JAMAICA: FOUNDATIONS FOR COMPETITIVENESS AND GROWTH PROJECT

Loan No.:8408-JM – Component 1

Assignment Title: National Business Portal - Development of IT Platform

Reference No. (as per Procurement Plan): FCG/CON/078

TERMS OF REFERENCE

1.0 BACKGROUND

The Government of Jamaica has secured a loan from the World Bank to finance a project entitled Foundations for Competitiveness and Growth (FCG). The Project Executing Agency is the Planning Institute of Jamaica (PIOJ) with key Project Components to be implemented by JAMPRO and the Development Bank of Jamaica (DBJ) as the Lead Coordinating Agencies. The overall objective of the project is to strengthen the business environment in Jamaica for private sector investment by promoting broad-based private sector-led growth, improving the investment climate, modernizing infrastructure and logistics, as well as enhancing entrepreneurship and competitive industries. Component 1 of the project, which is coordinated by JAMPRO, seeks to enhance competition in the business environment. The initiatives under the project are expected to strengthen the enabling environment for private sector competitiveness to help Jamaica unleash its potential for productivity and growth, including to assist in streamlining the development approvals and construction permitting process.

According to the World Bank Doing Business Report 2020, Jamaica is ranked 71 out of 190 economies. This is an indication that more intense efforts are needed to transform the investment enabling environment to increase efficiency and competitiveness.

The draft National Investment Policy (NIP) Green Paper outlines the planned strategies to reform/revolutionize the investment landscape of Jamaica. The Policy aims to streamline the investor experience across Government and offer strategic guidelines to identify, facilitate and realize greater investments in the country through the deliberate efforts of Government entities established to facilitate business.

It is envisaged that the creation of the National Business Portal (NBP) will complement and support implementation of the NIP through the development of an online platform that will house the Business-to-Government online interface for all Government entities involved in the investment or business facilitation process.

The Portal will be the central point through which all investments are routed, giving access to all relevant stakeholders and thereby providing transparency and government cohesion. The NBP will follow from the Government of Jamaica's recent launching of the GOV.JM platform, which serves as an online gateway to all government information and services.

The main functions of the National Business Portal are as follows:

- Provide simple, but detailed information to potential investors on all aspects of doing business in Jamaica, including relevant agencies and their processes, expected timelines and costs;
- Allow key Government entities to be apprised of the development in respect of new investment projects, including the provision of a closed group interactive discussion forum for the agencies in the back end of the platform;
- Allow potential and existing investors to register their interest or project as an investment, and interface with key Government agencies for the application and processing of key investment related permits and licenses (some of which may be accessed through the portal, but hosted on separate systems); and
- Provide a platform to drive improvements in the speed and quality of decision making by the participating Government entities through facilitating business process reengineering, exposure of processes associated with the approvals of the new investment projects and improved information sharing.
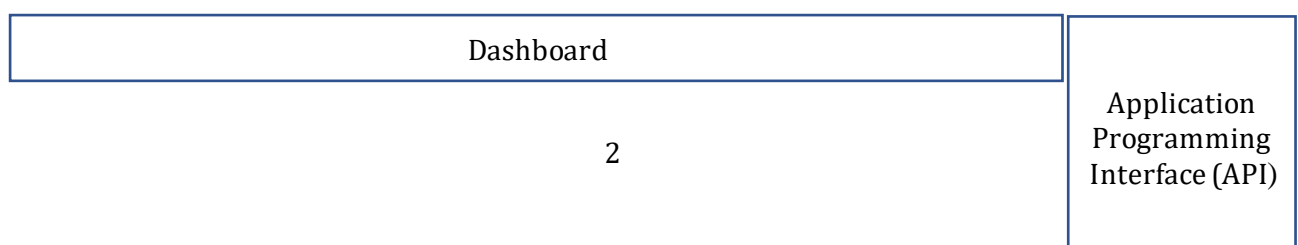
The concept is similar to the Online Business Licensing System (OBLS) that has been in place in Singapore and which is central to that country's position as the number one place to do business in the world for several years. The Portal will demonstrate Jamaica's commitment to reducing red-tape and creating an enabling environment for doing business consistent with the long-term National Development Plan - *Vision 2030 Jamaica* which provides the framework for the transformation of the Jamaican society and economy by 2030.
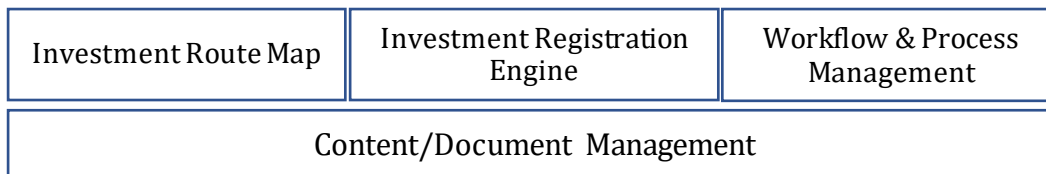
This 'one stop' electronic platform will provide easier access to public sector interests and potential investors and promotion of e-government which will boost Jamaica's international competitiveness ranking.

It is anticipated that the Portal will comprise the following major components:

Component	Description	Key Users
Dashboard/Discussion Board	Provides an overall status of the processing of investment projects across all Government entities	Investors, GoJ entities, other stakeholders
Investment Route Map	Visualisation of the processes required for a chosen investment type	Investors
Investment Registration Engine	Entry point for potential investors to enquire about opportunities and processes and most importantly, submit new investment projects for consideration	Investors
Workflow & Process Management	Provides for the monitoring and control of various business processes associated with the project reviews and approvals via an online discussion board on the Portal	GoJ entities
Content/ Document Management	Stores all associated documents and images associated with the investment project	Investors, GoJ entities

The diagram below illustrates the relationships between these components, all of which may over time interface with other GoJ systems.

Dashboard

Application Programming Interface (API)

Investment Route Map	Investment Registration Engine	Workflow & Process Management
Content/Document Management		

The NBP project is being executed in three phases as follows:

1. <u>Phase One: Baseline Data Capture and Investment Registration Engine</u> – the main objectives accomplished in this phase were:
    i. to design, develop and implement the "Investment Route Map" and "Investment Registration Engine" on an appropriate platform/architecture that includes the "Content/Document Management", enables integration/enhancement for the later phase functionality and provides a framework that:
        a) allows for the definition of different project types that includes detailed business facilitation/establishment processes, procedures along with timelines, document needs, costs and key contacts in each relevant agency for the project types;
        b) provides an easy to use, database driven, attractive visualisation of the major process steps associated with a given project type;
        c) allows investors to register their projects, submitting key data and documents for consideration; and
        d) aids in the information sharing and notification of the various Government entities on a proactive basis to enable them to advise JAMPRO on how to facilitate projects on a case-by-case basis as well as verify investor information.

2. <u>Phase Two: Targeted Business Re-engineering for Investment Processes</u> – **This Phase has already been completed** - Concurrent with Phase I, consultations were held with key Government agencies (e.g. Ministries of Industry, Agriculture, Tourism, Entertainment and Health; National Land Agency and the Cannabis Licensing Authority) that do not have online processes to analyse and reengineer their business process associated with the reviews of investment projects to make them 'online ready'. Specifically, this analysis achieved the following:
    i. Mapping and documenting the current processes (an 'As-Is Study')
    ii. Analysed the current processes to identify bottlenecks and redundant steps
    iii. Provided recommendations on how best processes can be reengineered, such as through streamlining/improving/simplifying current processes (a 'To-Be' study) to ensure processes/services can be accessed through an online platform.
    iv. Drafted the functional and non-functional requirements for the NBP.

3. <u>Phase Three: Design and Implementation of the full NBP</u> – This Phase will build on the earlier phases, extending the "Investment Registration Platform", developing and populating the "Workflow & Process Management" framework, implementing the Dashboard and rolling out the NBP solution. This Phase will have the following stages:
    a. Validation of functional and technical requirements for the key components and the processes of the NBP.
    b. Customise an appropriate IT solution to implement the identified and re-engineered business processes. This may be the customisation of an off-the-shelf or prior product, or design and development of a bespoke solution.
    c. Provision of the IT infrastructure roadmap to support the NBP software that has been developed.
    d. User acceptance testing
    e. Deployment of the NBP solution including:

   i. Development of internal users (GoJ) and external user (Investors) training material in electronic and hard copy
   ii. Training of GoJ users and system administrators
   iii. Population of the base data in the NBP
  f. Warranty and maintenance support services.
  g. Design of a reporting structure intended to monitor the progress in achieving the measures for success defined in Phases I and II.

The following projects are currently being undertaken that are related to the purpose of this contract:

- Development of a National Investment Policy
- Development of several online systems across Government, including, but not limited to:
  - the National Spatial Plan and Information Technology Platform that will help to guide development planning and investment decision-making.
  - the Jamaica Development Applications Portal which will allow for the processing and monitoring of development-related applications
  - the Jamaica Single Window for Trade (JSWIFT), which will integrate all trade-related processes.

2.0 GENERAL OBJECTIVE OF THIS CONSULTANCY

The FCG Project Development Objective of which this contract will form a part is, "*To strengthen the business environment in Jamaica for private investment*".

The overall objective of this project is to design, develop and implement the National Business Portal (NBP) to facilitate strengthening the business environment in Jamaica for private investment and achieve improvements in cost efficiency, agility, and innovation.

It is envisioned that the NBP will provide web-based access in a timely and efficient manner to all users in line with the requirements identified in the Terms of Reference and the functional and non-functional requirements.

2.1 Specific Objectives

The main objectives of this project are to design, develop and deploy a National Business Portal for the Government of Jamaica based on an intelligent and robust web content management system and digital experience platform as well as collect, analyze, format and upload all the data required to initially populate the Portal.

The Portal will be user friendly; and will act as a central repository for all regulatory information related to investment and business facilitation required by investors and businesses. It will aggregate and integrate all investment and business-related information, including that already available on individual ministries' and agencies' websites, in an easily accessible manner. The specific components to support the objectives comprise:

1. Functional and non-functional requirements verification

2. Design and develop the NBP solution which must be in line with current legislative and operational framework;

3. Develop an NBP in line with the functional and non-functional requirements;

4. Provide the IT infrastructure specification to support the NBP software;

5. Ensure that the online components of the system seamlessly integrate with all relevant stakeholders' systems with the new enhanced version of the NBP;

6. Build, conduct user acceptance testing (UAT), implement and deploy the online NBP system;

7. High availability solution to ensure there are no redundancies and that there is adequate data protection;

8. Provide system support and transfer of technical knowledge of the NBP's operation;

9. Build capacity through training of the internal (system administrators) and external (GOJ) users of the NBP;

10. Collect, review, assess, format and upload all the data required to initially populate the Portal, which will aggregate and integrate all of the information related to investments and business facilitation, including that already available on individual ministries' and agencies' websites, and syndicated from third parties such as the links to relevant international organizations, e.g. International Trade Centre (ITC), World Trade Organization (WTO), World Customs Organization (WCO), European Union (EU), United Nations (UN)/WTO etc., in an easily accessible manner;

11. Design a reporting structure to monitor the progress in achieving the measures for success defined in Phase II; and

12. Provide maintenance and warranty support.

2.2 Scope of Services

The Consultant, on the basis of its proposed software solution, needs to identify and provide all the functional and non-functional requirements to support the solution, including the necessary software, specified in the **Functional and Non-Functional Requirements**. The Consultant shall provide on-site training to the NBP staff, NBP system administrators and other key stakeholders on the one-stop-shop system for the duration of the project. This is for the purposes of technical knowledge transfer and continued support and system sustainability.

The Consultant must take into consideration that NBP initially has to start with the nine (9) processes and institutions set out in the table below with a target of approximately thirty six (36) potential processes to be added to the NBP portal in future phases of the project. The reports on the engineering design of these eight processes which was done to accommodate the NBP will be made available to bidders. These reports also define the interfaces required with the Jamaica Customs ASYCUDA and other GoJ systems.

Ministry of Health and Wellness
1. Productive Input Relief- Health
2. Registration of Pharmaceutical Products
Ministry of Culture, Gender, Entertainment and Sports
3. Accessing the Productive Input Relief for Entertainment/Creative Industries
Ministry of Tourism
4. Accessing the Productive Input Relief for Tourism
Ministry of Industry, Commerce, Agriculture and Fisheries
5. Accessing Productive Input Relief for Manufacturing
6. Accessing Productive Input Relief for Agriculture
Cannabis Licensing Authority
7. Applying for Cannabis Licenses

National Land Agency
8. Applying for the Divestment of Crown Lands
JAMPRO
9. Jamaica Film Commission Registration

The Consultant and the Project Steering Committee[1] will meet in Jamaica for specific periods of time (provide tentative dates and duration in the detailed project plan) during which the Consultant will work closely with the Project Steering Committee as their project counterparts to transfer all technical, operational and maintenance knowledge regarding the NBP software, supporting services and licenses, security components, etc. The knowledge transfer activities may also include the initial rounds of unit testing, integration testing and user acceptance testing[2].

3.0 COMPONENTS, TASKS AND EXPECTED RESULTS

The Project workflow is organized in seven (7) **Components** listed below:

- **Component A:** Project inception, inception mission, document review and project work plan

- **Component B:** Identification/validation of user and system requirements; design and presentation of the NBP system design. This includes reviewing the existing system to provide significant enhancements of current system functions. Development of System Requirements and System Design Documentation. The completed build of the NBP software with base information relating to the initial nine processes converted and loaded

- **Component C:** Provision of required installation and quality control in the production environment[3] to ensure smooth implementation of the proposed NBP software solution.

- **Component D:** NBP system enhancement and customization, deployment and implementation (including all Software Testing and Architecture Functional Installation)

- **Component E:** Provision of training to the NBP staff, other relevant Government officials, and key stakeholders.

- **Component F:** Operational acceptance of the entire information system, migration of historical data, NBP implementation and roll out. Final Project Report on NBP Development and Implementation

- **Component G**: Provision of Application Warranty and Support Service for twelve (12) months after completion of Components A-F (the Client can potentially request for another twelve (12) months of Maintenance and Support services upon the completion of the Warranty and Support Service period).

Component A: Project Inception

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[1] The Project Steering Committee is expected to include the following entities: JAMPRO, eGov Jamaica Limited, Cabinet Office, Cannabis Licensing Authority, Ministry and Industry Commerce Agriculture and Fisheries, Jamaica Customs Agency, Public Sector Transformation Project.

[2] Note: It is expected that the Consultant will spend sufficient time on the ground, working with the JAMPRO / eGOV team, so as to effectively provide the knowledge transfer needed to ensure the longer-term sustainability of the project.

[3] Note: In this phase application will be installed into production environment just for QA but not available to the general public.

a. Convene an inception meeting with the Steering Committee established with representation of key stakeholders from various entities to clarify objectives and terms of the engagement, present the project plan and methodology.
b. Convene any other meetings considered relevant to the preparation of the Inception Report
c. Collect and review all relevant material and outputs from Phases I and II
d. Undertake situational analysis
e. Review and validate functional and non-functional requirements for the NBP.
f. Prepare an Inception Report detailing how the project as described in this TOR will be administered including detailed timelines and responsibilities, and any recommended amendments to the approach to be adopted to ensure that the deliverables of the project are met. The Inception Report will present the findings from the inception mission including the findings of the review and validation of the NBP functional and non-functional requirements.

Deliverable: Inception Report

Component B: Requirements Identification/Validation and Design of the NBP

The Consultant will be required to complete the following tasks:

1. Conduct meetings with all relevant stakeholders to validate the NBP process and functionalities based on the findings from the review of functional and non-functional requirements.

2. Conduct meetings with relevant stakeholders to determine their IT infrastructure requirements that will be needed for system integration.

3. Develop a list of user roles and responsibilities.

4. Provide JAMPRO with a final technical and user requirement report for approval, which (at minimum) must reflect the **Functional and Non-Functional Requirements.**

5. Work with the Client to identify the configuration requirements for the system, including database fields, report formats and workflows.

6. Identify any customization requirements, as well as branding and other graphic elements to be included in the User Interface (UI) design.

7. Produce a draft System Requirements Specification document which details all user requirements and workflows for review by the relevant stakeholders.

8. Coordinate and plan with the Cloud provider for the required System Infrastructure.

B1. Core Functions of the NBP:

The core functions of NBP in Jamaica will be the following:

1. Application Processing for Productive Input Relief from Customs Import Duties (PIR);
2. Individual Institutional Applicants Registration;
3. Permit and Licences Certificate Management;
4. Individual and business database structure general information profile;
5. Document Management System;

6. Adaptable workflow capabilities;
7. Mobile and web accessibility;
8. Standard Interface with different stakeholders. This includes an interface and interoperability with the ASYCUDA Customs System and other relevant Government of Jamaica Systems.
9. Financial Management - Provide for on-line payment methods for each transaction type, and a standard set of MIS reports.
10. Best Practices e.g. Investment Promotion Portal in accordance with National Portal best practices, for example, World Bank's Developing an Information Portal Guide,
11. ISO/IEC 27001, standards information security management system (ISMS)
12. Online users; Regular or recurrent users, One-off users, and infrequent clients/users
13. System Administrative Functions.

B2. System Features:

The NBP Software must have the following system features:

1. Filling and lodging of application, productive input relief (PIR); permit and certificates;
2. Processing of application and decision-making function.
3. Data validation, authentication and authorization;
4. Real time application and process tracking system;
5. Workflow on real time status information and application tracking;
6. Two-way messaging communication and feedback;
7. Coordination of joint approval and control;
8. Exchange of information between different systems and applications;
9. Reporting and analysis;
10. Business Intelligence and statistical information;
11. Electronic fee payment management;
12. Parametric workload capabilities;
13. Digital signature and secure encryption for transmission;
14. Provision of interconnection with other Government systems including ASYCUDA for the easy exchange of information through commonly accepted modern standards for data interchange
15. Compatibility with the GoJ Standards for the development of websites https://uploads-ssl.webflow.com/59540f45c21883086b946619/5bc161475b2ebf3064519a8a_GOJ%20Web%20Standards%20manual.pdf and security of information and adheres to the W3C Web Standards (https://www.w3.org/standards/)
16. Implementation of access security, including user validation (usernames/password structures and two/three steps authentication for users accessing secure data) where applicable
17. Incorporation of best practices in web design and accessibility including social media integration such as Facebook, Twitter, YouTube, Google+, Tumblr, Pinterest, WordPress Blogs and RSS; which simplifies content management; and is capable of website scalability; and allows for analytics and monitoring
18. Be fully mobile responsive and ensure that the website can function adequately on PC and Mobile platforms, including mobile device (i.e. smart phones, tablets) optimization
19. Ensure a seamless user experience, which among other features should include good organization, formatting and presentation of content, fast loading times and effective navigation.

B3. IT Architecture, Infrastructure and Security Protocol:

The NBP IT environment must be designed for **non-public** and **public users**. The system must provide access for external users and an option for web mobile access. The solution must include Mobile Device Management (MDM) service which will provide better security for smartphones, tablets and most mobile devices. In addition, the solution must provide better security for smartphones, tablets and most mobile devices using a mobile operating system under encryption in line with the best practices.

The Consultant will develop an IT infrastructure roadmap that defines the infrastructure (hardware and software) to support the Portal/website based on the following:

    i.   Expected numbers of users and workload
    ii.   GoJ standards for resilience and reliability
    iii.   Application roadmap to support follow on Phases.

B4. Solution Architecture:

The Consultant should describe how the Solution Architecture for NBP meets the requirements of the TOR and **identify how the solution is designed to adapt to future business and technology changes.** The solution must be available and have functional system architecture in a state-of-the-art n-tier system, which is composed of modular products. The first tier is the [Web-based, Desktop or mobile] client with messaging to and from the messaging gateway, the middle, or second set of application tiers, and messaging via JDBC/ODBC.

The information system includes the following functional subsystems:

- Application Program Interfaces (APIs) – Win32 or J2EE Enterprises Solutions

- Server Platform - OS independent servers (e.g. Unix or Windows)

- Database - preferably SQL Server.

- SOA-based systems can therefore function independently of development technologies and platforms (such as Java or NET)

B5. Information & Communications Technology Infrastructure:

The Consultant should describe in detail the Information and Communication Technology Infrastructure required to support the architected solution, and **provide system performance benchmarks enabled by this infrastructure, plus any potential performance bottlenecks and resolution approaches.**

Deliverable: Systems Requirements Document

Component C: Provision of Required Installation and Quality Control of Production Environment to Ensure Smooth Implementation of the Proposed NBP Software

The Consultant must comply, for the solution installation, with the basic architecture requirements as set out in this document and in particular the *Solution Architecture* section.

The consultant will need to:

a) Provide a draft Service Level Agreement (SLA) to support discussions with the hosting provider
b) Facilitate the acquisition of hardware and/or hosting services for the implementation of the Portal/website to ensure it satisfies all IT infrastructure requirements.

Deliverable: Physical System Infrastructure Set Up (NBP system infrastructure installed and configured)

Component D: System Design, Installation and Solution Deployment

    i.   In collaboration with stakeholders, identify the configuration requirements for the system, including, but not limited to, database fields, report formats and workflows.

    ii.   Prepare and submit proposals for the design of the user interface of the system in a draft System Design Document.

    iii.   Prepare final System Requirements Specification and System Design documents incorporating any feedback from stakeholders including but not limited to the user interface.

    iv.   Develop new operations manuals and workflows for front and back-end users.

    v.   Provide a prototype of the proposed design.

    vi.   Make available a testing/prototype version of the application for ad hoc review as appropriate.

    vii.   Once the User Interface designs are agreed, and any additional adaptations to the software are identified and approved, the Consultant will develop the required code, build the application, configure the necessary parameters of the software and upload it to the development server.

    viii.   Develop the system as detailed in the System Requirements Specification and System Design documents.

    ix.   Design and Develop Training and Data Migration Plan.

    x.   Produce status reports every month on the progress being made in development of the system and conduct troubleshooting meetings as required.

    xi.   Conduct meetings every two weeks, which will be scheduled by the Consultant with agreement by the Client to discuss the issues that are being encountered in the development of the system.

The Consultant is required to install all the necessary configurations of the software on the Platform Architecture during this Phase. The solution shall be deployed on the NBP site after business hours and/or on weekends and all necessary tests performed prior to Client hand over.

The installation times and schedule will be finalized on the basis of the final approval by JAMPRO /eGOV. An operational readiness assessment should be completed during this phase.

D1. Testing Plan

The Consultant shall also:

    i.   Submit for approval, a User Acceptance Testing Plan with test cases to ensure that the assessment can be done to assure users that the system functions as required in the production environment.

    ii.   Administer the test plans and obtain feedback.

    iii.   Make changes to the application based on feedback given.

    iv.   Prepare user manuals and associated training.

    v.   Provide support as needed to stakeholders as they conduct live simulations.

    vi.   Make changes where necessary to refine the application based on stakeholders' feedback and with the approval of JAMPRO

The test cycle should include the following:

- **Unit Testing:** Carry out the unit testing to make sure each component and module of the system functions as designed.
- **Integration Testing**: After all modules of the system are developed, integration testing is carried out to make sure that all modules function and perform as expected when working in combination.
- **Load testing:** Since the application will be used by a large number of users in future, load testing will be performed to see how the system performs under heavy loads. This may require fine tuning the web server, application, application server, and/or the database server or network configuration.
- **Recovery Testing:** One of the important aspects of an application is how well it can recover in case of a system failure, server shutdown, or service failure. Tests shall be carried out to see how well the system recovers from crashes and Architecture Functional failures.
- **Security Testing:** Perform detailed security testing of the system. This involves a complete penetration test to make sure the application and the server is not vulnerable to any type of attacks such as SQL injection, XSS attacks, cross-site scripting, command Injection, file path traversal etc. This shall be done by using threat detection and vulnerability scanning software.

The following User Acceptance Testing (UAT) approach will be carried out by the Client prior to system acceptance and signoff:

- **Usability Testing**: Test the navigation between screens, user-friendliness and workflows of each of the screens. Against this, if deficiencies are identified the interface may be redesigned during this testing phase based on feedback from the Client.
- **Functional Testing**: A complete end to end functional testing cycle will run. During the functional test, actual processes, and all key services provided by the NBP system will be tested against the business requirement, (end to end) to see if the system meets the requirements, stores data and generates reports properly.
- **Acceptance Testing**: An end to end functional and quality of service (including security, performance and robustness) will be completed by the Client prior to any system sign off.
- **UAT Test Script** – The Consultant will create the UAT test cases and user scenarios to cover all core functionalities of the NBP. In each test case, write the manual test steps to be followed by the Client's test team. The Client will use this set, in addition to their own developed UAT test cases to complete the tests.

D2. Technical documentation

The technical documentation of the system will include:
1. System Design and Technical Architecture Document
2. Software Operations and Configuration Manual
3. User Manual (Electronic and Hard Copy)
4. System Implementation Guide and System Implementation Plan
5. Troubleshooting guides

Architecture documentation must contain the following:

1. Logical View of the system

2. Hardware Architecture
3. Software Architecture
4. Security Architecture
5. Communication Architecture

System Design documentation must contain the following:

1. Business Requirements
2. System Flow
3. Database Design (which includes tables, stored procedures, views and triggers, entity – relationship schema, etc.)
4. Application Program Interfaces
5. User Interface Design
6. Backup and Restore

An Operational manual for installation of software for NBP must be prepared in order to outline the procedures for:

1. Creation of the Database, and
2. Application Server Installation.

User Manual documentation must contain the following:

1. Tutorial and user guidelines
2. List or Reference cross index.
3. Screens and user interface System Flow
4. Help Guides/Online Help
5. Glossary of Terms and Quick Reference Guides

System Implementation Guide and System Implementation Plan

System Implementation Guide will describe:

1. Detailed system design specifications
2. Description of the major tasks involved in the implementation,
3. The overall resources needed to support the implementation effort
4. Installation and configuration instructions
5. Procedures for Creation of Database
6. Application Server Installation

Implementation Plan will describe how the information system will be deployed, installed and transitioned into an operational system. The Implementation Plan will contain an overview of the system, a brief description of the major tasks involved in the implementation, the overall resources needed to support the implementation effort (such as hardware, software. facilities, materials, and personnel), and any site-specific implementation requirements.

The **Systems Implementation Guide** will describe the configuration of the system in a form that can be used to recover the application in the event of severe technical failure or disaster recovery. The Systems Guide will also cover high level design of the application including the UML Data Model and entity relationship diagrams.

Deliverables:

- **System Design Document (this output will be produced during the system design phase)**
- **Completed NBP software application, software configured, and sample data loaded to enable testing (this output will be produced during the system development phase)**
- **Updated NBP with changes arising from UAT**
- **System Implementation Plan**
- **System Implementation Guide**
- **Deployment of NBP to production environment**

Component E: Provide Training to the NBP Personnel and Other Designated Stakeholders

The Consultant shall train the JAMPRO / eGOV personnel on the system's overall functionality, the system's administration management module and all business continuity and disaster recovery procedures including performance monitoring, backup retention/recovery and emergency training.

Training Activities

The training activities must be scheduled and coordinated with JAMPRO, covering the following:

- Operational procedures including archival/backup/restore procedures.
- System security protocols (Physical, Access Controls, Network, Database and Application).
- Systems management housekeeping routine (scheduled software and architecture maintenance, security support activities for servers including patches for server software, troubleshooting, maintaining logs and journals).
- Business continuity (including drills and simulations) in order to enhance NBP capacity to recover from backups so as to prevent or reduce systems downtime or outages and towards minimizing disruption to business.

The Consultant will participate in the initial staff training, and set-up a test database environment for the system that will be used for training purposes. The training program(s) will provide staff with a sufficient foundation of knowledge to use the system on a daily operational basis.
The Consultant shall conduct need-based training sessions in batches for the NBP staff and administrators to fully acquaint them with the overall operation and maintenance of the system, including the NBP application features and functionality. At least 8 training sessions or more if required by the Client must be conducted over a period of three (3) months to ensure the NBP staff is fully competent to manage the NBP environment and use the application.

The Consultant shall conduct training in the use of the NBP for approximately thirty (30) end-users. The number of persons to be trained will be finalized during the Inception Phase.

The training approach should address, but not be limited to the following:
1. Course description (i.e. learning objectives, content, and duration) of training to be provided;
2. Estimated number of individuals to attend each course;
3. Where and how the training will be delivered;
4. Names of resources who will deliver the training.
5. A methodology for assessing the overall competency/readiness of the trainees;
6. Ensuring that all attendees are qualified and competent.

Training materials

1. The Consultant shall develop video and training materials illustrated with screen shots of all user interfaces of the application. The training materials must be designed to also facilitate Training for Trainers approach and must be developed with a view that they can be used by NBP staff in conducting future trainings.
2. The Consultant must maintain and update all documentation for any system changes performed by the Consultant during the contract period and any negotiated extensions at no cost to the client.
3. The Consultant's method shall ensure efficient document control. The Consultant shall provide the details of a Knowledge Coordination Approach which indicates the specific formats and procedures for all documentation to be disseminated amongst the client project team.
4. The Consultant must ensure that a detailed User Guide is provided with the system. Context-sensitive Help screens are also required.
5. In addition to the full User Guide referenced above, the Consultant will be required to provide a "Quick reference guide", preferably in the form of a small booklet (in English, electronic and hard copy). The objective is to provide a structured, user-friendly, means to help a user perform a task. It is expected that this guide will focus on providing "how-to" essentials of the key everyday functions of, for example, registering, amending, discharging or searching the NBP without the user having to peruse the main document.

In order to ensure sustainability, it is expected that, knowledge transfer will be completed and all NBP officials will be fully trained so that NBP is able to maintain and operate the system independently without donor or Consultant's support.

Deliverables:
- **Hard and Soft Copies of Technical and User Manuals**
- **Training Reports and Training Videos**

Component F: Operational Acceptance of the Entire Information System

The Consultant should execute the following activities under this phase:

- **Migration of Historical Data** – Consultant should define the data migration that will be implemented for the transferring data between current registration and the new electronic format taking into consideration that the old system is mapped to the new system utilizing a design for data extraction and data loading. The current NBP data will require schema migration (database migration and database change management). The migration will be performed from the relevant system currently in use to the new NBP. This will need to include the necessary reporting and reconciliation process of all information transferred.
- **Final Report on NBP Development and Implementation** - The Final Report on NBP Development and Implementation will be presented to the Client at the end of the project and provide a final assessment of the project. In particular, the Final Report will detail the level of success of the project and if, and in what ways, the project has achieved expected benefits following implementation. This also includes follow up activities and recommendations. To include also Risk Analysis Component.

Deliverables:
- **Monthly Reports**
- **Final Report**

Component G: Provide Application Warranty and Maintenance Support Service for a 12 Months Period Following the NBP Implementation and Roll Out

The Consultant shall provide support services on the NBP application software for a period of twelve (12) months after acceptance of the software and installation by the Client, for any software that fails to perform according to specifications, the vendor will provide support to help the customer in restoring the software to operational mode.

The Consultant will provide an online bug reporting and tracking system into which defect/bug reports may be entered by NBP staff. The Client will permit the Consultant to have remote access to the system to enable the Consultant to fix the defects/bugs and report on completion.

Bugs will be classified in priority groups with the highest being "critical" or Severity 1 where users are unable to work and use the system. The Consultant will start work on the critical fixes within 2 hours of notification by the NBP staff and provide immediate response to critical problems that disable the system. If a defect in the NBP software cannot be fixed remotely, the Consultant will make its resources available to their local partners by telephone or online to work with NBP staff to complete the fix in the shortest time possible. During the support period, the Consultant will also provide online support to NBP staff that requires assistance in responding to external user requests for assistance.

The Consultant will provide a way to reach the support team during off hours for critical issues. A 24/7 support capability is preferred but not mandatory. However, support must be available during local business hours.

NBP Management Warranty Responsibilities

The NBP management team[4] will make reasonable efforts to cooperate with Consultant in all problem resolutions. This includes but is not limited to providing timely access to all required experts to resolve issues within the NBP environment. NBP will protect its data from loss by implementing appropriate back-up procedures as described by the Consultant. NBP will work closely with the Consultant support team to restore the data based on the restoration procedures to restore from the backups. It will be the responsibility of NBP to ensure all relevant personnel are available to the Consultant during any restoration process.

Warranty Period and Support Services

The Consultant will provide Maintenance Support Service to NBP for the duration of the warranty period of 12 months from the operational acceptance of the entire system. The Consultant will provide Maintenance Support Service to NBP (the Purchaser) according to the following terms and conditions:

- **Support and Services**

The Consultant will provide NBP, at no additional cost, with Support and Services sufficient to maintain and support the Software as set out below in conformance, repairing or replacing the

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[4] NBP management team is the production system management team who is in charge of day to day management and operations of the NBP.

Software if it fails to conform. NBP shall inform the Consultant in general terms when it detects any non-conformity, and the Consultant and NBP jointly will determine whether any malfunction or non-conformity is the result of the Software, Third Party Software, or the System.

- **Consultant General Responsibilities**

Help Desk Implementation / Incident Management. The Consultant shall provide support center coverage regarding suspected failures of the Software thereto to substantially conform to the Specifications ("Problems") between 8:00 a.m. to 6:00 p.m. [EST] "Principal Period" weekdays. For severity 1 issues, as defined below, an emergency phone number will be available during weekends and Consultant holidays.

Problem Management. The Consultant shall attempt to correct all documented Problems reported to Consultant by NBP that have an impact on business operations and cause the Software to not conform to Functional Specifications. NBP shall provide Consultant with a detailed description of any Problems, accompanied by examples thereof, if applicable.

- **Limitations on Consultant's Responsibilities.**

The Consultant shall not, as part of Maintenance Service, (a) provide advice or support regarding any Customization of the software; (b) provide onsite services, when an error could be eliminated online; (c) perform systems engineering or integration services; (d) provide service for the Third Party Software or other non-Consultant's software; (e) provide service resulting from Licensee's fault, misuse, negligence, or failure to perform specified NBP responsibilities; (f) provide service necessitated by a malfunction of any product or goods other than those delivered by Consultant unless authorized.

- **Service Level Terms:**

The Consultant will work for the prompt resolution of Problems and will respond to NBP as per the target service level and turnaround set below by using a dedicated contact telephone number or e-mail address or other acceptable form of communication for each support call.

Maximum turnaround time of response will be based on the following level of Severity. "Severity Level" means the level of severity assigned to an Error in the Consultant Software and/or System by Consultant and Purchaser using the following criteria:

Severity Level	Description
1	**Type:** Causes data corruption or system crash or users are unable to access and process data through the Software. **Responses:** Initial response call within two (2) hours after receipt. Calls will be handled on twenty-four (24) hours by seven (7) days a week basis. Consultant will use reasonable efforts to provide a fix, workaround, or to patch Severity 1 within 24 hours after Consultant confirms that reported Problems is a bug of the Software.

Severity Level	Description
2	**Type:** An Error that causes limitations that is not critical or severe to the development, deployment, or operational use of the Software and/or System. A Severity 2 Error has a reasonable manual or other workaround. **Responses:** Initial response call within twelve (12) hours after receipt. Severity 2 calls will be handled during normal business hours. Consultant will make efforts to provide a fix or workaround, or to patch Severity 2 within fourteen (14) calendar days and to incorporate Severity 2 fixes in the next upcoming release of the product
3	**Type:** All questions for information on the User or enhancement request. **Responses:** Initial responses to calls within twenty-four (24) hours after receipt. Severity 3 calls will be dealt with on a case-by-case basis. Provided the maintenance calls are received during normal business hours.

"Update" refers to a fix, patch or such other minor improvement, enhancement, modification or expansion of the Software and/or System which is generally commercially distributed by Consultant as part of the S&S Services and for which Consultant does not generally impose a separate charge.

If the Consultant fails to provide this service, the Consultant will be penalized in accordance to the terms of their contract.

- **JAMPRO Warranty Responsibilities**

Contact Person. JAMPRO / eGOV LTD shall designate two full-time employees and two alternate who have undergone training, as the persons responsible for working with Consultant's support representatives ("Contact Person"). The Contact Person shall take reasonable steps to resolve any questions before calling Consultant, including, but not limited to, recreating, and verifying the alleged problems and reviewing the pertinent documentation. Consultant will also designate two contact persons and two alternates for JAMPRO / eGOV LTD to communicate with.

Access. JAMPRO / eGOV LTD shall provide Consultant with access to and use of all information and facilities determined necessary by Consultant to provide Maintenance, including, but not limited to, software, architecture and support at Licensee's site to facilitate Consultant's on-line access to the System.

4.0 TEAM COMPOSITION AND QUALIFICATION REQUIREMENTS FOR KEY AND NON-KEY EXPERTS

Key Experts

The following key experts are required on the consultant team:

Key Expert 1: Project Lead

The Project Lead will be responsible for coordinating all activities under this assignment. The Project Lead should satisfy the following requirements:

- Postgraduate Degree in Computer Science, Management Information Systems (MIS), or any other related discipline
- Certification in Project Management (Prince2, PMI, APM, or equivalent)
- At least five (5) years' experience leading implementation teams for projects of similar size/complexity
- At least ten (10) years' experience conducting analyses for business process improvement and performing technology led transformations encompassing process, technology, operations and policy/procedural changes.
- Agile and ISO 9001 Experience in business application software and project Management and Methodology. Proficient in Microsoft Project software tool and processes.
- Knowledge of the Jamaican investment landscape would be an asset.

Key Expert 2: Business/Systems Analyst

The Systems Analyst should satisfy the following requirements:

- Bachelor's Degree Computer Information Systems, Information and Communication Technology or Technical Degree (Computer Engineering etc.).
- At least five years' experience in documenting functional and non-functional requirements and technical specifications for implementation of software.
- At least five (5) years' relevant technical experience in software automation, implementation and testing, including developing test strategies, test plans and test cases and in creating and managing automated functional testing scripts.
- At least five (5) years' experience conducting analyses for the design/development of web-based portals, client-server architecture and the design and development of websites and web applications.

Key Expert 3: Software Developer

The Software Developer should satisfy the following requirements:

- Bachelor's Degree in Computer Science, Computer Programming, or other related discipline
- At least five (5) years' experience developing and installing software/products in accordance with user specifications, testing the product in controlled and real situations, troubleshooting technical issues and also developing data migration and integration processes
- Demonstrated experience in the design/development of MIS implemented in client-server architecture using open source software and the design and development of dynamic, database-driven websites and web applications
- Demonstrated experience in producing user training manuals and conducting training.

Key Expert 4: Systems Integration Specialist

Experience in the implementation of services and interoperability of interconnection and exchange information between public sector agencies.

- Bachelor's Degree or its equivalent in IT System Engineering or a Computer Science, or other related discipline
- 5 + years' experience with SQL complex queries, data collection and verification, and data collection techniques

- Demonstrates proficiency in ensuring seamless integration process on client side Computer proficiency and technical aptitude with the ability to utilize SQL DBMS, various connectivity solutions (FTP/Secure FTP, Web folders (WebDAV), VPN), CMS, EDI plus use of MS Office applications.
- Knowledge of information integration collection tools to ensure smooth interoperability of data. processes and technical requirements.

Non-Key Experts

Consultants can add additional non-Key experts to the Team. The positions listed below are recommended to be included in the consultant's Team.

Non-Key Expert 1: Database administration expert

Strong technical experience in implementing, configuring and managing tools for configuration control and management of databases.

- Bachelor's Degree in Information Systems, Business Administration, Computer Science. Preferred certifications include ICCP, CDMP, MCSE or MCSA.
- Minimum of 3 years in database administration for on premise and cloud environments using relational database management systems (RDBMS).
- Knowledge of Database Performance Tuning, Database Security, Promoting Process Improvement, Problem Solving, Presenting Technical Information, Quality Focus, Database Management, Data Maintenance, Operating Systems, Attention to Detail, Information Security Policies

Non-Key Expert 2: Capacity Building and Training Expert

Design, develop training solutions that include supporting documentation by working collaboratively with team

- Bachelor's Degree in Education, Technology in Education, Technical Writing, or Journalism.
- Minimum of 3 years in taking complex technical material and transforming it into easy to understand and engaging online courses, documentation, and instructor-led course materials.
- Supporting software projects/initiatives/processes and ensuring accuracy of documentation including document creation, including technical diagrams, manuals and/or guides, and procedural materials for proprietary software with researching, writing, editing, proofreading, and maintaining documentation.

5.0 REPORTING REQUIREMENTS AND TIME SCHEDULE FOR DELIVERABLES

The Consultant is required to execute the tasks necessary to complete the services highlighted above in the Specific Objectives section. The tasks related to this Consultancy shall be executed during nine (9) months period for the implementation and the roll out of the NBP and additional twelve (12) months period for warranty and maintenance support.

The Planning Institute of Jamaica is the Contracting Authority and will be responsible for final approval of any contractual amendments and payments.

The Consultant will report to JAMPRO, as the Supervising Entity. The Supervising Entity shall be responsible for general oversight of the project, the approval of contractual reports and payment requests. The designated representative of the Supervising Entity is the Vice President with responsibility for Research, Advocacy and Project Implementation.

The Project Steering Committee[5] will review and recommend approval of project deliverables to the Supervising Entity. Final approval of the deliverables resides with the President or her designate.

The intended start date is July 2021 and the period of implementation of the contract from this date.

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[5] The Project Steering Committee is expected to include the following entities: JAMPRO, eGov Jamaica Limited, Cabinet Office, Cannabis Licensing Authority, Ministry and Industry Commerce Agriculture and Fisheries, Jamaica Customs Agency, Public Sector Transformation Project.

The Consultant will be required to provide the following reports:

	Name of Report	Content	Timeline for Submission	Review Period	Payment Percentage
1.	**Component A Deliverable:** Inception Report	Confirming understanding of the project scope as well as providing an overview of project roles & responsibilities, operational details of the project and key issues affecting the project. Present the findings from the inception mission including the findings of the review and validation of the NBP functional and non-functional requirements.	Within two (2) weeks of contract signing	1 week	10%
2.	Monthly Progress Reports	Progress Report should provide the following: - Accomplishments from the prior period - Planned actions for the next period - Updates on the status of any issues affecting assignments - Issues requiring action or escalation - Risks to project and actions taken/proposed to manage those risks	Within five (5) days after month end	1 week	n/a
3.	**Component B Deliverable:** Systems Requirement Document	Confirming the functional and technical requirements of the NBP as well as user roles and responsibilities.	End 1st Month	2 weeks	10%
4.	**Component C Deliverable:** Physical System Infrastructure Set Up	- SLA in place with hosting provider - NBP system infrastructure installed and configured	End 2nd Month	2 weeks	n/a
5.	**Component D Deliverable 1:** System Design Document	Documentation of the Software Design and User Interface in keeping with Requirements. Includes IT infrastructure roadmap.	End 3rd Month	2 weeks	10%
6.	**Component D Deliverable 2:** Completed NBP software application, software configured,	This includes: - Completed NBP software application, software configured, and sample data loaded to enable testing	End 6th Month	1 month (during which 1st UAT	15%

	Name of Report	Content	Timeline for Submission	Review Period	Payment Percentage
	and sample data loaded to enable testing	- Finalised User Acceptance Test (UAT) Plans		will be done)	
7.	**Component D Deliverables 3-6:** - **Component D Deliverable 3:** Updated NBP with changes arising from UAT - **Component D Deliverable 4:** System Implementation Plan - **Component D Deliverable 5:** System Implementation Guide - **Component D Deliverable 6:** Deployment of NBP to production environment	This includes: - Updated NBP with changes arising from UAT - System Implementation Plan - System Implementation Guide - Software configured, and sample data loaded to enable testing - Deployment of NBP to production environment - Implementation and acceptance of changes arising from UAT - Uploading of final databases - Successful deployment of solution / platform to the production environment.	End of 8th month	2 weeks	40%
8.	**Component E Deliverables:** - Hard and Soft Copies of Technical and User Manuals - Training Reports and Training Videos	Documentation to include user and training manuals (in hard and soft versions). Training videos and reports including register of participants, issues raised and recommendations	End 8th month	2 weeks	n/a
9.	**Component F Deliverable:** Final Report	Final report which includes, but not limited to, an overview of the project stating technical achievements, lessons learned, post go-live support analysis and good practices.	Nine months after contract signing	2 weeks	15%
10.	**Component G Deliverable:** Warranty and Maintenance	Application warranty and maintenance support service for a 12 months period	For 12 months period after the NBP	n/a	n/a

Name of Report	Content	Timeline for Submission	Review Period	Payment Percentage
Support Service for a 12 Months Period	following the NBP implementation and roll out	implementation and roll out		

Reports may be submitted in soft/electronic copy using Microsoft Word and/or Adobe PDF. The Final Project Report shall be delivered by electronic copy as above, via email.

Characteristics of Consultancy

The characteristics of this Consultancy are outlined as follows:
  i)   Type of Consultant: Firm
  ii)   Start Date and Duration: Anticipated over a period of nine (9) months for project implementation and twelve (12) calendar months for warranty and maintenance support period.

The assignment will require a high level of technical competence in application development and workflow management.

6.0 CLIENT'S INPUT AND COUNTERPART PERSONNEL

All day to day operations and communication regarding the implementation of activities under the contract will be handled by the Supervising Entity – JAMPRO. However, in executing the deliverables under the contract, the consultant will be required to work closely with the individual entities whose processes are being placed online.

The Consultant Team will be home based and will only be accommodated at JAMPRO as needed.

a) Services, facilities, reports, and property to be made available to the Consultant team by JAMPRO as appropriate: office space, internet, telephone, fax.

b) Hardware and software required will be procured and provided by JAMPRO

c) Professional and support counterpart liaison personnel to be assigned by JAMPRO to the Consultant's team: local administrative support to assist with scheduling meetings and other logistics locally.