Terms of Reference

Development of eGovernment eLearning Platform

1. Introduction

Digital Government is the process of reforming the way the government works, shares information, engages citizens and delivers services to external and internal clients for the benefit of both the government and the clients that they serve. There are three major stakeholders of Digital Government. Namely, the government, citizens and businesses. Digital government improves delivery of services to citizens, businesses and employees; engages citizens in the process of governance through interaction; empowering them through access to knowledge and information and makes the working of the government more efficient and effective.

Development of capacities among government workforce is considered as one of the key requirements to enable digitally empowered government. Currently the ways of means knowledge disseminate among the government employees is consider static. The structure of delivery has not evolved for decades and still relies on conventional methods rather than effective methods. This method has limitations. Geographical distribution of participants and the change of content regularly means that most of the 1.3 million Sri Lanka government employees (Annual Report 2014 – Central Bank of Sri Lanka) which including all level of government officers in government of Sri Lanka.

With the rapid progression in information and communication technologies, governments are able to deliver more sophisticated services to their stakeholders. People are more digitally connected in comparison to 10 years ago. Most of government employees are also equipped with mobile devices that ensure real time ability to access information and knowledge irrespective of geographical boundaries. The future promises an increase of individuals who will use eLearning platforms as their primary source of information and knowledge sharing.

2. Background

Human resource is considered as one of the main factors affects to ensure the successful transformation of eGovernment. With the transformation which is to be taken place on upcoming years it is evident that there is a significant requirement of uplift relevant competencies among government officials at a rapid phase. This has been reflected in various surveys conducted by ICTA and other agencies on eGovernment, Human Resources Capacity Building etc.

ICTA has already commenced several initiatives in collaboration with government and other organizations to develop required capacities and competencies among government officials at all levels. There are multiple delivery methods are being adopted to deliver these training programs to intended

stakeholders. Moreover, ICTA has already in the process of developing an ecosystem which facilitates dissemination of eGovernment knowledge with the involvement of SLIDA, state universities, private universities, international training providers etc. However, considering the number of officials to be trained; it is evident that there are difficulties in assuring the quality of delivery and up-to-date education to all public employees due to barriers such as geographies, time, dynamic nature of the subject domain etc.

Current distance learning courses are not designed in user friendly manner where everyone can access them with minimal learning curve. Most of the course contents are not standardized to the knowledge level of stakeholders. Similarly, users cannot share their knowledge, and learn in interactive manner.

By considering the above mentioned requirement, ICTA is planning to develop a comprehensive eLearning platform which facilitates adaptive learning for government officers.

3. Project objective

Develop an eLearning Platform for Government officers which facilitates Adaptive Learning.

4. Scope of work

The consultant should perform the following list of services of proposed eLearning platform;

4.1 Development of eLearning platform with Service Oriented Architecture, Enterprise content Management system

4.1.1 Apply adaptive learning techniques
4.1.2 Make device responsive (Mobile/Tabs)

4.2 Content creation and acquisition

4.2.1 Develop interactive digital content based on the standards provided by SLIDA.
4.2.2 Submission of Flow Charts/ Course Maps etc.
4.2.3 Submission of Story Boards
4.2.4 Delivery of content at different user groups/levels identified (annex 1)

4.3 High-level functional requirements

Functional Requirements

4.3.1 Authentication -Login and its sub functions
4.3.2 Authorization -Review, approval, Setting up permissions
4.3.3 Page Management -Create text based pages, Objects, Links, diagrams, Video, Audio, Embedded HTML
4.3.4 Layout Management -Maintain and create page hierarchies

4.3.5 Interactions-Commenting, Like Highlighting, Bookmarking, Reference points, Tracking, Tagging
4.3.6 Search -Advanced search for images, objects, video etc., Autofill search
4.3.7 Page types -Q&As, Assessments or assignments, online voting facility via polls
4.3.8 Exam Module -Setup exams, Reports on exam results
4.3.9 Federated search across data sources- Animations, Simulations, Images, Video and Audio
4.3.10 Downloading
4.3.11 Reporting
4.3.12 Development of APIs for Payment, Authentication
4.3.13 Support for all three languages Sinhala. English and Tamil

Nonfunctional Requirements

Refer to the Annex 2

4.4 Maintenance of eLearning Platform

4.4.1 Following services should be provided by the consultant for a period of a one (1) year

4.4.2 Manage and maintain the eLearning platform for a one (1) year period from the date of acceptance letter (sign off) issued by ICTA.

4.4.3 Updates requested by the ICTA & SLIDA should be uploaded within 24 hours of receiving the information.

4.4.4 Provide helpdesk support to user in updates and contents management for one (1) year period from the date of signoff.

4.4.5 Attend to all types of corrective maintenances (Bug fixing and installing of security patches). If user discovers any error/failure in the platform, web consultant should respond and rectify immediately. Meantime to Response (MTR) should not exceed one hour and Mean Time to Resolution should not exceed 24 hours from the time of being informed. notification of errors/failures should be possible through email, telephone, and fax or in letter format.

4.5 Tasks to be carried out

4.5.1 Literature Review on similar learning management systems and trends
4.5.2 Identify and analyze gap with regard to enhancing the system considering the best practices and scalability
4.5.3 Identify user experience to be embedded to the system
4.5.4 Provide architecture design, prototype along with project plan, SRS

4.5.5 Identify and draw the content management/DRM/user Management workflows and other system relevant workflows

4.5.6 Design and development of platform, Application

4.5.7 Preparation of QATP and QATC base lining the SRS signed off by ICTA

4.5.8 Functional and non-functional testing and comprehensive test results and final test report

4.5.9 Liaise with ICTA and ensure implementation, provide consulting, progress input whenever requested by ICTA on certain specific matters

4.5.10 Consultant is required to present the progress during review meeting at ICTA.

5. Deliverables & Time Line

Total duration of this project is 24 months. Following deliverables should be delivered in a manner acceptable to review committee which comprises representatives of ICTA.

No	Deliverables	Duration
1	Milestone 1 1. Inception Report 2. Project Management Plan 3. Requirement Verification Report including following • Detailed requirement Specification • Gap analysis and implementation approach	Commencement Date + 3 weeks
2	Milestone 2 1. Detailed architecture document for the complete system and design 2. Detailed Software Technical Documentation (DSTD) 3. Test Cases High-level/Test Management Plan 4. Proof of concepts (POC- Functional Prototype)	Commencement Date + 6 weeks
3	Milestone 3 1. Deployed and working version of first iteration along with digital content in English Language 2. Test Results	Commencement Date + 12 weeks

	3. Training 4. User Acceptance Testing	
4	Milestone 4 1. Deployed and fully working system of final iteration with English Language, Sinhala language and Tamil language 2. Integration of all the modules and deployed (working version) 3. Final Test Results Report 4. Training 5. User Acceptance Testing	Commencement Date + 42 weeks
5	Milestone 5 1. Acceptance of the following; • Operational Acceptance Testing (OAT) • Deployment guideline 2. User Acceptance Testing 3. Final release note	Commencement Date + 44 weeks
6	Milestone 6 1. Maintenance of eGovernment learning platform	Commencement Date + 54 weeks

All deliverables should be delivered complying with the client satisfaction

6. Minimum Qualifications of key staff

The consulting firm should have the suitable resource persons for the following position in this project with relevant qualifications and experience.

No	Key Experts (Positions) required	Preferable Qualification	Years of Experience	Minimum Number of Positions
1	**Consultancy**	Degree from a recognized University Expert on eLearning eLearning in higher education Knowledge and ability to assist development of latest digital learning platforms	Demonstrate at least 3 years of experience in similar capacity.	1
2	**Project Manger**	B. Sc. Degree from a recognize university in IT or related subject with Professional Qualification	Demonstrate at least 3 years of experience in similar capacity.	1
3	**Tech Lead**	Degree from a recognized university	Demonstrate at least 3 years of experience in similar capacity.	1
4	**Senior Software Engineer**	Degree from a recognized university or Diploma in IT related subject with Professional Qualification	Demonstrate at least 4 years of experience in similar capacity with knowledge on Sinhala and Tamil Unicode and open source CMSs.	1
5	**Software Engineers**	Degree from a recognized university or Diploma in IT related subject with Professional Qualification	Demonstrate at least 2 years of experience in similar capacity with knowledge on Sinhala and Tamil Unicode and open source CMSs.	3
6	**UX Designer**	Diploma in IT or related subject with Professional Qualification	Demonstrate at least 2 years of experience in similar capacity	1

7	**QA Lead**	Diploma in IT or equivalent qualifications	Demonstrate at least 2 years of experience in similar capacity with Knowledge on Sinhala and Tamil Unicode and open source CMSs.	2
8	**Content Development Team**	(Instructional Designers, Subject Matter Experts, Animators, Content Developers, Graphic Designers)	Demonstrate 1-year experience minimum	

7. Services and Facilities Provided by ICTA

ICTA will provide the following facilities to the development team.

- Setup meetings with key stakeholders
- Provide text books UNAPICT 12 modules for phase 1 content.

8. Review Committee and Review Procedures

ICTA will appoint a review committee in collaboration with stakeholder organizations (Consultative Committee) to review the all deliverables and documents prepared by the selected consultant.

Annex 1

Group A: Top Level Management

This group consisted of the heads of Ministries, Departments, Statutory organizations, Provincial level organizations, District secretariats, Divisional secretariats and Local authorities.

Group B: Second Tier Management

This group consisted of the unit-level functional leadership i.e. the second tier of the Ministries, Departments, Statutory organizations, Provincial level organizations, District secretariats, Divisional secretariats and Local authorities.

Group C: Chief Innovation Officers

This group consisted of the CIO's of the GoSL agencies/ bodies and the ex-CIOs

Group D: Middle & Junior Management

This group consisted of the middle-management level of the Ministries, Departments, Statutory organizations, Provincial level organizations, District secretariats, Divisional secretariats and Local authorities.

Group E: Operational Staff

This group comprised all other staff in the Ministries, Departments, Statutory organizations, Provincial level organizations, District secretariats, Divisional secretariats and Local authorities.

Group F: End Users of Government Services

This group consisted of the user community of e-Government outside Ministries, Departments, Statutory organizations, Provincial level organizations, District secretariats, Divisional secretariats and Local authorities.

Annex 2

Non-Functional Requirements

Security and Authentication

- Only authenticated users should be allowed. Access privileges should be granted to a user by assigning roles. The roles should be created by assigning tasks. (Refer Chapter XX of DSRS).

- The application should ensure “confidentiality” and “integrity” wherever applicable by adhering to transport and message level security standards. (i.e. HTTPS, WS-Security).

Audit Facilities

- An audit trail of all activities must be maintained. On a service or operation being initiated, the system should log the event, creating a basic ‘audit log entry’. It should not be possible for the operation to be executed without the log entry being made.
- The information recorded in the audit trail depends on the type of activity which takes place. Each service would be responsible for logging detailed information. The different types of operations are; (not limited to)
    - Data Capture & Maintenance
    - Creation of an entry / item
    - Modification an item
    - Deletion
    - Control (or status change)
    - Process execution
    - Data synchronization
    - Print (only selected item)
    - Retrieval
    - Monitor
- Detail logging may be enabled or disabled for each type of operation, and/or for each business object. It should be possible to configure which attributes of a data item should be traced at the detail level. Tracing of some attributes may be considered mandatory, and they should not be turned off.

High Availability and Backup

- Application level high-availability should be ensured. There shouldn't be any single-point-of-failure.
- Necessary mechanisms for off-site backup should be implemented. Backup procedure and restoration procedure should be properly documented and restoration should be properly tested.
- The main contingencies that should be considered and the training with regards to these shall be given to the relevant staff -
- Equipment failure

- Physical / natural Disaster
- Breakdown in EDM, messaging or communication facilities.
- Changes in operations and policy
- Sudden absence of key personnel
- Breach in Security

Performance

- Following performance criteria is provided as a guideline only. If the actual performance is falling below the stipulated figures, the consultant is to justify the reasons. However, the performance level must be accepted by the technical evaluation committee appointed by the client.
- The bandwidth is assumed at 256kbps with 50 concurrent users in total.

Item	Performance
Screen Navigation: field-to-field	<10 milliseconds
Screen Navigation: screen-to-screen	<5 seconds
Screen Refresh	<3 seconds
Screen list box, combo box	<3 seconds
Screen grid – 25 rows, 10 columns	<5 seconds
Report preview – (all reports) – initial page view (if asynchronous)	<60 seconds in most instances. It is understood that complicated / large volume reports may require a longer period
Simple enquiry – single table, 5 fields, 3 conditions – without screen rendering	<5 seconds for 100,000 rows
Complex enquiry – multiple joined table (5), 10 fields, 3 conditions – without screen rendering	<8 seconds for 100,000 rows
Server side validations / computations	<10 milliseconds
Client side validations / computations	<1 millisecond
Batch processing (if any) per 100 records	<120 seconds
Login, authentication, and verification	<3 seconds
Daily backups (@ Dept.) – max duration	1 hour (on-line preferred)
Total Restore (@Dept) – max duration	4 hours