firm must identify, assess, prioritize, and manage all of the major risks. A standard risk management process includes the following steps:

1. Identify risks and their triggers
2. Classify and prioritize all risks
3. Craft a plan that links each risk to a mitigation
4. Monitor for risk triggered during the project
5. Implement the mitigating action if any risk materializes
6. Communicate risk status throughout project

The Firm should submit a **Risk Management Plan** addressing all types of risks including above mentioned steps following standard risk management principles and their respective mitigation plan


## Duration of the assignment:

- Total Duration of the assignment is 36 Months.

## Expected Deliverables

Considering the scope of services and work of this project and based on the proposed project development implementation methodology (SDLC), the Firm is requested to submit a comprehensive "**Project Deliverables Plan**" in their technical proposal describing the SDLC phase/steps/action wise timeline-based deliverables mentioning different formats and types. For better clarification, some of the deliverable's examples are mentioned below:

1. Project inception report
2. System requirement specification (SRS)
3. System design document (HILD and LLD as SDD)

  
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4. Complete source code with documentation of the System
5. Test plan with testing reports
6. Integration plan and reports
7. Mobile Application (Android and iOS)
8. Web application
9. SLA

S/N	Deliverables/Milestone	Duration/Timeline	Payment
1.	Inception report	Within 1 months of contract signing	5% of Development cost
2.	Software Requirement Specification (SRS) & System design document (HILD and LLD as SDD)	Within 3 months of contract signing	10% of Development cost
3.	Designing and Development of Digital Archives and Searching System, Common Service configuration V.1	Within 6 months of contract signing	20% of Development cost
4.	Designing and Development of e-Requisition System, Store Management System V.2	Within 9 months of contract signing	20% of Development cost
5.	Designing and Development of Online Sales & Monitoring System V3	Within 12 months of contract signing	10% of Development cost
6.	UAT, Capacity Development, Implementation the Whole Solution	Within 15 months of contract signing	7% of Development cost
7.	Provide Support and Maintenance Service to the developed systems	Upto 36 Months	28% of Development cost (4% for every 3 month) Total 7 Installments

### Copyright

Client shall be entitled to all proprietary rights including but not limited to patents, copyrights, and trademarks, with regard to many Firms.

All kinds of source codes including code documentation and other approved documents (all versions trail, products, developed applications, documents, and all kinds of deliverables) bear a direct relation to or are made in consequence of the services provided by the Firm under this scope of this TOR will be owned by Development & Maintenance of Digital Service Delivery Platform.

At the request of the Client, the Firm shall assist in securing such property rights and transferring them in compliance with the requirement of the applicable law. After the completion of the project, such rights will be handed over to the Client that will be produced at the time of the entire system development and implementation life cycle under the scope

of this TOR and will be owned by Development & Maintenance of Digital Service Delivery Platform authority.

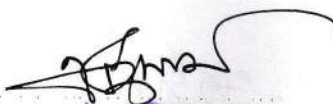
The Firm should properly deliver the entire approved source codes and other deliverables to the Development & Maintenance of Digital Service Delivery Platform. The Firm cannot claim any royalty or authority of any sort in case of replicating the source code or database or any other deliverables under this TOR for any future use that Development & Maintenance of Digital Service Delivery Platform and the Government of Bangladesh may see fit.

Any studies, documents, reports, graphics or other materials prepared by the Firm for this project under this TOR shall belong to and remain the property of the Client.

## Maintenance and Support Service

The selected vendor will require to provide maintenance and support service for this developed, deployed, piloted eGovernment/digital service application. After the development and deployment phase as soon as the application goes Live, having consent and acceptance from the implementing organization, immediately the pilot implementation phase will be started including the maintenance and support service. Vendor will require to provide maintenance and support services plan for the next 21 (Thirty) Months after the development period. The vendor must consider the following aspects while providing the support and maintenance services under the assignment's scope of work:

1. Selected vendor will provide operational support for the newly developed system from the date of system delivery.
2. Provide Post development support service under structured SLA and Change Management Architecture.
3. Continuous health check of Database, tuning database, tuning codes & queries and mitigating the issues.
4. Updating training manual adjusting the changes in the system.
5. Fixing all bugs in the system irrespective of its nature and complexities.
6. Fixing authentic data entered into the system following a structured authorization system.
7. Develop new reports as per new requirements based on existing DB schema.
8. Support and maintenance will cover fixing all bugs and system errors as and when identified by the system users.
9. Support and improve Role-wise credential system incorporation for better user role management.
10. 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.
11. The vendor's team will work at their office premises or in case of specialized requirements, they may work at the BFPO premises or any BFPO designated location.
12. Fixing all bugs in the Service Platform irrespective of its nature and complexities;
13. Ensuring inter agency e-service integration/deployment readiness support to the agencies by deploying readiness assessment manager;
14. Vendor should introduce (install/enhance or develop) a centralized customer relationship management (CRM) tool by which users (basically, service provider type users) will have access to support service to open support tickets and track tickets for resolution through helpdesk.

  
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15. Providing active and operation support to Data Center in application/DB sizing the product reconciling and adjusting with user-base and number of offices.
16. Regular database tuning and application configuration support to hosted environments.
17. 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.
18. FAQ for most commonly asked questions and answers.

It is expected that, the vendor must provide a detailed including proposed SLA in the technical proposal. The proposed SLA should include time bound service delivery layers, modality & compensation plan, which may also include the following:

1. A Proposed SLA plans.
2. Support service types and mode of services
3. Help desk functionalities & facilities and ampacity.
4. Configuration management and Change management
5. Service layers for different types of support
6. Tools & technologies will be used for Support service management
7. Communication & report management
8. Incident & Problem management
9. Support Service Log Management
10. Support feedback & service evaluation methodology


Support & maintenance plan should be comprehensive and well elaborated to ensure proper support to the end users. Apart from above mentioned issues, if vendor thinks any other issue/method should be included in their plan which assures proper standard support& maintenance of this eGovernment/digital service application which is suitable for implementing organization, it would be considered as added value addition.

## Performance Review

As per the predefined performance review plan of different stages of SDLC, the Firm will take necessary actions so that it will be possible to evaluate the performance at different levels of their activities and the deliverables based on indicators/factors precisely. Those indicators, standards, and factors for performance evaluation have to be defined earlier at the time of the project management plan. Here Firm is requested to submit a proposed "**Performance Review Plan**" for the entire design, development, and implementation cycle mentioning the indicators, measuring strategy and expected review scopes.

## Capacity Development and Management

The Knowledge Transfer Plan should provide a comprehensive approach to transfer the responsibility for maintenance and operations from the vendor to implementing organization or their nominated agency. While designing a smooth, efficient and effective vendor should consider the following:

  
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- Strategies, methods, milestones, schedules & their duration of accomplishing target.
- Vendor will propose required technical capacity, number of resources mentioning their roles & responsibilities from implementing agency to carry forward this plan.
- Vendor will need to identify the risks, craft a mitigation & contingency plan.
- Vendor needs to propose a method of evaluating & verification of the standard of knowledge transfer plan.

## Facilities to be provided by the Client and Firm

The Development & Maintenance of Digital Service Delivery Platform Project office would provide the following facilities

- The Development & Maintenance of Digital Service Delivery Platform Project office shall provide access to its network infrastructure and server
- The Development & Maintenance of Digital Service Delivery Platform Project office will provide a technical counterpart (Technical Working Committee and Domain specialists) and will liaise with the Consultant firm for any technical report.
- The Development & Maintenance of Digital Service Delivery Platform project office will provide administrative support and necessary access to government offices as required to transfer the domain knowledge and field application of the system.

## Payment Modality

Payment will be made after providing deliverables, services and delivery with supporting documents and related reports verified by the client. No Payment will be released if client did not satisfy with the deliverables, services and reports.

## System Handover

The Selected Firm will be responsible for the transferring system operation to the Project Office. In preparation the Selected Firm must provide comprehensive training to the key officials before the system transfer. The Selected Firm will provide a checklist of handover items with the Development & Maintenance of Digital Service Delivery Platform Project office so that it can be verified that all required tasks are completed before transfer of the web-based system, android app and iOS app.


Formal acceptance of the web-based system, android app and iOS app will be indicated by the issuance of an Operational Acceptance Letter by the Project Office

## Intellectual Property Right (IPR)

All types of intellectual property (e.g., copyright, patent, trademark, trade secret or any other property rights) must be reserved and only owned by the client. Any activity that infringes to this clause will be treated as offence of prevailing ICT and related act(s), rules, regulations of the Bangladesh Government. Client will be the sole and complete owner of all present and future rights as well as the interest to all intellectual property that is created and/or discovered under this assignment.

## System Ownership

The Selected Firm must submit all system related documentation and the most updated source code, without any preconditions to the client. Any information, system and services



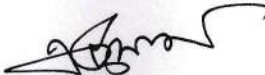
source code (part or whole) use anywhere is strictly prohibited and will be treated as offence of prevailing ICT and related act(s), rules, regulation of the Bangladesh Government.

## Firm qualification

This is a high-priority national project with utmost importance towards the future Bangladesh goal, so the Firm must prove that they have a solid technical background and operational strength to undertake and take this service forward without any hindrance. Applicants must also have adequate technical ability, resources and processes. As such, the following are defined as minimum eligibility criteria of the firm/company:

1. Must have a minimum of 10 (Ten) years' experience in Software development/IT/ITES business in Bangladesh.
2. Must have update BASIS membership and ISO 9001 or ISO 14001 or ISO 27001 certified.
3. Must have valid and up-to-date Trade license, Incorporation certificate, VAT Registration certificate, TIN certificate, Updated income tax return certificate.
4. Must have experience of completing similar nature of service at least 02 (Two) large scale/ nationwide software development, implementation and maintenance service amounting taka 5,00,00,000 (Five crore) with the Government/ Semi-Government/ Autonomous/Private Organization of Bangladesh either combined or separately, where designing, developing and implementing Web based Application/ Mobile Application/ Desktop based Application is included. Must submit the work completion certificate in this regard.
5. Must have experience of successfully completing at least 01 (One) project where digital document archiving and indexing at least 1,00,000 (one lakh) document archiving related work is included. Must submit the completion certificate in this regard.
6. Must have had an average annual turnover above TK 5,00,00,000 (Five core) in the last 02 (two) financial years. Must submit financial audit report showing annual turnover in this regard.
7. The minimum amount of liquid assets or working capital or credit line(s) of the tenderer shall be Tk. 5,00,00,000 (Five Corer).
8. Having e-service integration experience with Eksheba platform of Bangladesh Government (MyGov), Ecpay, e-nothi/D-nothi, NID and National Web Portal (NWP) will be given high preference.
9. List of adequate professional staffs with relevant qualification along with experience in developing similar solutions and delivering similar services.

Conclusion

  
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Ministry of Public Administration has the mission to deliver their best service with the use of information technology in the service delivery process. Here the vendor has to design, develop and implement a web and mobile based end to end solutions for Ministry of Public Administration, where a comprehensive technical proposal will play a very important role. To understand that, the vendor has to fully visualize the system requirement, development requirement with tools and technologies, constraints and challenges of implementation and thus present the best solutions in their proposal.

In view of the above, Vendor has to design, develop, implement, maintain a Single Sign- on web & mobile Apps based solution for Digital Services for Ministry of Public Administration. Obviously, the proposed technical proposal has to reflect the visualization, deep level understanding of the processes, system requirement/sizing, development platform, Quality Assurance (QA) plan including capability of adopting future technologies.



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