COUNTRY: KENYA

PROJECT: KENYA DIGITAL ECONOMY ACCELERATION PROJECT (KDEAP)

IMPLEMENTING AGENCY: INFORMATION AND COMMUNICATIONS TECHNOLOGY AUTHORITY (ICTA)

PROJECT ID: P170941; Credit Numbers 7289-KE and 7290-KE

TERMS OF REFERENCE FOR:

REQUEST FOR EXPRESSION OF INTEREST

for

Design of the Next Generation Government Digital Payments Architecture (Consulting Firm)

Contract No: KE-ICTA-401462-CS-QCBS

Issue Date: 23rd April 2024

Closing Date: 10th May 2024

Client:
The Chief Executive Officer,
ICT Authority
Telposta Towers 12th Floor, Kenyatta Ave
PO Box 27150 – 00100, Nairobi Kenya
Tel: +254 20 2089061/ 2211960 Fax: +254 20 2211960
Email: procurement@ict.go.ke , info@icta.go.ke
Website: www.icta.go.ke

Design of the Next Generation Government Digital Payments Architecture (Consultancy Firm)

1. Background

The Government of the Republic of Kenya (GoK) has received financing in the amount equivalent to US$390 Million equivalent from the World Bank towards the cost of the first phase of the Kenya Digital Economy Acceleration Project and it intends to apply part of the proceeds to payments for goods, works, non-consulting services and consulting services to be procured under this project.

The project will include the following components.

1.1 Component 1: Digital Infrastructure and Services-The aim of this component is to increase access to high-speed internet for individuals, industry, and government—the 'foundation of the foundations' of a digital economy and strengthen Kenya's role as regional digital leader—while leveraging investments from the private sector

1.2 Component 2. Digital Government and Services- This component will invest in the foundational digital services, platforms, architectures, and policies needed to transform the way the Government communicates and conducts its internal operations.

1.3 Component 3. Digital Skills and Markets- This component aims to equip young Kenyans with digital skills and strengthen their abilities to access and compete in domestic and regional markets through supporting skills development, to study mechanisms to improve access to affordable devices and through enhancing the enabling environment for e-commerce to support Kenya's role as a regional digital hub.

1.4 Component 4. Project Management- This component will support project implementation, coordination, for the Project Implementation Unit (PIU) within ICTA and capacity building.

1.5 Component 5: Contingent Emergency Response Components-This component will be activated in the event of an emergency.

The Gok intends to apply a portion of the proceeds of the Credit to cover activities under components 1.2 (Digital Government and Services) to design a next generation electronic payment architecture that allows the government, citizens, and businesses to transact an increased volume of payments in a seamless, secure, and accountable way. This contributes to the government's vision to move towards a "cashless" payment ecosystem.

2. Objectives of the Assignment

Procure the services of a consulting firm that will:

1) Examine the existing payments architecture and identify its strengths and weaknesses and present rationale for a next generation payment architecture.
2) Clearly define the next generation payment architecture, elucidating its scope, purpose, objectives and guidelines.

3) Align the next generation payment architecture with the overall project goals, notably the Government Vision 2030, policy and Digital Master Plan 2022 – 2033.

3. Scope of the consulting services

3.1 Scope

The Consultant will work on the development of the next generation digital payment architecture as per the GoK Enterprise Architecture, the Kenya National Digital Master Plan 2022-2032, the Kenya Bankers Association regulatory framework for digital financial services 2023, the Kenya Government Digital Architecture Strategy 2023, Central Bank of Kenya E-Money regulation of 2013, National Treasury Kenya gazette notice 2023 on centralized M-Pesa payment and the KDEAP Project implementation components. Specifically, the Consultant will:

1) Through stakeholders' participation, assess and describe the current state of digital payments, including existing systems (E-Citizen) and infrastructure.
2) Review policy, legal and regulatory frameworks.
3) Propose a next generation payments architecture and system requirements
4) Propose infrastructure requirement for the new system.
5) Propose a monitoring and evaluation strategy.
6) Propose a governance strategy.
7) Propose an information security and data protection strategy for the new system
8) Propose an implementation plan
9) Support ICT Authority team in development of the RFP for the for the new system

3.2 Specific tasks

The Consultant will perform the following tasks:

3.2.1 Current State of Government Payment Systems

The consultant will perform the following:

Perform an extensive review of existing government digital payment systems looking at the scope and types of payments it can accept, its legal and regulatory basis, infrastructure, performance and reliability, integrations with other systems, challenges faced, and any plans for future evolution of the current system. In addition, the following items below will be extensively and specifically examined.

Survey the payments landscape and identify all relevant payment types (in coordination with the GoK as identified by the GoK) for the following categories that may be applicable to the next generation payment architecture:

i. Citizen to Citizen
ii. Citizen to Business
iii. Citizen to Government
iv. Business to Citizen
v. Business to Business

vi. Business to Government
vii. Government to Citizen
viii. Government to Business
ix. Government to Government

Survey and document the processing of government payments to understand the way government payments are organized and executed as per the categories noted above. This should include:

x. Collection of revenues by the government and the mechanisms in place for this process, e.g. online systems, commercial bank networks, etc.
xi. Disbursement of monies to citizens, business and other government entities
xii. Documentation of the role of the Central Bank and the Treasury Single Account (TSA) in the process
xiii. Make recommendations on the streamlining of treasury processes where and if applicable
xiv. Documentation of key ICT systems in place for this process.

b) Examine safety, transparency and efficiency of processing systems, i.e. that the right individual/firm is being paid, that the individual/firm making a payment to the government is properly recognized and the credit of the payment is noted correctly, that the corresponding funds are received and properly recorded on a timely basis, that payments are being processed with lowest cost in order to maximize the net impact of government spending, etc. Specifically, this should include an examination of the payment infrastructure that, at minimum covers:

i. Transaction Infrastructure
- Authentication of parties involved
- Validation of payment instruments vs standards
- Verifying payer's ability to pay
- Authorization of transfer of funds between payer and payee institutions
- Recording and processing information
- Communication information between institutions

ii. Clearing Infrastructure
- Sorting and matching of payment instructions between institutions
- Collection, processing and aggregation of payment data for each institution
- Storage of payment reports and sharing of data
- Ability to calculate gross or net settlement positions

iii. Settlements Infrastructure
- Collection and checking of integrity of settlement claims
- Verification of the availability of funds for settlement
- Settlement of claims via funds transfer
- Recording and communicating settlement to participating institutions

3.2.2 Develop next generation payment architecture and system requirements

The vendor is to assist the Government of Kenya to develop a next generation payments architecture that will guide the paradigm beyond program-specific efficiency gains to one that

simultaneously accelerates critical development outcomes including broader financial inclusion, economic empowerment, and government fiscal savings. Kenya would like to establish a framework, develop good practices, and provide technical ecosystem that radically improve payments. The Architecture must address the issue of integration of various systems in the financial sector to eliminate data quality inefficiencies, duplications, data silos, and increase work satisfaction for the end-user.

The key considerations when developing next-generation payments architecture are:

1. Leverage a modular and flexible architecture to support a roadmap for growth
2. Standardize connectivity to drive innovation and promote openness
3. Embrace Open architecture and relevant standards
4. Adopt fraud prevention methodologies
5. A robust and fit-for-purpose regulatory framework to support the adoption of standards and processes that deliver real-time capabilities and the transformative use cases they enable.
6. Governance Structures that are strong is essential as we move to the next generation of real-time payments - the third generation.
7. leverage on real-time functionality to serve both individuals and business customers in a wider financial services ecosystem.
8. Ensure safety, transparency and efficiency

3.2.3 Policy, Legal & Regulatory Tasks

a) Review the current GoK legal and regulatory environment and identify all relevant requirements that pertain to government digital payment systems. This shall include identifying gaps in the legislation where needed and identifying blocking actions that impinge on accepting digital payments.
b) Summarize the findings above and provide a legal and regulatory roadmap to permit the GoK to institute a sound legal and regulatory basis for the compliance of the next generation digital payment architecture.
c) The above should extensively examine areas of data protection, data privacy and anti-money laundering regulations in addition to any other areas identified by the GoK.

3.2.4 Infrastructure Requirement

a) Providing expert advice on digital infrastructure (hardware, software, network, storage, backup, etc.) for a next generation government payment system that is performant, highly available and secure and meet the following criteria:
    i. Capable of functioning 24/7 x 365.
    ii. Provide redundancy including automatic failover in case of primary failure
    iii. Capable of processing 5 million transactions per hour
    iv. Capable of industry standard scaling techniques that would permit the GoK to onboard more services with payment components in a seamless manner.

v. Will seamlessly integrate into current and planned future interoperability tools and platforms.
vi. Will seamless integrate with any GoK information security requirements such as a national security operations center

b) Develop a detailed infrastructure that the GoK can use as a basis for tendering development and implementation of the architecture
c) Assist the GoK with developing bidding documents for any tendering processes.
d) Assist the GoK with a cost-benefit analysis of various options including assisting with any buy vs. build decisions as needed.
e) Work closely with the networking team to ensure the integrity of high availability network infrastructure to provide maximum performance for all users on the network (i.e. staff and workers across all GoK MDAs, citizens, etc.).
f) Develop a monitoring strategy that will provide systematic oversight and proactive alerting on all digital payment architecture components.
g) Develop a business continuity and disaster recovery strategy.

3.2.5 Monitoring and Evaluation Strategy

a) Define the metrics and key performance indicators (KPIs) to evaluate the effectiveness of the digital payment architecture.
b) Outline the monitoring and reporting mechanisms.
c) Describe how feedback and user experience will be collected and analyzed.

3.2.6 Information Security Strategy

a) Develop an information security architecture and guidelines that will reduce the architecture's attack surface and help make it cyber-resilient.

Develop authentication and authorization mechanisms for the architecture.

b) Define security and encryption protocols.

Ensure that any architecture developed adheres to GoK information security standards and protocols and can integrate with the GoK Security Operations Center.

Ensure that any architecture developed will meet industry standard security requirements, e.g. PCI.

C. Create a comprehensive data protection guideline that is aligned with the General Data Protection Regulation (GDPR) and the data protection act 2019.

3.2.7 Governance Strategy

a) Develop guidelines that ensure proper program governance and risk management: governance arrangements that ensure accountability, transparency, and effectiveness in managing the risks associated with government payment program and the architecture.

Review any current and near-current GoK strategic initiatives, e.g. Treasury Single Account, to ensure the developed architecture is compliant with and can be successfully integrated with these initiatives.

Identify and develop any guidelines needed to help the GoK identify and form necessary institutional arrangements and agreements, e.g. memoranda of understanding for the future payment system.

3.2.8 Implementation plan

a) Provide a high-level roadmap for the implementation of the new digital payment architecture. Identify key milestones, deliverables, and timelines in a project plan.
Specify any resource requirements, including personnel, budget, software and infrastructure for the next generation digital payment architecture.

3.2.9 Develop the RFP for the for the new system

The firm will be required to help the Authority to develop the RFP as a basis for tendering for development and implementation of the next generation payment gateway.

4 Duration and location

The duration of the assignment is **Twelve (12) calendar months from contract commencement date**. The location of the assignment is Telposta Towers at the Information and Communication Technology Authority, Nairobi Kenya.

5 Reporting requirements and timelines for deliverables

The consultant will present the following reports & draft bidding documents:

Report	Details	Timeline for submission of deliverable from date of contract commencement	Number and format of reports presentation
Inception Report	The Consulting firm will share the detailed approach, a work plan, sources of information, staffing and working arrangements necessary to complete the assignment. The work plan should show inter-dependencies across various work streams,	1 Month	3 Hard copies and 1 digital copy

Report	Details	Timeline for submission of deliverable from date of contract commencement	Number and format of reports presentation
	anticipate risks and propose mitigation measures.		
Current State Report	The Consulting firm will present a detailed analysis as per the tasks noted on the current state of digital payment systems in Kenya	3 Months	3 Hard copies and 1 digital copy
Policy, Legal & Regulatory Strategy Report	The Consulting firm will deliver a detailed legal and regulatory report as per the tasks noted above.	5 Months	3 Hard copies and 1 digital copy
Draft Digital Payments Architecture Report	The Consulting firm will deliver a detailed digital architecture that includes: • Infrastructure Architecture • Security Architecture • Business Continuity and Disaster Recovery Strategy • Monitoring and Evaluation Strategy • Governance Strategy	6 Months	3 Hard copies and 1 digital copy
Stakeholders' participation Report	The consulting firm will deliver a detailed report that includes the views of all stakeholders, including but not limited to public participants.	7 Months	3 Hard copies and 1 digital copy

Report	Details	Timeline for submission of deliverable from date of contract commencement	Number and format of reports presentation
Draft Technical requirements document	Development of the technical requirement document that will be used to for sourcing a firm that will implement the next generation Payment system	8 Months	3 Hard copies and 1 digital copy
Final Technical requirements document	Development of the final technical requirement document by incorporating the views from the draft review	9 Months	3 Hard copies and 1 digital copy
Final Digital Payments Architecture Report	Submit final payment architecture with related documents to be discussed and agreed with relevant Government authorities. Prepare Lessons Learnt report. List of anticipated business benefits and recommended actions for realization	12 Months	3 Hard copies and 1 digital copy

All draft and final reports shall be submitted in the prescribed format to:

The Chief Executive Officer,
ICT Authority
Telposta Towers 12th Floor, Kenyatta Ave
PO Box 27150 – 00100
Nairobi Kenya

Tel: +254 20 2089061/ 2211960 Fax: +254 20 2211960
Email: procurement@ict.go.ke , info@icta.go.ke
Website: www.icta.go.ke

Attention:
The Project Coordinator
KDEAP

Upon submission of every report, the consultant is expected to make a presentation of the submitted report to the Client in a scheduled meeting. The acceptance of the report shall be recorded in the minutes of the meeting.

6 Payment schedule

The proposed payment schedules based on satisfactory performance of the contract which will be negotiated with the successful consultant will be as presented in Table 2 below.

Table 2: Proposed payment schedule:

Report	Time from date of commencement of the Assignment	%Payment
Inception Report	1 Month	10%
Current State Report	3 Months	10%
Policy, Legal & Regulatory Strategy	5 Months	10%
Draft Digital Payment Architecture Report and Public Participation report	7 Months	20%
Final Technical requirements document	9 Months	20%
Final Digital Payment Architecture Report	12 Months	30%

This methodical payment structure aims to appropriately recognize and motivate the accomplishment of each milestone, taking into account the complexity and importance of the tasks involved in the consultancy assignment.

7 Minimum requirements for Consultant's qualifications and experience

The shortlisting criteria are:

(i) **Core business and years in business:** The firm shall be registered/incorporated as a consulting firm with core business in the field of telecommunications consultancy or equivalent for a minimum period of (ten) 10 years.

(ii) **Relevant experience:** The firm shall demonstrate as having successfully executed and completed at least three assignments of similar nature, complexity and in a similar operating environment in the last eight years, where each involved development/implementation of financial technology solutions in Mobile Banking, Internet banking, Digital Channels or equivalent. Details of the similar assignments, with name and address of the client, scope, value, and period should be provided and submitted.

(iii) **Technical and managerial capability of the firm:** The firm shall demonstrate as having the requisite technical capacity and managerial capacity to undertake the assignment in the submitted company profile(s).

8 Team composition and qualification and experience requirements for the key experts

The general requirements for Key Experts would be as follows:

Key Expert	Minimum qualification and experience requirements
Project Manager/Team Leader	a) **Academic Qualification:**-(A minimum of Masters in IT/ Computer Science or in relevant field from a university recognized in Kenya. b) **General Experience** A minimum of 8 years' experience in IT with proven experience in complex, multi-tiered IT system applications or integration architecture • **Specific Experience:** - minimum 6 years professional and consultative experience in managing projects related to developing financial Enterprise Architecture, complex/multi-tiered applications or integration architecture of relevant technologies and enterprise architecture layers (data, process, technology, application, security, etc) c) **Registration and/licensing by Professional body:-** • Currently valid registration as a member of a relevant professional body recognized Internationally/Nationally with a valid annual practising license

Enterprise Architects	• **Academic Qualification:**-((S)He should have a masters graduate degree in Information Technology / Computer as specialization /Engineering or equivalent • **General Experience:-** ((S)He should have a minimum of 8 years' experience in IT with proven experience within an Enterprise Architecture Organisation, complex, multi-tiered applications or integration architecture experience in relevant technologies and enterprise architecture layers (data, process, technology, application, security, etc.) • **Specific Experience: -**Minimum two(2) years professional experience in developing financial related framework architectures for financial institutions. and user interface design; Working knowledge of Enterprise Architecture Frameworks (TOGAF or equivalent); • **Registration and/licensing by Professional body :-** TOGAF certification or equivalent,;
Financial Solution Architects	• **Academic Qualification:** University Bachelor degree in Management Information Systems, Telecommunication Engineering, Computer Science or related engineering fields and • **General Experience:-** ((S)He should have a minimum of 8 years' experience in IT with proven experience within an Enterprise Architecture Organisation, complex, multi-tiered applications or integration architecture experience in relevant technologies and enterprise architecture layers (data, process, technology, application, security, etc.) • **Specific Experience:-**Minimum 6 years progressively consultative experience in Enterprise Architecture development, multi-tiered applications or integration architecture in financial field; Has successfully completed 2 previous digital payment architecture projects. o The detailed knowledge of processes and standards of classic payments, card-based payments and current e-commerce payment procedures. multi-tiered applications or integration architecture experience in relevant technologies • **Registration and/licensing by Professional body :-**Relevant certifications
Digital Payments Expert	• **Academic Qualification:**-((S)He should have a minimum of masters degree in Information Technology / Computer as specialization /Engineering or equivalent • **General Experience:-** Minimum 10 years progressively responsible professional and consultative experience in financial based solutions, multi-tiered applications or integration architecture experience in relevant technologies • **Specific Experience:-**Minimum three (3) years professional experience in designing digital payment solutions at medium and large scale organizations, of which 2 years should have been at the international level in the public sector; Experience in modeling digital payment business processes by using various tools and techniques • **Registration and/licensing by Professional body:-** financial certification or equivalent,;

Legal experts	• **Academic Qualification:**-((S)He should have a Masters degree in law from an accredited educational institution or equivalent • **General Experience:-** 5 years' experience in practicing law • **Specific Experience:-** Minimum of 2 years experience with legal and regulatory issues surrounding digital payments • **Registration and/licensing by Professional body :-** Law related certification or equivalent,;

9 Key Experts Qualifications and Experience Requirements, and estimated time inputs

It is anticipated that at least 60 staff months of key professional staff will be required, whose qualifications should be as indicated in Section 8.0 would be required to accomplish the tasks stated in the TOR.

S. No	Key Staff position	Approximate Staff Months
1.	Project Manager/Team Leader	12
2.	Enterprise Architect	12
3.	Financial Solution Architect	12
4.	Digital Payments Expert	12
5.	Legal Expert	12
	Total	**60**

10 Management and Accountability

The consultant shall report to the Chief Executive Officer administratively and to the Project Manager (KDEAP) operationally.

11 Responsibilities of the Client

11.1 Data, Local Services, Personnel and Facilities

- The Consulting firm will be provided with the following relevant documents on implementation of Kenya Digital Economy Acceleration Project; the KDEAP Project Appraisal Document, Digital Economy Blueprint, Kenya Digital Masterplan, Relevant Acts, Policies, Strategies and Frameworks, as well as draft documents currently under development
- The Consulting firm will be supported where applicable with introductory letters to stakeholders to facilitate data collection and to conduct interviews.

- ICTA will provide government staff to work with the consultant to deliver on the tasks.

11.2 Data, Local Services, Personnel and Facilities

- The Consulting firm will be provided with the following relevant documents on
- implementation of Kenya Digital Economy Acceleration Project; the KDEAP Project Appraisal Document, Digital Economy Blueprint, Kenya Digital Masterplan, Relevant Acts, Policies, Strategies and Frameworks.
- The Consulting firm will be supported where applicable with introductory letters to stakeholders to facilitate data collection and to conduct interviews.
- ICTA will provide government staff to work with the consultant to deliver on the tasks.

11.3 Other Facilities

- The Purchaser will provide as and when needed working space for the consultants to carry out project related assignments.
- The Purchaser shall provide the vendor staff, without charge:
  - ✓ Assistance as may reasonably be required; and
  - ✓ Such other support facilities as may reasonably be needed for the expeditious performance of the required services, including pertinent files, documents and working papers.

12 Responsibilities of the Consultant

The vendor will assist in coming up with is a set of policies, guidelines and standards of information and communication technology, which ensures sharing and integration of information and services among the governmental institutions from one side, and between citizens and the business sector and national and global organizations from the other side. The consultant will address technical, semantic interoperability policies and specifications. The Consultant WILL address high level Digital Payments Architecture that helps make payments across Government and facilitates the interoperability of e-services for citizen. This consultant should be based on open standards. The categorization of the standards in this consultant should be based on international best practices.

Through this project ICTA will be able to set the digital payments architecture guidelines that define standards and policies to be followed by all government entities. Each entity within the Government will be required to define their payments architecture for provisioning of e-Governance Services and improving the efficiency and effectiveness of the public sector. This would allow integration and collaborative government through implementation of common standards and policies across. The adoption of enterprise architecture is also focused on increased interoperability, transparency, increased accessibility, reduced security risk, lower costs of transactions and scalability to changing business needs.

The Firm will elaborate guidelines for defining, designing, developing and utilizing the consultant to enable interoperability across the Government, resource sharing among agencies, cost reduction for IT and business operations, enhanced transparency, shared processes and seamless e-services.

The consultant developed will describe how organizational, information and technology structures support the high-level government strategy and its operation.

The consultant will provide descriptions of the organizational goals, business and administrative process, information requirements, as well as the supporting applications and technology infrastructure of the enterprise.

These descriptions will be captured in the form of models, diagrams, narratives etc.

13 Propriety rights of Client in reports and records.

The ICT Authority, referred to here as the Client, shall possess complete proprietary control over all reports and records created as part of the consulting task. The following **conditions dictate the proprietary rights:**

Ownership: All reports, documents, records, or intellectual property developed during the consulting task are considered the sole possession of the Client.

Usage Rights: The Client has unrestricted and enduring rights to use the reports and records. This encompasses reproduction, distribution, display, and modification for internal purposes, public release, or any lawful utilization as determined appropriate by the Client.

Confidentiality: The Consultant is obligated to treat all reports and records as confidential material and is prohibited from revealing, replicating, or using them for purposes outside the consultancy task without explicit written consent from the Client.

Transfer of Rights: The Consultant hereby relinquishes and transfers to the Client all entitlements, ownership, and interests, including potential copyrights, in the reports and records. This transfer becomes effective upon the creation of each deliverable.

Non-Exclusivity: The grant of proprietary rights to the Client is non-exclusive, allowing the Consultant to maintain the right to apply the knowledge and experience obtained during the consultancy for their general business activities, excluding any specific confidential information from the Client.

Attribution: In any public disclosure or publication of the reports and records, the Consultant agrees to credit the Client as the rightful owner of the proprietary rights.

These terms governing proprietary rights remain binding throughout the consultancy and persist even after the termination or completion of the contractual agreement between the Client and the Consultant.