

Kigali, on 9th October 2021

Ref/N^o 12/RISA-WB/2021

Rwanda Information Society Authority (RISA)
Telecom House
8 KG 7 St, Kacyiru, Kigali
P.O. Box 6603 Kigali-Rwanda

REQUEST FOR EXPRESSIONS OF INTEREST

Project ID: 173373 RDAP

Assignment Title: Feasibility study to support the preparation of an operational plan for the enhancement of government network planning and management, and roll-out of public access point, within the context of expanding last mile connectivity in RWANDA

Reference N^o: To be generated by eProcurement System

The Government of Rwanda has received financing from the World Bank toward the cost of the RWANDA DIGITAL ACCELERATION PROJECT and intends to apply part of the proceeds for consulting services.

The consulting services include Feasibility study to support the preparation of an operational plan for the enhancement of government network planning and management, and roll-out of public access point within the context of expanding last mile connectivity in RWANDA with estimated level of effort of 16 staff-weeks for 4 months.

The ToR for the assignment are attached to this REOI.

RISA now invites eligible consulting firms to indicate their interest in providing the Services. Interested Consultants should provide information demonstrating that they have the required qualifications and relevant experience to perform the Services. The shortlisting criteria are: The consulting firm should have at least performed 5 assignments in consulting services as general experience, at least three relevant or specific performed consulting services similar to the assignment, the technical and managerial capability of the firm (Provide only the structure of the firm, general qualifications, experience and number of key staff).

The attention of interested Consultants is drawn to Section III, paragraphs, 3.14, 3.16, and 3.17 of the World Bank's Procurement Regulations for IPF Borrowers November 2020 setting forth the World Bank's policy on conflict of interest.

Consultants may associate with other firms to enhance their qualifications but should indicate clearly whether the association is in the form of a joint venture. In the case of a joint venture all the partners in the joint venture shall be jointly and severally liable for the entire contract, if selected and all partners must be registered in eProcurement System for Rwanda.

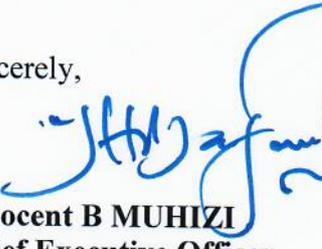
A Consultant will be selected in accordance with the QCBS method set out in the Procurement Regulations.

Further information can be obtained through eProcurement System before deadline of submission of EOI.

Expressions of interest must be delivered in a written form through eProcurement System for Rwanda at (www.umucyo.gov.rw) not later than 11th November 2021 at 16:30 local time and shall be opened through the eProcurement System on the same date at 17:00 local time.

Note: For interested consultants not yet registered, please apply first for digital certificate on www.govca.rw and then register your business on www.umucyo.gov.rw (eProcurement system for Rwanda) through supplier registration, in order to submit your proposal.

Sincerely,


Innocent B MUHIZI
Chief Executive Officer
Rwanda Information Society Authority



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TERMS OF REFERENCE

A. BACKGROUND

The Government of Rwanda (GoR) is set to receive funding (US\$ 200 million) from the World Bank (WB) and the Asian Infrastructure Investment Bank (AIIB) to accelerate country-wide digital transformation. The proposed “Rwanda Digital Acceleration Project” (henceforth referred to as the ‘the Project’) seeks to expand digital adoption, bringing more Rwandans online by addressing the major barriers that dampen demand for digital services and spearheading a series of interventions that promote digital inclusion and access to broadband. The Project will also enable Rwanda to leverage critical enabling digital platforms and data-driven solutions to improve the efficiency of public service delivery and expand the adoption of digitally enabled e-services. Finally, the project will also increase Rwanda’s capacity to support digital innovation and productivity gains, by strengthening the local digital innovation and entrepreneurship ecosystem.

Under the Project, the GoR is looking to optimize government connectivity network planning and management, and bridge the lingering connectivity gap among public sector institutions, expanding access to high-speed broadband connectivity among selected priority public institutions throughout the country, including local government offices, health facilities, public schools, as well as public service access points. Wider government connectivity will serve as the basis for the deployment of a resilient and closed managed virtual government network for government institutions (GovNet), managed by a new Network Operations Center (NOC).

Government connectivity schemes such as the One Government Network (OGN) have sought to expand access to broadband in the public sector, but large access gaps remain (particularly among local offices at district- and cell-level), preventing decentralized use of digital government platforms and local access to digitally-enabled public service. A recent mapping also concluded that 43 percent of all schools (1,796 in total) lack internet access, preventing the use of enabling digital tools in education and expanded digital skills training. The OGN was initiated in 2018, with the aim to connecting all unconnected public institutions, initially focusing on the education, health, local government, and finance sectors through a public private partnership (PPP) centralized framework that was negotiated, leveraging economies-of-scale, and 4G wireless solutions to provide last-mile connectivity access.

A revamped OGN model is envisioned to ensure greater sustainability, innovative solutions and technology diversification, streamlined maintenance and support services, as well as a stronger value proposition through increased private sector participation, while maintaining the principle of bulk capacity pre-purchase. Where feasible, the GoR is eager to ensure that sector offices are connected to high-speed fixed broadband solutions to ensure high-quality connections and stimulate further growth in fixed-line access networks. In some locations, the modernization of local area networks (LANs) in government institutions may also be required to facilitate and maximize local access and usage.

The GoR is also looking to deploy WiFi hotspots that would make broadband more accessible in strategic location, such as model villages, marketplaces, taxi parks, public transport buses, and other public places, for open use at subsidized costs. The appropriate technology solutions deployed may differ depending on targeted locations and purpose. While the scheme would be publicly funded, it would aim to crowd in commercial services provision to the full extent possible to encourage sustainable business models for deployment, maintenance, and

value-added services. The GoR is eager to explore how to mutualize this scheme with public connectivity investments.

The Project implementation will be led by the Rwanda Information Society Authority (RISA), under the Ministry of ICT and Innovation (MINICT). Leveraging project financing, the GoR hopes to connect the maximum feasible number of sites with high-speed broadband over 5 years, including local government offices, hospitals, public schools, and public hotspots.

B. OBJECTIVE OF ASSIGNMENT

The consultancy hired is expected to assist RISA in conducting a detailed feasibility study to refine the design and develop a detailed implementation budget, plan and tendering documents for the expansion of last-mile connectivity to priority public institutions, enhancement of government connectivity management, and establishment of public access points throughout the country. It will identify appropriate and sustainable models for achieving GoR's connectivity objectives to be financed under the Project that maximize private sector participation. The consultancy is expected to support a detailed demand, network and market analysis, and to develop detailed technical, financial and operational plans for expanding access to connectivity through bulk capacity purchase (based on indefeasible right of use), the introduction a new Network Operations Center (NOC), as well as a closed and secure Virtual Private Network (VPN) for Government.

C. DETAILED SCOPE OF WORK

The consultancy is expected to perform the following key tasks, as part of this assignment:

1. Conduct a connectivity needs assessment, market, and network diagnostic to inform network planning and technology requirements for expanded government connectivity and public access points. The consultancy is expected to take stock of the current government connectivity landscape and model, as well as the local broadband market, to help Government identify capacity requirements for public institutions/sites to be connected, based on a detailed demand forecast. It is expected to help identify priority locations to be connected that will inform further analysis of appropriate technical and financial models to be employed, based on existing and planned network investments and providers able to offer related services in the local market. The consultancy is expected to conduct site visits, leverage existing analytics and reports to the degree possible, but also conduct and document stakeholder consultations. The assessment should employ both a geographic and sectors-based approach, disaggregating sites, demand etc. by sector, type of institution/site and geographic location, as appropriate. The assessment should consider both the demand and supply side. The assessment should *inter alia* include the following elements:

- a. A geo-referenced **digital map of public institutions and sites** to which high-speed, high-quality broadband connectivity services should be provided, which can be managed centrally by RISA moving forward (e.g. to track progress). The map should distinguish between currently connected sites and to be connected sites.
- b. A **broadband connectivity demand and traffic forecast** that considers the current and future user base in the different sectors such as governance, education, health, and by institutions/sites to be connected, considering GoR sectoral plans, and e-government initiatives that will affect bandwidth and network requirements (based on a 5-10 years horizon). This forecast should also factor in wider demand in the vicinity of connected locations, which would affect the financial

viability for service providers. Using the forecast, the consultancy should also determine where to strategically position public access points.

- c. A review of viable **technology options and infrastructure available** to connect sites and meet demand identified, including identification of additional investment that would be required to meet the envisaged targets to connect all sector offices to fiber optic, modernize local area networks in government institutions, and to establish a standard and resilient managed network for government (GovNet).
- d. A **review of the existing and planned government connectivity initiatives** (including the OGN, plans for the roll-out of a SMART education network etc.) including but not limited to type of service/technology offered, coverage, capacity offered in view of needs, cost and sustainability, resilience and security, contract management models used, technical support and maintenance services, as well as related lesson learned.

2. Recommend appropriate network design models for the expansion of Government connectivity and the establishment of public access points: Based on the initial assessment and global best practice, the consultancy is expected to propose the most appropriate network architecture and roll-out model of government capacity purchase for priority sites to be connected, and for a new NOC and closed management network to be set up. The consultancy must propose the most appropriate broadband network solutions and consider different network technology alternatives as part of its analysis that identifies the most suitable combination from the standpoint of coverage, high-speed, quality, and cost effectiveness. The consultancy should consider viable management structures, contracting options (e.g. build own and operate / build own transfer models, sectorial and/or geographical lots etc.), technical and business models applicable. The consultancy should help the GoR to weigh different models/scenarios, presenting pros and cons, based on agreed selectivity filters. The models selected should *inter alia* be consistent with GoR policy and legal frameworks; support open, flexible, transparent and non-discriminatory access to core network infrastructure deployed by the private sector; encourage competition and maximize private sector participation (e.g. in roll-out, commercialization and maintenance) to ensure sustainability. The consultancy should also consider the climate footprint of technology/infrastructure solutions chosen; consider Government's capacity for managing the model selected (including existing human resources, sectors' ownership); risks between contracting parties, avoiding any conflicts of interest between the sub-contracting parties; costs/available funding for related initiatives and sustainability of service provision; and making it possible to facilitate cost-effective, reliable, secure, and fast national communications, including emergency communications.

The analysis should *inter alia* feature the following core elements:

- a. A **technical analysis** that identifies and factors in the variables that would affect solutions' cost, resilience, security, coverage, etc., and highlighting strategic choices to be made, and suitable technical standards/benchmarks that ought to be adopted (capacity, performance, deployment models, etc.).
- b. A **financial and sensitivity analysis**, including estimates for upfront investments (CAPEX) and operating costs (OPEX) associated with the models considered, as well as considering commercial viability for private sector and available public funding. The consultancy should estimate the Net Present Value (NPV) and Internal Rate of Return (IRR) associated with the investment and the break-even point given the anticipated cash flows for each of the revenue sources identified under considered options. The financial analysis must clearly identify all unitary costs of the elements involved.

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- c. A **market assessment and sounding** that identifies likely bidders and documents potential service providers' views on financial and technical aspects of contracting expected.
3. **Detailed project implementation and management plan, as well as documentation that can support related procurement transactions** to allow for swift operationalization. Once the most appropriate techno-economic solution and the model/structure to be followed has been adopted, the consultancy is expected to provide:
- a. A **detailed work plan for a phased implementation** of the enhanced and expanded government connectivity initiative, including suitable **institutional arrangements**, along with outputs and outcomes that are expected at different stages of such implementation, and **metrics that can be used to track progress**. The consultancy must outline the support that private sector partners may require from the GoR to ensure successful roll-out (e.g. facilitating any regulatory interventions, permissions, and access) and define any **governance norms** applicable to the scheme. It must also define the operational resources needed for implementation, including budget and human capacity.
 - b. A **detailed budget and costs analysis**, including the value of contracts associated with implementation (based on the expected dimensions of the network and technical, capacity and traffic, network technology used, geographic distribution/number of connected sites etc.), including any unitary prices rates applicable.
 - c. A short **training needs analysis and plan** in respect to the knowledge that RISA and other key stakeholders will require to effectively manage implementation.
 - d. A **detailed description of technical specification and service level parameters** needed to develop tender documents that can support competitive bidding of capacity for target locations, the NOC and VPN, including procurement of supporting services and equipment. The firm should develop related procurement documentation.

A critical element of the assignment is also **knowledge transfer** to the RISA team as well as other relevant stakeholders. At all times, the consultancy should therefore ensure that this is infused in work undertaken, whenever possible.

Deliverables produced should be informed by **stakeholder consultation**, which should be documented.

D. TIMELINE AND EXPECTED DELIVERABLES

The Consultancy is expected to complete the assignment in full within four months or 16 weeks, and deliver the following deliverables, based on the indicative timeline below:

- Project inception report – within 2 weeks of the commencing the assignment
- First interim report containing needs assessment, market, and network diagnostic, and accompanying digital mapping – within 6 weeks of commencing the assignment
- Second interim report containing recommended design options, and related financial and technical analysis - within 10 weeks of commencing the assignment
- Third interim report containing detailed project implementation, management, M&E and training plans, budget and procurement documentation for investments proposed – within 14 weeks of the commencing the assignment

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- Final report covering the assignment in full – 16 weeks

E. PROCEDURES FOR REPORTING

The consultancy will submit all deliverables noted above to the Head of the Single Project Implementation Unit (SPIU) at RISA, and also submit short weekly project updates to the assigned focal point in the SPIU. As requested, the consultancy may also be responsible for presenting to a team of relevant stakeholders to validate reports submitted.

F. LOCATION

The consultancy must be available to work in Rwanda (e.g. through in-field missions). However, given the status of travel, due to Covid-19, part of the assignment can be delivered remotely (e.g. the stakeholders consultations). Collaboration with local experts or having at least one expert to be based in Rwanda for the duration of the assignment, is strongly encouraged, as this will also facilitate collection of requisite inputs, knowledge of local context and support knowledge transfer.

G. REQUISITE EXPERIENCE AND QUALIFICATION: FIRM & CORE TEAM

The consulting firm must demonstrate:

- Extensive experience in the ICT/telecommunications sector and in supporting infrastructure development, including in emerging markets. Prior work in Africa is preferred.
- A track record of completing at least three similar assignments in the last 10 years.
- Extensive experience of conducting comprehensive telecoms market studies, which consider both supply and demand, including preparing detailed and accurate demand forecasts.
- Extensive experience in leading network assessments, planning and design, preferably at national scale, including in developing related technical specifications and business/financial models.
- Experience in preparing detailed cost-benefit analysis for digital infrastructure investment decision and/or advising on related transactions.
- Some familiarity with the network deployment and management models used by Governments is preferred, including related considerations that may impact design and management models applied, including advising public sector Clients.
- Understanding of broadband market trends and telecoms regulations that impact digital infrastructure investment decisions.
- Clear understanding of the assignment and plan for its successful execution

The firm shall propose a team comprising of at minimum - Team Leader/Lead Technical Advisor, Technical Advisor and a Financial Advisor, alongside any additional staff deemed appropriate to successfully completing the assignment. All team members must be fluent in English.

The Team Leader/Lead technical advisor shall have:

- A master's degree in ICT, Engineering, Economics, Management, or related field;
- At least 12 years' experience in the ICT/telecoms industry, focused on leading the successful preparation and execution of network infrastructure investments, including in emerging markets. Prior experience in Africa is preferred.
- Demonstrated project management experience in respect to leading similar tasks covered by the assignment, which includes leading and completing at least 3 comparable assignments.
- Experience of conducting comprehensive telecoms market diagnostics.

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- Experience in leading network assessments, planning and design, preferably at national scale. Experience in designing related broadband strategies and roadmaps is preferred.
 - Experience of advising on large-scale infrastructure investments decision.
 - A track record of leading successful network development and commercial operation in the public and/or private sector.
 - Proven ability to engage effectively with different stakeholders in the ICT sectors, and leading related stakeholder engagement and consultation.
 - Familiarity with telecoms regulation and policy.

The Technical Advisor shall have:

- A master's degree in ICT, engineering, or comparable field.
- At least 7 years' experience in the ICT/telecoms industry, focusing on network planning and design.
- A track record of supporting successful network planning and commercial operation in the public and/or private sector, including supporting at least 3 similar assignments.
- Experience of conducting detailed connectivity needs assessments and demand forecasts that inform infrastructure investment decisions.
- Experience in providing technical advisory services in respect to telecom networks investments transactions.
- Experience of preparing businesses cases for national infrastructure investments, including in a development context.
- Ability to develop detailed documents to support related decision-making, and effective deployment, including experience of developing detailed network plans and technical specifications.
- Understanding of the business, financial and procurements models used in the digital connectivity sector.

The Financial Advisor shall have:

- A Master's degree in Finance, Economics, Business, or equivalent.
- At least 7 years' experience in the ICT/telecoms industry, focusing on developing the financial analysis that informs network infrastructure investments, including in emerging markets. Experience in Africa is preferred.
- Knowledge of network economics, including experience of drafting/reviewing financial models and preparing cost-benefits analyses for network investment decisions.
- Experience of preparing detailed optional budgets and financial plans for large-scale investment projects.
- A track record of contributing to detailed feasibility studies and providing transaction advisory services in respect to network investments, including successful completion of at least 3 similar assignments.

In all cases, credentials and client reference coordinates must be supplied for cited experience.

H. CLIENT'S RESPONSIBILITIES

The Client shall provide the following to the best of its ability:

- All available data and literature considered relevant for accomplishing identified tasks, at its disposal, including relevant data collected by Government.
- Introductions to key officials within the relevant government ministries, agencies, and departments (MDAs), as applicable, ensuring cooperation from stakeholders whose activities and programs may be considered relevant to the assignment.
- Respond to information request in a timely manner.

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- Timely validation of deliverables, targeting a one-week validation timeline per deliverable.