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Terms of Reference

Strategy and Technical Assessment of NEA for Integrated Digital Government

(Contract Package # AF-S2)

1. Background

ICT is a high priority sector for the Government of Bangladesh (GOB). It has a comprehensive and popular "Digital Bangladesh" agenda, and has identified ICT's important role for its Seventh Five Year Plan for improving governance and empowering citizens. Amongst numerous initiatives and projects to support their ambitious ICT targets, the Government of Bangladesh (GOB) has already implemented a significant e-government component under the Bank-financed Leveraging ICT for Growth, Employment and Governance ("LICT"; P122201) Project, which started in 2013. The project is implemented by the Bangladesh Computer Council (BCC), and its component has successfully built the basic integrated foundations for e-government; including the country's first national-level datacenter, national enterprise architecture (NEA), interoperability framework, and a computer incident response team.

GOB also recognizes the need to be strategic in its approach to leveraging ICT in the country's next phase of development. There is a distinct need for GOB to think strategically and plan the use of ICT across its agencies given the rapid developments in this sector. There is also a need for more collaborative, secure, and efficient use of ICT resources within GOB, as most of the information systems across government agencies are running on disparate data centers, component-run architectures, and software development platforms. The absence of a more integrated approach towards IT adoption across GOB has resulted in limited coordination and avoidable duplication across ministries in the public sector, and between the government and the private sector. Such fragmentation impedes effective collaboration and decision making at the political and operational levels in GOB and ultimately increases costs and creates inconvenience to citizens and businesses. It also undermines the delivery of economic and social services, physical security, economic management, and inclusive political processes.

A more integrated approach could also help to address key ICT capacity and resource issues that are common in line agencies. These issues include: poor management and utilization of multiple data centers and systems; challenges in integration, interoperability, data, and information exchange between internal and external systems; high risk critical systems and infrastructure from a cyber security perspective; and insufficient technical and strategic ICT management capacity.

Given these issues, and based on GOB's highly positive results from the LICT project's e-government component, the government is keen to take a more strategic, holistic, and integrated whole-of-government (WOG) approach to improving governance, and increasing and improving e-services to citizens and businesses as well as within government. The WOG approach for e-government has been a long-term strategy of many governments around the world over the past 10 years. This "one-stop government" approach moves isolated silos in public administration to formal and informal integrated networks. It is a global trend driven by societal forces and the opportunities presented by the internet, to transform the way that governments work for citizens. The WOG approach for ICT has been proven to achieve higher government efficiencies, enable cross-agency coordination of resources and services, and foster one-stop governance transformation and e-service delivery. Numerous countries have already implemented this WOG approach, such as Australia, the Republic of Korea, Singapore, and the United Kingdom.

Bangladesh could also benefit from the WOG approach to support the country's ambitious development goals, by establishing shared ICT infrastructure, service delivery platform, common infrastructure, development platforms, mobile service delivery platform, enterprise service bus and services for common use by GOB agencies. The country can also leverage the WOG approach to develop more e-services in a faster manner and provide high-value, integrated e-services to its citizens and businesses. These activities will alleviate or eradicate the need for GOB agencies to invest in their own ICT resources, significantly reduce ICT operational and overhead costs, reduce cyber vulnerability, improve interoperability and coordination between systems and agencies, and enable the agencies to focus on core e-services delivery instead of technologies. Having recently experienced cyber security challenges at Bangladesh Bank, GOB appreciates the important need to improve the security of their e-government systems to protect the public administration from continual and evolving cyber threats.

GOB is taking concrete steps for an integrated, WOG approach on ICT. The next intended step is to develop the necessary strategic approach; and governance framework needed for successful WOG implementation in Bangladesh.

GOB is also currently preparing a proposed Integrated Digital Government (IDG) Project for actual implementation of the WOG approach. The new project will also be implemented by BCC, and financed by the World Bank. For this purpose GOB will also like to begin development of the functional and technical specifications and change management program for the proposed Integrated Digital Government (IDG) Project.

1.1. What is a 'whole of government' approach?

'Whole of government' is an overarching term for a group of responses to the problem of increased fragmentation of the public sector and public services and a wish to increase integration, coordination and capacity. A desire for increased effectiveness and increased efficiency generally drives the adoption of whole of government approaches.

1.2. Challenges in whole of government approach

A significant body of international experience, learning and initiatives about implementing whole of government policy has emerged over recent decades. This has resulted in a massive repository of 'how to' material, but a dearth of reflective, 'how we actually did' material. The reasons to adopt a whole of government approach remain strong and sound. However, implementing such approaches requires due care and attention from an early stage. The growing number of challenges to governments today that require joined-up thinking and joined-up working, along with the increasing complexity of government itself, new technological opportunities and the challenges of economic constraints — all point to the need for and value of whole of government approaches.

Whole of government working is likely to be a feature of the policy implementation landscape in some form for the future given the increasing complexities of the social and economic landscape, both nationally and internationally. The challenge is to find ways of making it work to best effect. Implementation Science offers scope to link the theory and research on whole of government approaches with emerging work on evidence-informed policy implementation to inform and guide future development.

2. Objectives of the Assignment

The goal of this assignment is to implement WOG in Bangladesh through IDG. The specific objectives of this strategic consulting assignment are to prepare:

i. Strategy, framework, and governance structure for Whole of Government (WOG) approach for Government of Bangladesh (GOB) for Integrated Digital Government.

ii. Functional and technical specification for the components and subcomponents identified in the initial design of the proposed Integrated Digital Government (IDG) project.

3. Scope of Services

Subject to the assignment's needs, the Firm's responsibilities will include but not limited to the following:

a. Strategic

Assist and Facilitate BCC to establish the following:

- **WOG Strategy and Framework.** The Firm shall develop a WOG strategy and framework for digital infrastructure, platforms and e-services implementation and adoption, recommend legislative, policy and standard inclusions, map WOG initiatives to existing e-government challenges, anticipate the variety of disruptions that may occur, reduce risk of vendor lock-in by considering interoperability, portability and ease of integration up front, and determine business model for cost recovery.

- **WOG Guidelines.** The Firm shall work closely with BCC to provide broad guidelines for WOG adoption, regulatory compliance, security and privacy posture, and data maintenance policies.

- **WOG Governance.** The Firm shall propose governance structure, mechanism and guidelines for implementation of the proposed IDG project. The Firm shall propose a suitable governance structure to facilitate government-wide decision making and mainstreaming of the digital infrastructure, platforms and e-services.

b. Tactical and Operational

Under the tactical deliverables, the Firm shall conduct a government-wide needs assessment and perform a business analysis and a technical analysis and develop functional and technical specifications for the proposed IDG Project.

- **Government-wide 10-year needs assessment**. The Firm shall develop a needs assessment questionnaire to solicit ministries' requirement for digital infrastructure, platforms and e-services; conduct the assessment; and tabulate the results.

- **Business planning**. The Firm shall build a detailed business plan for IDG Project based on the available needs assessment reports so as to support the long-term strategy for the government of Bangladesh to make the transition to IDG Project that is built on a cost recovery model; and ensure its technical, operational, and financial sustainability. The business plan will take into account the cost of operating the platform, including the upgrades needed subsequently to address obsolescence of the IT assets, and propose possible chargeback mechanisms for their use by the other

agencies. It will also leverage innovative public-private partnerships (PPPs) to the extent possible, by using external donor funding to study the feasibility of using PPPs for the Project's integrated e-services, cybersecurity, and data analytics. The operations of BCC should also be considered, including the sustainability of hiring staff at market rates. It will also train government employees in conceptualizing, planning, managing, and monitoring e-government services to help build technical sustainability.

- **Change management plan**: The firm shall develop a holistic change management program, based on political economy analysis that had been conducted for the IDGP. The change management activity will have holistic actions needed to facilitate institutional coordination, ownership, and processes, to help the other agencies move towards the use of the common WOG platform. This change management activity will also assess stakeholder readiness, determine the needed change management interventions (including communications and training), create an execution plan, and ensure adoption. It will also recommend changes to organizational structures, roles, and responsibilities, design the required helpdesk and implementation assistance required to minimize resistance to change, and ease adoption. The change management process will also assess the impact of e-government on jobs, and provide a mitigation plan and measures (including training and redeployment) to minimize such impacts.

- **Functional analysis and specifications:** The overall objective of this work is to carry out the tasks related to analysis of functions of government in various sectors across different levels in the context of whole of government approach. The Firm shall draft the functional and technical specifications for thirty (30) integrated digital services. An example of an integrated digital service includes an integrated business registration and licensing service where applicants are able to easily identify the needed applications through search and navigation, and perform an integrated application for the required registrations and licenses. Another example is an integrated social assistance service where citizens in need of social assistance could identify the right sets of assistance through search or via a step-by-step digital advisor service. The Firm shall discuss with the Client on the list of the thirty (30) integrated digital services upon contract award.

- **Cross Cutting Issues.** In the context of Bangladesh and through consultations with major stake holders the Firm will identify and recommend solution to address the cross cutting issues, which could be transformed through the use of information and communication technologies.

- **Technical analysis and specifications**. The Firm shall develop a technical strategy for IDGP taking into consideration the business analysis results and an examination of the various infrastructures, platforms and e-services. The technical analysis and specifications shall comprise of:

    - **Infrastructure as a Service (IaaS)**

      The Firm shall propose IaaS technical architecture design, and draft the functional and technical specifications. The Firm shall take into consideration the existing infrastructure and network; interoperability; total cost of ownership (TCO); and risks such as vendor lock-in.

- **Platform as a Service (PaaS)**

  The Firm shall propose PaaS technical architecture design and draft the functional and technical specifications on digital service enablers e.g. online authentication, e-payments, SMS gateway, Enterprise Service Bus (ESB), digital experience platform, cybersecurity, data analytics and other common digital service enablers. The Firm shall take into consideration existing enablers; a total cost of ownership (TCO) perspective; and to mitigate risks such as vendor lock-in, facilitate interoperability and alignment with the proposed IaaS.

  The Firm shall propose a clear plan for adopting open standards to facilitate interoperability and portability for IDGP and simplify the process of integrating new services, independent of where or how the new service is acquired.

  The Firm shall design proper user identification, strong authentication, and role-based access control to resources, possibly using federated identity management and single sign-on, assign a security classification to all data, articulate the security responsibilities the stakeholders have, and articulate what happens to customer data during and after the termination of the use of an IDGP service.

- **Software as a Service (SaaS)**

  The Firm shall draft the functional and technical specifications for enterprise document management, government resource planning and email as a service. The Firm shall take into consideration the Total Cost of Ownership (TCO); assess the risks such as vendor lock-in; interoperability; and existing IT infrastructure.

- **Procurement:** The Firm shall develop the (i) technical requirement including detailed technical specifications (ii) functional, architectural and performance requirement for procurement of Information Systems including hardware and software (Design, Supply, and Installation), (iii) commercial requirement necessary to undertake a procurement process based on the technical requirement as mentioned above, and (iv) propose evaluation criteria for use in selection of offers from vendors, and (v) provide cost estimates of the hardware and software.

- **Transition:** The firm shall develop a transition plan to identify the steps required to transit from an asset management to a service oriented paradigm.

- **Operations:** The Firm shall develop the standard operation procedures and management of IaaS, PaaS and SaaS.

- **Risk Assessment:** The firm shall develop a comprehensive risk matrix for all project risks and document proposed mitigation measuresIdentify clear success goals and metrics to measure progress. The Firm shall propose performance metrics to measure the project's progress and define benchmarks for the existing service before launching the new service in order to determine its impact.

- **Identify required skills:** The Firm shall map required skills against available skills, develop a plan to enhance internal skills to address potential gaps and consider external skills as an option for addressing gaps.

- **Develop Service Agreements;** IDGP service agreements should be evaluated in conjunction with specific needs, expectations, and governance processes. The Firm shall draft cloud service agreements including the following:
    - **Terms and Conditions;** IDGP service agreements may have specific terms, conditions and use policies that need to be considered. This includes, but is not limited to: exclusions, limitations, usage and disclaimers.
    - **Service Level Agreements;** A document stating the technical performance promises made by the IDGP service provider, remedies for performance failures, and how disputes are to be discovered and handled.
- **Remediation and Compensation;** When fault and failures occur, what compensation is offered and what are the responsibilities of the parties involved.
- **Commercial and procurement plan:** The Firm shall develop a commercial strategy for IDGP taking into consideration the business analysis results and an examination of the various infrastructures, platforms and digital services. This should include:
    - Market engagement with Bangladeshi and international suppliers of ICT infrastructure and services aimed at exploring market interest in the IDGP opportunity, and at simulating innovative thinking about different business models that can deliver it.
    - Review of the different models for engaging the private sector (from traditional procurements, through different models of Joint Venture / PPP, to competitions and other market-based mechanisms), and recommendations about the optimum approach at each layer of the IDGP stack.
    - Recommendations on how to future-proof any procurements, through development of outcomes-based contracts that build in incentives to innovate and interoperate.
    - A commercial and contracting implementation plan as part of the broader IDG roadmap

4. Deliverables

The following table describes the deliverables of this assignment, which are the outputs of the activities specified under **Scope of Services.**

Note: T0 = Date of commence of the Contract.

SL. #	Deliverables	Submission Deadline (T1, T2, ..., TN)
4.1.	**Inception Report, which could be developed along the following format, or contain the core information covered below:** 1. Table of contents 2. List of abbreviations 3. Executive summary o General progress. o Work Plan o Assessment of the project objectives. o Problems encountered. - Problems or difficulties foreseen and their implications for future actions. The beneficiary should also provide an assessment to what extent these problems will affect the timely completion of the project, and describe the measures taken to overcome the problems in question. - If the project seems likely to become/stay behind schedule, please indicate this clearly. The beneficiary must signal changes to the baseline implementation programme. 4. Administrative 4.1 Description of the Project Management 4.2.Organogram of the project team and the project management structure 5. Technical Please start with a few lines of your understanding about the project background and project adjectives 5.1. Actions 5.1.1. Action 1 5.1.2. Action 2 : 5.1.N. Action N - Describe what will be done regarding each action (and sub-action if applicable). For each of the objectives of the action, indicate whether you estimate you will achieve them. Where these objectives are quantitative, indicate the target, what you think you will achieve by the end of the project. Please present the plan of the project using a Gantt-chart or similar. 6. Envisaged progress until next report 7. Deliverables with indicators of final outputs. 8. Availability of appropriate human resources and their work schedule 9. Financial Part 9.1 Costs Elements (Incurred and estimated cost summary by cost category and relevant comments). 10. Conclusion	T1 = T0 + 1 Month

4.2.	**Main Report on Strategy section of scope of services, could be developed along the following format, or contain the core information covered below:** 1. Table of contents 2. List of abbreviations 3. Executive summary o Progress of the project o Problems encountered - Problems or difficulties encountered and foreseen and their implications for future actions. The beneficiary should also provide an assessment to what extent these problems will affect the timely completion of the project, and describe the measures taken to overcome the problems in question. - If the project seems likely to become/stay behind schedule, please indicate this clearly. The beneficiary must signal changes to the baseline implementation programme. 4. Technical Please start with a few lines of your accomplishments regarding project milestones. 4.1. Actions 4.1.1. Action 1 4.1.2. Action 2 : 4.1.N. Action N • Describe what has been done regarding each action (and sub-action if applicable). • Indicate what problems you have had, how you have solved them or plan to solve them, what delays (if any) you have and how this will (or will not) impact on the other actions of the project whose implementation depend on this action, and how you plan to catch up. • Compare the progress made with the established time schedule. Indicate a timetable showing how you plan to continue this action during the next reporting period. • Attach completed deliverables as annexes (with a clear reference in the text of the report). 5. Outputs 5.1. WOG Strategy and Framework (details are provided in scope of services) 5.2. WOG Guidelines (details are provided in scope of services) 5.3. WOG Governance (details are provided in scope of services) 5.4. SWOT or similar strategic Analysis 5.5. Implementation Roadmap 5.6. Prioritization 5.7. Risk Analysis 6. Envisaged progress until next report 7. Availability of appropriate human resources and their work schedule 8. Financial Part 8.1 Costs Elements (Incurred and estimated cost summary by cost category and relevant comments). 9. Conclusion	**T2 = T1 + 2 months**

	10.. Annexure	
4.3	**Main Report on Tactical and Operational section of scope of services, could be developed along the following format, or contain the core information covered below:** 4. Table of contents 5. List of abbreviations 6. Executive summary o Progress of the project o Problems encountered. - Problems or difficulties encountered and foreseen and their implications for future actions. The beneficiary should also provide an assessment to what extent these problems will affect the timely completion of the project, and describe the measures taken to overcome the problems in question. - If the project seems likely to become/stay behind schedule, please indicate this clearly. The beneficiary must signal changes to the baseline implementation programme. 4. Technical Please start with a few lines of your accomplishments regarding project milestones. 4.1. Actions 4.1.1. Action 1 4.1.2. Action 2 : 4.1.N. Action N • Describe what has been done regarding each action (and sub-action if applicable). • Indicate what problems you have had, how you have solved them or plan to solve them, what delays (if any) you have and how this will (or will not) impact on the other actions of the project whose implementation depend on this action, and how you plan to catch up. • Compare the progress made with the established time schedule. Indicate a timetable showing how you plan to continue this action during the next reporting period. • Attach completed deliverables as annexes (with a clear reference in the text of the report). 5. Outputs 5.1. Government-wide 10-year needs assessment. (details are provided in scope of services) 5.2. Business plan (details are provided in scope of services) 5.3. Change management plan (details are provided in scope of services) 5.4. Functional analysis and specifications (details are provided in scope of services) 5.5. Cross Cutting Issues (details are provided in scope of services) 5.6. Technical analysis and specifications (details are provided in scope of services) 5.6.1.Infrastructure as a Service (IaaS) 5.6.2. Platform as a Service (PaaS)	T3 = T2 + 2 Months

	5.6.3. Software as a Service (SaaS) 5.7. Procurement (details are provided in scope of services) 5.8. Transition (details are provided in scope of services) 5.9. Operations (details are provided in scope of services) 5.10. Risk Assessment (details are provided in scope of services) 5.11. Identification of required skills (details are provided in scope of services) 5.12. Service Agreements (details are provided in scope of services) 5.12.1. Terms and Conditions 5.12.2. Service Level Agreements 5.13. Remediation and Compensation(details are provided in scope of services) 5.14. Commercial and Procurement Plan(details are provided in scope of services) 6. Envisaged progress until next report 7. Availability of appropriate human resources and their work schedule 8. Financial Part 8.1 Costs Elements (Incurred and estimated cost summary by cost category and relevant comments). 9. Conclusion 10. Annexure	
4.4.	Main Report on Strategy section of scope of services will include all outputs listed in the first interim report including responses against the reviewers' suggestions/comments/remarks/queries on the first interim report.	**T4 = T3 + 1 month**
4.5.	Main Report on Tactical and Operational Section of Scope of Services will include all outputs listed in the second interim reports including responses against the reviewers' suggestions/comments/remarks/queries on the second interim report. Along with this report a summary of the main reports on strategy and tactical and operational in Microsoft Power Point format must be submitted.	**T5 = T4 + 1 month**

5. Reporting Arrangement

SL. #	Report Name	Report Format and Quantity	Submit To	To be reviewed by	Review and Response Time
1	Inception Report	Softcopy(PDF) – 1 Hardcopy – 3 (Presentable with excellent feel and look)	Project Director, Leveraging ICT for Growth, Employment and Governance Project	Leveraging ICT for Growth, Employment and Governance Project	Two (2) weeks from the date of receiving the report
2	First Interim Report				
3	Second Interim Report				
4	Main Report on Strategy				
5	Main Report on Tactical and Operational				
6	Summary of the Final Report				

6. Qualification Requirements for the Firm

- The firm should have been in active business for a minimum of five (7) years in areas of integrated e-government or whole-of-government strategy, Government Cloud environment implementation, and ICT master planning for country wide implementation, Enterprise Architecture design/implementation using popular frameworks (TOGAF/FEA/Gartner or equivalent) and ICT policy in developing country setting. The firm must provide documentary evidence of such experience gained in the last 5 years.
- The firm should have undertaken technical assessment and feasibility study of at least 2 (two) similar projects/assignments in developing countries in the last 5 years.
- The firm should have worked on e-Government and Cloud Computing project management, particularly in developing countries, will be very important.
- The firm should demonstrate that it has prepared technical specification and functional requirement for at least 1 (one) procurement contract for Information Systems under World Bank procurement guidelines.

7. Consultant Team

7.1. Qualification and Experience of the Key Professional Staff:

We envisage the consultant team being made up of 3-4 Full Time Experts (FTEs). The firm needs to demonstrate that the team has the suitable mix of skills and experience to be successful in delivering this assignment, including continuity of project leadership and management, coupled with extremely effective on-the-ground stakeholder engagement and client responsiveness.

The consultant team needs to demonstrate experience in the following areas:

- Significant and recent experience in developing country level e-government strategy and ICT policy.
- Significant and recent experience in conducting similar studies and in providing e-governance related consulting and/or advisory services.
- Recent experience in engaging with international thought leaders on cutting edge technology and transformation issues related to ICT and e-Government.
- Technical expertise in a variety of ICT subject matters, including but not limited to cloud computing, service oriented architecture, disaster management and business continuity of government, cyber-security, enterprise architecture (EA), interoperability, data sharing, applications and data standards.
- Knowledge and experience in e-Government with practical experience of advising governments on designing and implementing large scale e-Government initiatives.
- Knowledge and expertise regarding use of ICT in public sector and experience in development, planning and execution of e-government projects in more than one country.
- Ability to engage with senior political, government and business figures and ability to communicate complex technical matters to non-technical decision makers.
- Relevant experience in development of commercial models and contracts, including PPP contracts, for the supply of Information Systems.
- Prior experience in a public sector environment in a South Asian country.
- Certification on any popular EA framework, IT Governance framework and on Advanced Cloud Computing from recognized organization is preferred but not essential.

The above skills and experience need to be demonstrated by the core members of the consulting team assigned to this project, not simply by the broader experience of the consulting firm as a whole.

(i) Team leader:

a) Academic Qualification

The incumbent must have at least Bachelor's degree in computer science, information technology or related field.

b) Work Experience:

- S/he must have at least 10 years' experience in conducting similar studies and in providing e-governance related consulting and/or advisory services.
- S/he must have at least 7 years of demonstrated experience in engaging with international thought leaders on cutting edge technology and transformation issues related to ICT and e-Government
- Certification on any popular EA framework is preferred
- S/he must have technical expertise in a variety of ICT subject matters, including but not limited to cloud computing, service oriented architecture, disaster management and business continuity of government, cyber-security, enterprise architecture (EA), interoperability, data sharing, applications and data standards.
- S/he must has prior experience in a public sector environment in a South Asian country
- S/he must have ability to engage with senior political, government and business figures and ability to communicate complex technical matters to non-technical decision makers

(ii) E-Government Specialist:

a) Academic Qualification

The incumbent must have at least Bachelor's degree in areas such as economics, business, public administration, finance, law, or other related fields.

b) Work Experience

- S/he must at least 5 years' experience in conducting similar studies and in providing e-governance related consulting and/or advisory services.
- S/he must have knowledge and experience in e-Government with practical experience of advising governments on designing and implementing large scale e-Government initiatives
- S/he must have knowledge and expertise regarding use of ICT in public sector and experience in development, planning and execution of e-government projects in more than one country.

(iii) IT Expert:

a) Academic Qualification

The incumbent must have at least Bachelor's degree in computer science, information technology or related field.

b) Work Experience:

- S/he must at least 5 years' experience in conducting similar studies and in providing e-governance related consulting and/or advisory services.
- Certification on Advanced Cloud Computing from recognized organization is required
- Certification on any popular IT Governance framework is required
- S/he must have relevant experience in preparation of (i) technical requirement and (ii) functional, architectural and performance requirement for procurement of Information Systems (Design, Supply, and Installation).
- S/he must has prior experience in a public sector environment in a South Asian country

(iv) ICT Policy Expert:

(a) Academic Qualification:

- Bachelor's degree required in computer science, information technology or related field; Master's or Graduate degree preferred.

(b) Work Experience

- S/he must at least 5 years' experience in conducting similar studies and in developing country level e-government strategy and ICT policy.
- The person should have prior experience in government strategy/policy role and must possess extensive understanding of e-government strategy and ICT policy.
- Strong oral and written skills and ability to work in a fast-paced, team setting are necessary.

8. Counterpart facilities

The project will provide institutional support and all available documents, data and information to the Consultant. The Consultant should include all eligible expenditure in the

financial proposal for accommodation, logistics and required manpower for successful implementation of the assignment.

9. Duration

The entire consultancy work including submission of reports, documents etc. shall be completed within 07 (seven) months from the commencement date.