

## **Section 6. Terms of Reference**

### **TOR**

For Selection of Consulting Firm for design, development and implementation of an Online and Interactive web-based application Software for Programming Division covering,

srv-42 - Design, development and maintenance of GIS Interface for Budget Monitoring System

srv48 - Analytic Interface of AMS and other Databases For Programming Division

#### **A. Scope of Service**

The Planning Commission is the Central Planning Organization of Bangladesh. The Planning Commission follows a structural and coordinated approach towards development planning with steps, which are broken down into a long-term Perspective Plan covering 10 years, a medium-term (3-5 years) Plan, and Annual Development Programme (ADP). ADP is the key instrument of operation of the development plans.

Programming Division of Planning Commission is responsible for formulating the Annual Development Programme (ADP) of the Government of Bangladesh that is aligned to the objectives and goals stated in the Five Year Plans and Perspective Plan. Preparation of ADP/RADP is a regular and continuous process in the planning and budgeting system of the country.

In order to initiate the above process of development, the Programming Division of the Planning Commission was entrusted with the additional responsibilities mentioned below:

- i. To estimate district and division-wise break down of ADP allocations initially. Later it could be extended up to Upazila and Union Levels as Geocode will be used for Locations of the projects.
- ii. To formulate guidelines for the local level development plans;
- iii. To prepare ADP, RADP, Portfolio of Aid worthy Projects, Three Year Investment Programmes annually and reflection of food-assisted projects borne under ADP, RADP, TYIP and its integration into the resource flows;
- iv. To institute a rational, fully operational sector-wide programming, priority setting and review system for the continuous prioritization and pruning of development projects included in the public sector development programmes (ADP); and
- v. To undertake further development of the existing computerized planning database system of the Programming Division.

#### **(a) Functions of Programming Division,**

- i. Determination of the sizes of the Annual Development Programmes (ADP) and sectoral allocations/proportions.
- ii. Formulation of ADP and revision of ADP.
- iii. Preparation of Annual Technical Assistance Programmes (ATAP) and revision of ATAP.
- iv. Recommend release of ADP funds in relevant cases.
- v. Oversee ADP implementation/ administration.
- vi. Determination of external assistance requirements for ADP financing.
- vii. Preparation of the list of Aid Worthy Projects before Bangladesh Development Forum Meeting.
- viii. Inter - Ministerial and intra-Planning Commission co-ordination in matters of ADP preparation, revision and appropriation/re-appropriation of funds.
- ix. Provide secretarial service to the programming committee of Planning Commission.
- x. Keeping records of resource use.
- xii. Preparation and interpretation of the Guidelines for Local Government Development.



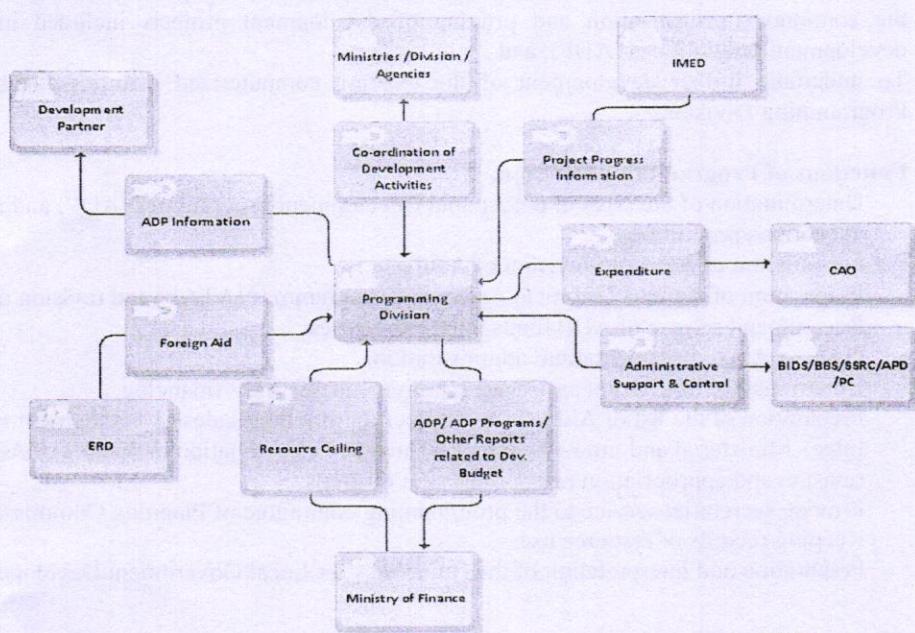
- xiii. Oversee formulation and implementation of Local Government Development programmes and coordination with Cabinet Division and Local Government Division in this regard.

Following Sectors are included into the sectoral division of Planning Commission:

SL. No	Division	Sector
1.	Agriculture, Water Resources and Rural Institution Division	05- Agriculture 08- Local Government and Rural Development 09- Environment, Climate Change(CC) and Water Resources(WR)
2.	Industries and Energy Division	04- Industrial and Economic Services 06- Power and Energy
3.	Physical Infrastructure Division	02- Defense 03- Public Order and Safety 07- Transport and Communication 10- Housing and Community Amenities
4.	Socio-Economic Infrastructure Division	01- General Public Services 11- Health 12- Religion, Culture and Recreation 13- Education 14- Science and Information Technology 15- Social Protection

*Table-I : List of the Divisions and Sectors*

The following diagram shows the high-level interaction of different stakeholders related to ADP Process.



*Figure-1 : Entity Relationship of the stakeholders related to ADP/RADP*



### **(b) The ADP and RADP Process**

The Annual Development Programme or ADP is the tool for achieving the sectoral economic objectives and targets which are in line with the economic development strategies that are outlined in the Perspective Plan and the Five Year Plan (2021-2025, 8th FYP).

The purpose of the RADP is “revising allocations of the projects included in the original ADP and making allocations to new approved projects eligible for inclusion in the RADP, as well as selection of new unapproved projects for inclusion in the RADP”.

The Planning Commission is responsible for preparation and management of the ADP and RADP. The Programming Division of the Planning Commission is the key agency responsible for preparation of the ADP in March-May and the RADP in December-January

### **(c) ADP/RADP Management System (AMS)**

A database and an Application Software titled ADP/RADP Management System (AMS) has been developed over the last 3 years to support all activities related with the preparation of ADP and RADP. This web-based application will not only provide an opportunity to prepare ADP and RADP but also it assist Public Investment Management (PIM). This application can also integrate with iBAS++ for data exchange facilities. In future it will also integrate with e-nothi and other Government Applications.

### **(d) GIS/Analytic-Interface Software**

The need for a GIS based analytics application that will interact with AMS database and will support as Decision Support System has been identified for better planning, monitoring and management of current situation up to Upazila and City Corporation/Pourashava level (in future upto Union Levels) as well as for customized dynamic report generation. The application to be developed or enhancement of an existing one will be act as GIS based decision support system of Planning Commission. This system integrates data, establish connection between different types of data source for data fetching, causal factors diagnosis and restoration of decision making to assist decision makers during and further forecasting of an event. The system should have standard functional components like data source management, model schemas, query generation, operator inclusion/exclusion, data fetching, presentation, data export etc. This effective system for policy makers, planners, researchers, administrators, development partners and other users to review current status and monitor and evaluate the performance and progress of development activities and to undertake necessary actions to accelerate them. It will also help to undertake necessary actions to minimize activity gaps and avoid overlaps. Information will be presented visually by graphs, tables, maps and short narratives to support quick decision making by the upper management of Planning Commission.

### **(e) Scope of Work**

This dynamic Analytic Application will provide a broader and informative view of current situation of projects undertaken by the Government of Bangladesh over the country which could be drilled down from Divisions, Districts, Zilla and upto Upazila/City-Corporation/Pourashava levels (in future it could be extended upto Union Levels). The scope of this assignment are described below:

#### **1) Data Interface**

- a) Data source type determination from all possible information storage
- b) Determination and finalization of available data sources for data fetch
- c) Finalization and approval of report presentation format



**2) Analytic Interface**

- a) Develop smart query builder in generating custom query by selecting relevant information from different Entities of different data sources
- b) Have provision to add or deletion of arithmetic, logical and lexical operators into custom generated query
- c) Develop a facility to run a custom generate query to fetch information from specified data source. Fetched information will be published as prescribed report

**3) Dashboard Interface with Graphs and GIS Capability**

- a) Prepare custom and dynamic dashboard with data plotting facility. Data can be presented into number card, Bar chart, Pie chart, line chart or other approved Graph views
- b) Information display in visual form (GIS, graph, chart, map, table)
- c) Presentation of Project information to a geographical (GIS) presentation up to Upazila/City Corporation/ Pourashava level (in future upto Union Level) and all over the country and must have provision to view statistical data dynamically according to the area or location selection over map

**4) Administrative Control**

- a) The application should be highly interactive and user friendly for selection of data connection, dynamic dashboard preparation, dynamic report preparation etc.
- b) The application must have Dynamic multi-layer user access control mechanism
- c) Pop-up menu, dialogue box or clickable option for further detail information into dynamic dashboard
- d) Restriction on database for external public viewing/editing
- e) Interactive GIS information option
- f) Multiple user access capability

**5) Query Interface for Parliamentary Questions**

- a) A separate module will be integrated to allow Parliament Users to Enter/Update various queries made by Parliament Members during Parliamentary sessions.
- b) This module will resolve questions posted by members by internal query generation on AMS data repository.
- c) The resolved data generated will be reported through proper reports and Graphs.
- d) This interface will be used by different users of all other Sector Divisions of Planning Commission

**Additional Features:**

- The application/system will have User Registration and Management Module which may coordinate with existing User Management Module of AMS interface
- The application/system will have Login Management and User Tracking Facility and Privilege Creation, Control and Management
- The security plan should include user roles and Profiles – accessibility, authorization and accountability
- The system should have complete embedded security measures against the data hacking/tampering; data access, and data in transit etc.
- Data/report export/print facility in PDF, CSV, XML/Json, Excel, and Email.
- The application should be developed in such a way so that it requires low bandwidth to run
- The web-based application should support cross browser platforms (popular web-browsers such Mozilla Firefox Opera, Chrome, Internet Explorer etc.)



- System must be developed in 3-tier architecture i.e. database, business logic and presentation layers.
- System must be in Unicode compliant languages including both Bengali and English languages.
- The application must have viewable compatibility from mobile, laptop, desktop as well as big screen like 85 inch or bigger display panel

## B. E-Service Non-Functional Requirements

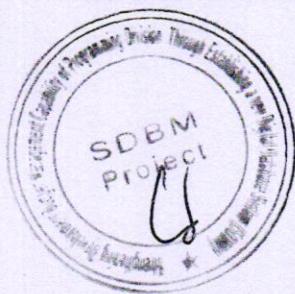
### ➤ Application Compliance Requirements

#### ▪ Web Application

- The application which is a web-based solution, has to be hosted in a centralized Web-server
- The application should be developed following Service Oriented Architecture (SOA)
- Application should support MVC framework.
- Considering the operating/client environment at different level of this application, it should be developed in such a way so that it requires low bandwidth to run.
- Should have ability to seamless integration with future module/components/applications
- Application should be lightweight and rich client-side scripting
- UI should be developed based on the analysis of UX.
- Any web interface of this application should be fully responsive

### ➤ Sizing, Performance and Scalability Requirements

- The system shall be capable of handling online functionalities of at least 10,000 system users.
- The system processing shall be scalable to support the volume estimates for a period of 05 years at a 20% annual growth rate.
- The system shall be designed to handle estimated 1000 simultaneous connection (online users) when it is ultimately rolled out.
- The vendor must conduct an extensive load testing task taking above factors into consideration and submit a load testing result.
- The database architecture should be such that the system is available to user 24x7 a year without any unapproved downtime.
- Page load time, login response-time, on-click load time for the web application should be less than 3 seconds while this is accessed over the intranet.
- Average transaction response time, on-submit response-time, or any other database access/search time should be less than 5 seconds when the system solution is accessed over the intranet.
- Considering the network infrastructure challenges in Bangladesh, the solution must support low bandwidth conditions for the services defined in the functional requirements.
- In case of mobile application also, this should support very low bandwidth even in 2G network provided internet bandwidth.
- The proposed solution should be highly scalable to accommodate current and future requirements within the scope of the scope mentioned in the TOR
- This application should be provided with appropriate caching mechanism to handle very high-traffic scalability
- The vendor may propose here other relevant measures for the application scalability.



## C. Technology

Operating System for application, web and database server	Programming Language/ Technologies	Framework	Testing Tools	Web/ Application server	Database
Enterprise Linux Server	PHP, Java, Python3+, ReactJS, jQuery, JavaScript, JSON, HTML5, CSS3,	Any Popular framework supporting pure 3-Tier technology (MVC) and as per consultation with Procuring Entity. e.g, Laravel, Spring Boot, NodeJS, Django, Flux	For API market leading applications such as Postman should be used. Testing Reports should be generated (both failed and Successful) and should be submitted.  For Bulk data testing popular packages such as Selenium, JMeter etc should be used during Application Development.	Apache, Nginx	Popular Databases such as MySQL, PostgreSQL, NoSQL etc.  For memory database support packages such as Redis should be followed.

Further Addition/Modification of subject matters, tools and techniques may be done as per discussion with the SDBM project team. Architectural style to be followed such as monolithic or Microservice based.

## D. Security

Proposed system should support both the application-based and operating system-based authentication for control. Following are the steps of the control measures for the possible threats to the system.

### a) System-level Security

It should be programmed within the application itself in order to implement a user or group model.

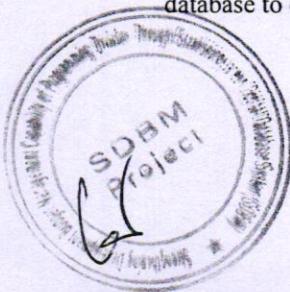
To eliminate the security threats, authentication and authorization have to be built into the security design of the application with password control that will limit the user to retrieve any information, use module or generate report which is out of the authority. Authentication is the process in which the application verifies a user's identity and credentials. Authorization will actually verify the authenticated user's permissions for a requested resource.

Modification of sensitive data will automatically invoke the trigger to store the old data to audit.

### b) Server/Machine Security

It means the limitation of physical access to a machine and generally would require an additional login in order to gain access.

The operating system will restrict unauthorized users to log on or open the computer and database itself secure database to delete or add any data from unauthorized user.



### c) User Group-level security

Since the system is a web based application where users are managed by separate managements at different locations, a multi-layered user right policy needed to be applied.

Users having common activities constitute a user group where all of them have common rights and common resources (objects and data). A user can be granted right to access (any combination of view, insert, update or delete, or executing processes) any object or data. The rights can be granted to the user group also, where all members of the group get the rights of the group through user level and group level profiles/templates

Further, if any object of a system is granted access to data or other objects, then users or members of a user group that have right of execution of the object, get the right to access those object or data.

This multi-layered security structure provides flexibility to the security management, and the security management policy can be implemented in a better way.

The application allows a security administrator to be setup that is responsible for administering user accounts. The security administrator can also set up other security administrators as well. When defining security, the security administrator can give 06 (six) levels of security for any entity within the system:

- **Add** – Gives the user the ability to scan and add records to the entity.
- **Update before Publication** – Gives the user the ability to update records in the Entity before publication through website (Content user will be given this right).
- **Update after Publication** – Gives the user the ability to update records in the Entity after publication through website (Moderators will be given this right).
- **View** – Gives the user the ability to access (read) data from the entity.
- **Publish** – Gives the authorized user right to Grant publication of the content to the website.
- **Archive** – By using this button unwanted information may be sent history section.

## E. Audit Trail

The system shall keep audit trail for every single activity performed by the users and administrators. These audit trail shall have to maintain in following ways:

- **Application Server log files:** Each activity performed into the system shall be written into log file with timestamp, event, event detail, user id, ip address, mac address, device name etc.
- **Application logs:** Each changes shall be recorded into the database and be showing at the front end.
- **Change history:** While changing any data in the database, system shall have to keep previous record into history for a period.
- **System Log:** All the system related activities including error log, shall be written in the system log file.

Since auditing carries a high performance hit due to the overhead required for verifying and logging auditing information, but it provides valuable information concerning security problems or modifications to sensitive data. Auditing should be done to capture and store information that exists and modified at the Attribute and Entity levels.

As per standard practice, all changes to the GIS-ANALYTIC INTERFACE application will be recorded, along with any unauthorized attempts to access the system or alter the site. Every change at the page level (including field level) and the required confirmation will be recorded, along with the date and time of changes and the persons who have made this changes (the Username) along with his technical information such as IP address, MAC address etc. Typically these reports would be restricted to senior staff and the Consultants propose they are not accessible to individuals below the rank of Deputy Chief/Deputy Director/Deputy Secretary. It is also possible to control the access to entry/update the data through Cookies. User IP address could also be entered/updated in an IP table inside the database which will help in controlling the controlled access to database. A sample format is shown below which could be presented in a standard report format.



Module Name	Name of Field	Information changed		Date of Change	Time of Change	Changed by	IP Address, MAC address etc
		Before	After				
Minister information	Meeting date	12-Oct-2005	12-Nov-2006	12-Jan-2013	12:35 am	Amirul Hossain	192.1.168.55 (internal)
Monthly Report	Meeting Place	Meeting Room-2	Meeting Room-3	12-Jan-2013	18:23 pm	Rafiqul Islam	212.156.203.55 (External)

Further security processes can be discussed with the SDBM project team and be incorporated within the application.

## F. DATA Retention

The system shall retain all developed data online for life long. There will be data warehousing policy and the same shall be implemented for the system. These policies shall be defined together with solution vendor(s) at the design phase and shall be included in the SRS. Perspective plan, five-years plan, multiyear PIP, predictive analysis and other factors shall be considered to formulate such policy.

## G. Fault Tolerances

For the proposed system, we strongly suggest fault tolerance implementation in the application system. Our proposals for fault tolerances are as follows:

- **Application Fault Tolerance:** Application fault tolerance would be implemented. This means, in the event of an error, all information can be restored to its prior state without restoring to backups or being required to know the previous information.
- **Other Fault Tolerance:** As required by the client and as proposed by the consultant.

## H. ERROR Handling

- Any system error shall be noticed to the system administrator by email and SMS.
- The system administration team member(s) shall be assigned to fix the issue(s).
- Client's team member and Solution vendor(s) team members jointly shall fix the issue within stipulated time.
- The whole things shall be managed using a proper trouble ticketing system.
- There will be automatic and manual escalation process and KPI shall be measured.

## I. Disaster Management

There could be major disasters due to flood, fire, earthquake or any other natural calamity causing complete loss of the valuable data archives. This must be addressed by adopting the following measures:

For ensuring database and image security, we propose to maintain at least one backup location of the entire database in suitable areas outside the premise of Programming Division in a remote location. Additionally, a Disaster Site, recommended as required by the client, should be considered for ensuring an un-interrupted operation of the system in some disaster events.

For such purpose suitable backup software could be adjusted/recommended

## J. Help Desk Support

A Help Desk Support (HDS) has to be started during Piloting of the project and maintained all throughout the Project period. A dedicated person from the Consultant should be present to answer all relevant support services. This person should also train a few other personnel from the Client site to gradually transfer the help desk support system.



## **K. Training**

### **a) End user training (Programming Division and other Divisions of Planning Commission personnel)**

This group will consist of personnel from Programming Division, each Sector/Division and other relevant persons who will make and keep the system running using their skill and labor every day. In this category there will be several functional groups depending on the area of their job. Each group will be trained separately on their part. Programming Division and consultant will define these groups during system analysis and client will provide the list of the training participants. The trainees will receive hands on training on subjects specific to them rather than receiving conceptual understanding on the overall functionality of the total system. This is the key training activity of the project.

#### ***Training areas***

- Presentation on the overall concepts of the application and its scope and benefit.
- Demonstration on Operation of the GIS-ANALYTIC INTERFACE application
- Hand on training on the specific area.
- One day Training of Trainers (ToT)

#### **Training Manuals and Logistics**

- High quality training manuals (including Technical and user manuals) has to be supplied wherever required. Beside, presentation slides and other audiovisual method implied in the training will be available to user.

#### **Refreshments and Meals**

- High quality of refreshment and lunch should be provided.

**Total Number of trainees:** 20 (Twenty persons at least)

**Batch:** 1 (one)

**Duration of training:** 3 days/batch

### **b) Technical Users**

A strong technical team is required to maintain such a large application and provide prompt support to the user unless a complete outsourcing policy is adopted. Generally technical users are from IT department of the organization/office or has already completed management and end user training and are the officially responsible for smooth operation the computer system after expiry of the post implementation support phase. Consultant can arrange based on agreement, training for such personalities who will work as system administrator/database administrator, programmer, web master etc. in areas specific to the scope of the project.

#### ***Training areas***

- Database administration
- Application administration
- Application trouble shooting.
- Network administration (Basic)
- Application error analysis and reporting.
- Hardware trouble shooting (Basic)
- Network trouble shooting (Basic)
- 24 (Twenty Four) hours for GIS/Analytic Interface & 16 (twenty four) hours for Other Administration and Troubleshooting.

#### **Training Manuals and Logistics**

- High quality training manuals (including Technical and user manuals) has to be supplied wherever required. Beside, presentation slides and other audiovisual method implied in the training will be available to user.



#### **Refreshments and Meals**

- High quality of refreshment and lunch should be provided.

**Total Number of trainees:** 5 (Ten)

**Batch:** 01 (One)

**Duration of training:** 05 days/batch

#### **L. Warranty**

Warranty period is 3 (Three) months. Warranty period will include the following tasks:

- The service will be free. No charges should be included for the System Analyst, Programmer, Designer, Network Administrator and the Testers involved.
- 01 (One) System Analyst (Full Time) and 01(one) programmer (Full Time) responsible for maintaining the system and they will work directly under the supervision of the client as regular staffs. System analyst will provide full support when needed. The persons will be given full support from the consultant to perform the following tasks:
  - ❖ Fix any problems in application within 02 (two) days
  - ❖ Fix any security issues (including virus attacks and other security problems) within 24 (twenty four) hours
  - ❖ Maintain time and full back-up and recovery of data in case of disaster.
  - ❖ Assist the client to maintain and enhance the system through transfer of knowledge as required.
- 01 (One) Designer (Partial Time), 01 (One) Tester (Partial Time) and 01 (One) Network Administrator will be used as per call basis when and where needed.
- 01 (One) Trainer and 02 (Two) data entry operator will be used as per requirements.

#### **M. Maintenance**

After the completion of 12 (Twelve) months of warranty period, the consultant will have to provide maintenance for 12 (Twelve) additional months. Maintenance will include the following tasks:

- a) At least 01 (One) programmer and 01(one) Data Entry Operator will be responsible for maintaining the system and he will work directly under the supervision of the client as a regular staff. The person will be given full support from the consultant to perform the following tasks:
  - Include or modify any functionality as requested by the client within a specified time.
  - Fix any problems in application within 02 (two) days
  - Fix any security issues (including virus attacks and other security problems) within 24 (twenty four) hours
  - Maintain time and full back-up and recovery of data in case of disaster.
  - Assist the client to maintain and enhance the system through transfer of knowledge as required
  - Assist the client regarding data entry into the GIS-ANALYTIC INTERFACE
- b) 01 (One) System analyst, 01 (One) Network Administrator, 01 (One) Tester, 01 (One) Trainer, 01 (One) Designer and 01 (One) DBA will provide support for partial time as call basis when needed.

#### **N. Sustainability after Maintenance Period**

A dedicated team needs to be develop/hire to maintain the system within the maintenance period. They may be given following responsibilities:

- c) Fix any application problems (in application areas, system software and database).
- d) Fix any security issues (including virus attacks and other security problems)
- e) Maintain back-up periodically and recovery of data.
- f) Assist others to maintain and enhance the system through transfer of knowledge as required

Dedicated team needs to have depth of knowledge on the following area:

- Developed GIS-Analytic Interface application
- Database administration
- Network Management



## **O. Duties**

### **a) Duties of the Client**

- Provide Consultant's Analysts / Designers access to information pertaining to the existing business processes.
- Provide Consultant's team members access to necessary hardware, system software, software media etc. during the application testing phase.
- Feedback by client, if any, on any documents / software submitted by Consultant to client, should be communicated in writing. Any further delay shall have equivalent impact on the project schedule.
- Ensure availability of test data
- Nominate personnel for training as per the schedule of training drawn up in mutual agreement.

### **b) Duties of the Consultant**

The consultant will undertake the following responsibilities:

- Doing thorough study of the existing process involved for the proposed solution
- Developing web-based application i.e. the GIS-ANALYTIC INTERFACE
- Develop other necessary application software related to GIS-ANALYTIC INTERFACE.
- Responding to change requirements under the guideline agreed upon by all stakeholders (i.e. Programming Division, Consultant etc.)
- Run a Pilot program with detail plan after initial system development to envisage the expected/unexpected modifications and addition to the requirements of GIS-ANALYTIC INTERFACE. This piloting will run for a quarter all 4 Sector-Divisions 10 Ministries/Divisions/Budget Entities (across different sectors/sub-sectors) taking part and who will continue to use the system throughout the life of the project.
- With the feedback from Piloting the Consultant must complete the GIS-ANALYTIC INTERFACE within the stipulated time frame and after training and initial data entry set out project completion information.
- producing detailed documentation on all aspects of application development
- provide test data and complete test plan and testing the system
- Give data entry to the system
- producing user manuals, training manuals and technical manuals for admin
- training of relevant personnel
- client service for 03 (three) months as warranty & 15 (fifteen) months as maintenance period after the software goes into full-fledged operation
- provide necessary hardware requirements and connectivity solutions

### **c) Joint Duties**

- Ensure availability of appropriate personnel for discussion with Consultant's project team during various stages of the project.
- Ensure monthly Management Review of the Project where project managers from both Client and Consultant will be present to iron out problems, if any, speedily.

## **P. Deliverables**

The following will have to be delivered as part of project implementation:

### **(a) Detailed Project Plan along with Gantt Chart with CPM ( should be submitted as Inception Report within 03 (three) weeks after getting the Notification of Award (NOA)**

This will contain at least the following:

- ❖ Nomination of Customer Project manager and User Representative
- ❖ Set-up environment
- ❖ Resource Allocation
- ❖ Detailed Project Schedule



- ❖ Review Mechanism
- ❖ Progress Reporting Mechanism
- ❖ Project Milestone details
- ❖ Piloting details
- ❖ Training details
- ❖ Change management process details
- ❖ Naming Conventions must be followed for various database elements and Programming methods and attributes.

**(b) User Requirement Specification Document/Software Requirement Specification (SRS)  
(Submitted as Phase-I)**

This will contain at least the following:

- ❖ Purpose and Scope of the Applications
- ❖ Definitions, Acronyms, and Abbreviations
- ❖ References
- ❖ Backup and Recovery
- ❖ Security
- ❖ Data Loading Approach
- ❖ Functional Requirement Specification (FRS)
- ❖ User Interface Design Specification
- ❖ Hardware & Software Environment
- ❖ Online Tutorial

**(c) Technical Documentation (Submitted as Phase-I)**

This will contain at least the following:

- ❖ System Functions
- ❖ Data Flow Diagrams
- ❖ Gantt chart with Critical Path Management.
  - UML Diagram
  - Use Case and Activity Diagram
  - Class Diagram and Sequence Diagrams
  - Component Diagram
  - Deployment Diagram
- ❖ Database Structure/ Design (with relevant E-R-diagram)

**(d) Piloting with detail plan document. (Submitted as Phase-II)**

**(e) User Acceptance Test Plan Document (Submitted as Phase-III)**

**(f) Source Code with Meticulous Documentation (Submitted as Phase-III)**

This will contain at least the following:

- ❖ Source Code
- ❖ Libraries Used
- ❖ Database Scripts
- ❖ HTML editor used (Licensed version if needed)



**(g) User Manual (Submitted as Phase-III)**

This will contain at least the following:

- ❖ Purpose and Scope
- ❖ Definitions, Acronyms, and Abbreviations
- ❖ References
- ❖ User Interface
- ❖ Navigation Details
- ❖ Error Messages

**(h) Software Installation and Content Update confirmation document (Submitted as Phase-III)**

**(i) Training Manuals (Submitted as Phase-III)**

**(j) Technical Manual for Administration (Submitted before Phase-IV)**

**Q. Software Testing**

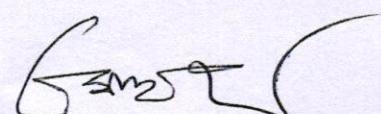
Software should be tested from Software Quality Testing Center, Bangladesh Computer Council (BCC) after each phase or as per discussion with SDBM Project Team and SQTC, BCC. The consultant should discuss and finalize the issues with SQTC, BCC and propose as per the understanding.

**R. Project Duration**

The project, including software development, data-entry and training, will have to be completed in 12 (Twelve) months which includes Piloting and updates required after Piloting. Warranty period and maintenance period will be 12 (Twelve) months and 12 (Twelve) months respectively.

**S. Location of the Work & Data:**

- Programming Division, Planning Commission



(Md Sayuzzaman)  
Project Director, SDBM Project  
Building # 2, Room # 13,  
Programming Division,  
Planning Commission,  
Sher-e-Bangla Nagar,  
Dhaka-1207, Bangladesh

