People's Republic of Bangladesh

Department of Information & Communication Technology (DOICT)
Agargaon, Dhaka
Project: Development of "Reporting, Support Ticket and Inspection (RSI) Management" Application

Terms of Reference (ToR)

Assignment : Hiring a Team for the Development of RSI Application
Contract Type: Development Agreement
Location: Dhaka, Bangladesh
Duration of the assignment: 120 Man Days

1. Background

Department of ICT needs to receive different types of reports from field level all the around the year. It also needs to give support on different products, projects to different level of clients (people/organizations). Higher officials of DoICT needs to inspect field offices, sections. All three forms of needs have been done manually so far and does not have well format report or tracing system. That is why it needs to develop a web application so that these problems can be sorted out in a dynamic way.

The Key objectives of RSI application are:

1. Make all reporting from field offices to HQ through this application so that further reporting would be smoother as data has been taken as digital format.
2. All the issues' resolutions have to be implemented through this application so that user and provider have track record on the resolution.
3. Inspection of all offices/section have to be through this application so that findings and resolution can be tracked.

2. Objectives

Develop RSI management system to make couple of mentioned works digital, easy manageable, perfect and fast.

3. Scope of Work

The design & development scope will be limited to the scope of work as identified in the TOR. The scope of work can be categorized with the following tasks:

1. Conduct a needs assessment in collaboration to DoICT to prepare the precise System Requirement Specification (SRS) for designing and developing RSI management system and Provide concrete development plan in the SRS, which should include context diagram

of the proposed system, Sequence Diagram, Use case Diagram, Activity Diagram, Data flow diagram, and Process Flow Diagram. After SRS it would be a great things to have mockup of the entire solution as module wise.

2. Design the solution architecture of the RSI management system Framework in a manner for better performance, flexibility, scalability, extensibility and multi tenancy of the system for future expansion. It has to have to the opportunity to make the application for using by multiple organizations so that each things have to be identified by organization.
3. Keep data migration for this newly developed system to make historical data workable from any other sources if applicable.

4. Expected Outputs/Deliverables

1. Software Requirement Specification SRS.
2. Development of an RSI management web application.
3. Software Deployment on Live Server.
4. Conduct User Acceptance Test
5. User Manual
6. Knowledge transfer through Training.
7. Complete Source code & database handover
8. Project Completion report including upcoming challenges if any.

5. Functional requirements

The proposed system should have the following functions (Not limited to):

Reporting Tools (RT):

a. RT formation
   This would be a dynamic form/report module by which admin user will create/organize a form. By using that designed form, user will fill up and send back report outcome. It could be comparable to google form but in this application DoICT expects much more.

b. Create new reporting item:
   This is a place where admin user will create a reporting format by which fields officers shall provide the reports at this form.

   Admin can set deadlines and able to send notification as well. Notification has to be in different angles like, bulk notification, user specific notification, resend notification etc.

   It should have category/type, fiscal year, section/office name, project name etc. to identify that report.

c. Fill up report forms:
   After creating report form by admin, sections/field level offices shall submit the report via this form. Users shall be notified as deadlines.

d. Check status

From here admin user will be able to check who/how many users are already have sent or have not sent report. From here, who are not sent report yet, admin will be able to notify once again.

e. Report Generation
    a. Report filter fields should be dynamic so that future fields can be added as per that time demand by adding any programming code.
    b. Export format should be available in excel, pdf, print etc.
f. Download Report Proof
    a. For report, proof is very essential things to submit higher authority. So it will have to have opportunity to download single or multiple report's attachment with proper naming convention and type. It will have to manage by naming convention for multiple attachment for single report. It has to have download facility for report itself.
    b. Before downloading report, it should have opportunity to arrange that report by putting different text and logo/image.
c. Dashboard
    RT should have a dashboard by which users may see the activity, status at a glance by report name, days, months, years.

Support Ticketing System

a. Submit Issue / Ticket
    i. It will have the provision to submit an issue / ticket via this system from registered user or public user. It will have options to check the submitted ticket status from submitter. Submitter will have the option to select his/her desire category also.
b. Resolution time / Response Time Management (SLA):
    i. After submitting any ticket, it will have a SLA by which submitter will be notified that he/she will get the resolution within that time. This will have the provision to from admin section to set same or different SLA for different type of ticket.
    ii. After resolution, submitter will be notified. He/she will be able to check the status from this system also.
c. Category/Level/Criticality management
    i. From here, admin user will create categories, sub-categories.
    ii. Admin will manage level of support system
    iii. Admin will manage criticality stages like General, Minor, Major, Critical etc
d. Assign issue/ Ticket
    i. As per category/subcategory it will have the option to assign user who will resolve the issues. Multiple user may be assigned to same category/subcategory and / or vice versa. By default, each ticket will be assigned to predefined issue resolver.
e. Accelerate Ticket
    i. One ticket may not be resolved by assigned officer. So he/she may transfer that ticket critical zone so that admin and/or critical zone user will take care this. This critical zone might be in multiple level. FYI, for each acceleration, SLA will be renewed and notified to submitter.

ii. It might be described as like: It may have multi-level resolver by which if initial level resolver is unable to resolve then he/she will put it critical zone from where it may be assigned to next level or critical zone user will assign

f. Report Generation
   i. Like other module, it should have dynamic report generation system. As a part of this, report filtering option should be much more to generate multi-dimensional report.
   ii. Each user will get his report as per level of permission.
   iii. Report format will be provided/discussed at SRS preparation time.

g. Dashboard
   i. Dashboard is very much important for this module as it is all related to support oriented. That is why this dashboard should be more purpose oriented.
   ii. It should have option to show category, level and/or criticality based stats.
   iii. It may show support stuff based stats
   iv. And many more.

Inspection/Visiting System

a. Schedule for a visiting
   i. Register for visiting: For every visiting, it needs to enter all the information related to visiting.
      1. Probable fields for this form: Name, Designation, Office, Visiting Purpose
      2. Add Office document / Administrative order (Multiple document may be added here.)
      3. Add assisting/protocol officer/s: It may be multiple officers as accompanies.
      4. Add Visiting office/s: DoICT office should be added to this system from before as in this application all field level officers shall be the user of this application. For other office or project, it will have option to add newly. After approval, DoICT offices shall be able to login as they are created already in this system. But other offices or project offices have to have option to login to see the schedule and other applicable things.
      5. Add schedule of visit. Day wise schedule will be there. After visiting, each section of visiting of a day should be marked as visited and will have option to give comments. It needs to have visual representation of touring as day wise and section wise so that one can understand the sequence of inspection easily.
   ii. Take approval: After preparing the visiting form, it will need approval to proper authority/as per user level permission of this system.
   iii. Visitor officer may visit multiple office at a time.

b. Notify visiting office
   i. It should notify through this system to visiting office/offices as Inspector may visit multiple offices at a time.
   ii. From the schedule, visiting office will know the detail of that.

iii. For multiple offices, each office will be notified.

c. Feedback form
   i. Give Feedback: After visiting each office, Inspector will write comments. There will be an option to have follow up this feedback later by Inspector. Visiting office will implement things mentioned in the feedback.
   ii. It will have good to give the improvement things as TODO wise so that it is easy to see as item. If that is given to the description then system will not understand the future doing things to mention later.
   iii. Visiting office will see all the note, feedback and improvements. At improvement section, visiting office will be able to give update on that improvement.
   iv. For each todo, inspector may mention time constraint.
d. Feedback Implementation Tracking
   i. Inspector will be able to see the improvement/progress of his/her recommendation given at feedback
   ii. Inspector may also be able to see the time bounded feedback items here to track.
e. Report Generation
   i. As per user role, s/he will get report area.
   ii. Organization user will see the reports of all field level offices report.
   iii. Office user will see his/her office oriented report
   iv.
f. Dashboard
   i. Dashboard will be different as per user role.
   ii. Org User will see whole picture of field level offices.
      1. How many officer visited office in this fiscal year?
      2. How many offices have been visited in this fiscal year?
      3. How many recommendations are implemented?
      4. etc
   iii. Office user will see his/her offices data at dashboard.
      1. Same as org user.

Common Things:

a. Organization Management
   a. It should be able to add DoICT as organization. And after that if some other organization like BCC or DSA or CCA wants to use this application then Super Admin can add that organization as well as do setup data for that organization.
b. Organization's Office Management
   a. Here admin will be able to configure/setup all sections/districts level offices/ Upazilla level office/ Projects/Others if applicable
   b. Office profile have to be there as an officer may be added to multiple offices as additional duty.
   c. It needs to have historical data of previous officer's activity.
c. User management
   a. Level based user
   b. Group based user

c. Module based user

**Need to introduce Unique ID for user.

d. Profile management:
   i. Working Office based Profile. By one user login, s/he will be able to see all role based area/activities. As example, one user/employee have additional duty to one or more offices. Then a single login will be required and he/she can see other office by changing the office only.
   ii. This feature will facilitate the authorized user to manage the basic information of the employee i.e. Name, Sex, Designation, Section name, Mobile number, E-mail address, NID, Employee Identification Number, grade etc. This management process might include bulk employee import to create employee base.
   iii. It needs to have track on employee promotion data.

   NB: It could be integrated with eNothi.

e. Role management
   a. Super Admin
   b. Admin
      i. Multi-level admin needs to introduce as it may need supervision of next lower level offices.
      ii. Admin user will have own settings so that he can configure some features of module as per local office need.
   c. Organization designation wise Role: It may have option to define role as per organization rules.
   d. Public
f. Permission Management
   a. Module wise permission
   b. Sub module wise permission
   c. Functional permission
   d. User group based permission
   e. Specific user based permission
g. Approval Flow management
   a. Every office should be able to manage its approval flow so that it may not be strict to organogram.
h. Setting Management
   a. General Setting
   b. Module based setting
i. Notification Management
   a. Email Notification
   b. SMS notification
   c. All notifications have to be stored in database so that it could be traced later on.
   d. Mass notification/ sending
   e. Application owned notification/messaging system
j. Report Management

    a. Module based report
    b. Dynamic Filter based report
k. Data Import / Export
    a. User Management
    b. User Roles
    c. Districts
    d. Upazilla
    e. Union
    f. Any Historical Data related to each modules
l. Activity Log: Each and every activity of users shall be written to log and super admin will be able to see this log from application. It needs to mention here that no operation will be deleted rather soft delete.

6. Non-functional requirements
    1. Ensure access control, application level security.
    2. Maintain and abide by BNDA's all types of design and standards.
    3. Design and develop Role-wise credential system incorporation for better user role management.
    4. System shall provide the ability to encrypt user IDs and passwords and impose minimum password lengths along with ability to reset passwords following a standard password strategy.
    5. There will be a Dashboard presenting dynamic data in reports in tabular and graphic presentations.
    6. The system should have provision for periodical & instant Data Backup & Auto Archiving System.
    7. The platform should be cross browser compatible, responsive and graphically attractive.
    8. The developed system must support Bengali UNICODE enable font so that Bengali content can be viewed properly from any machine, which support Unicode. The proposed system must facilitate for showing the content both in English and Bengali Language.
    9. Team will ensure system to be tested at module integration and load level. All necessary security test at application level architecture needs to be followed and conducted by the Team.
    10. Ensure SQTC testing by providing information to SQTC team of BCC before hosting this application.

7. Technological Specification

1. Need to use Open Source Development Platform.
2. PHP based platform with tool architecture like Bootstrap, framework like CakePhp/Laravel/codeigniter/Drupal can be used.
3. Future technology Change, iterative prototyping and agility in product design are the generic expectation.
4. Technology and all related design/data will be open to Client.
5. The Team should follow any of the industry standard secure development methodology such as (but not limited to) Comprehensive Lightweight Application Security Process

(CLASP) by OWASP etc. The Team should consider (but not limited to) common vulnerabilities such as SQL Injection, Cross Site Scripting (XSS) etc. Team will undertake responsibility for Input Validation Controls, Authorization/Authentication Control and other security controls in place in both test and production environment of application.

8. Project Timeline

SN	Activity	Time (Man Days)
	Development	
1	Conduct background scoping and research work and finalizing the system requirements	15 Days
2	Development of RSI application to incorporate client requirement as per approved SRS	60 Days
3	1st level feedback collection and incorporation	10 Days
4	Testing, debugging, update	10 Days
5	Delivery of UAT and 2nd level feedback collection	10 Days
6	Knowledge transfer through workshop/training	5 Days
7	Delivery of the final version of the system along with all required documentation including source code, user manual and technical documentation (SRS Final Version)	10 Days
	Sub-Total	**120 Man Days**

9. Supervision and Performance Evaluation.

Awarded Team will be working with DOICT

10. Project Management

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

1. Information regarding the development process
2. Application development tools, language, and database requirements
3. Maximum lead time for delivery of services.
4. A development method and schedule with indicative timeline (Gantt chart).
5. Risk management strategy and quality control mechanism.

6. Any development tasks or assumptions that may be required to render the solution fit for purpose.
7. Any anticipated integration tasks.
8. Comprehensive contingency plan.

11. Team Qualification

1. Must submit valid Business Documents.
2. Team should have experience similar type of work.
3. Team must demonstrate its management capacity (website link/brochures and other documents describing similar assignments, experience, availability of appropriate professional staff and experience among applicant's staff, resources to carry out the assignment).
4. Team should demonstrate its logistical capability (well-equipped office space at Dhaka with necessary facilities).
5. List (Name, designation, years of experience, number of projects, expertise) of IT personals who can be engaged to perform the assigned task.

12. Special Note:

1. DOICT will preserve full rights to be confirmed security clearance of the personnel [if necessary] who will be working for this assignments through proper agency.
2. Contractor may need to sign separate non-disclosure agreement with DOICT considering data/information sensitivity [if needed].
3. Intellectual Property Right will strictly be controlled under regular state law for IPR protection.
4. Team will have to have clear concept on the expected components before starting work

13. Support/Assistance to be provided by DOICT

1. Training venue will be provided.
2. System design supports.
3. Coordination in hosting in DoICT server.