

Terms of Reference

Position Title:	Higher Education Network Specialist to support the higher education sector in Somalia
Accountable to:	Project Manager, Program Implementation Unit, Ministry of Posts and Telecoms, Somalia
Type of Appointment	Individual Consultant, internationally recruited
Reference No	GFRS/ICT/2015-16/C2
Duration	60 days
Duty Station	Consultant will work from home location, with visits to Mogadishu, Garowe and Nairobi, as required

1. Context:

The ICT Sector Unit of the World Bank Group is working with the Ministry of Posts and Telecommunications (MPT) and the Ministry of Finance of the Federal Government of Somalia to provide a program of ICT Sector Support, 2014-2018. The Federal Government of Somalia is the Recipient of the ICT Sector Support in Somalia program endorsed by the Somalia Development and Reconstruction Facility (SDRF) and funded under the Somalia Multi-Partner Fund (MPF) administered by the World Bank.

Under the second phase of the program, the Program Implementation Unit (PIU) of the Ministry of Posts and Telecommunications is seeking to employ an internationally-recruited individual consultant for the post of an “**Higher Education Network Specialist**” as an expert on establishing national research and education networks (NRENs), to support the design and build out of a communications network for higher education institutions in Somalia. The contract would cover a total of 60 days work.

Background

The ICT sector, particularly mobile phone communications, is one of the brightest spots in the Somali economy. The telecommunication sector has the potential to be a major contributor to the Somali national economy, as elsewhere in Africa, where it contributes up to 7 per cent of GDP per capita. Despite, or perhaps because of, the lack of a public sector presence in a 20-year civil war, private, unlicensed mobile companies, using satellite for international communications, have emerged to meet the high demand for communications, especially with the large Somali diaspora. Between 7 and 10 mobile phone companies are present in Somalia, Somaliland, and Puntland with some being present in all 3 areas through partnerships. Penetration of mobile phone subscriptions is running at around 59 per 100 inhabitants, though the actual level of ownership is likely lower as many users have multiple SIM cards, due in part to a lack of interconnection among operators until 2014.

Despite an absence of significant foreign commercial investment, Somali mobile phone operators service have approximately 6.4 million subscriptions (an estimated 3 million unique users) in Somalia and have introduced 3G mobile services with limited penetration (<0.5% of the population). Some operators began offering 4G LTE services in 2014, though penetration has remained low and service areas very limited. In contrast to mobile communications, the Internet sector in Somalia remains underdeveloped with less than 3 per cent of the population having access to the internet. Until early 2014 international connectivity was provided almost entirely by satellite and very small aperture terminals (VSATs), which are expensive and unreliable, particularly when used for data traffic. New fibre connectivity arrived in Somalia in 2014 in three locations: in

Mogadishu (undersea EASSy cable), in Hargeisa (terrestrial cable from Djibouti) and at the Kenya border to the south (terrestrial cable from Garissa).

The university and tertiary education system in Somalia was one of the first actors to seek to take advantage of the enhanced connectivity made possible through the arrival of the EASSy cable in Mogadishu and the SOMcable linking Hargeisa to internet access point Djibouti in 2014. The SomaliREN has established links with both the regional RENs in Eastern and Southern Africa (UbuntuNET) and the Arab States (ASREN) and the donor funded AfricaConnect program. The Somali REN has benefitted from technical assistance from the Royal Swedish University (KTH). But to date financial and technical capacity constraints have prevented it from securing bulk purchase of bandwidth, or from paying the membership fee to join UbuntuNet and Africa Connect. Once this is done, there is a further requirement to build out the internal networks enabling connectivity to and between higher education institutions.

The ICT Sector Unit of the World Bank Group is working with the Ministry of Posts and Telecommunications (MPT) and the Ministry of Finance (MoF) of the Federal Government of Somalia to provide a program of ICT Sector Support, 2014-2018. The project development objective for ICT Sector Program (covering Phase 1 and Phase 2) is *“to contribute towards the process of developing a regulatory framework for the telecommunications sector and building an ICT infrastructure in Somalia”*. The project is prepared as an Investment Project Financing to be implemented by the Federal Government of Somalia as a series of three overlapping phases.

Phase 2 (March 2015 – March 2018), continues activities started in Phase 1 and adds new activities on developing a regulatory framework for mobile money, supporting a Somali higher education network and introducing SIM card registration.

Phase 2 has three components:

1. Enabling Environment, focusing on supporting the regulatory and governance framework for the sector, following the anticipated passage of the new Communications Law. This will provide for ongoing support to the Ministry and new regulator and will facilitate a new activity on support for the implementation of an effective mobile-money framework.
2. Efficiency and equity in access to connectivity, which will support the extension of the establishment of communications rooms in key ministries across different economic zones, the establishment of a framework for SIM card registration and will seek to make optimal use of the undersea fiber cable arriving in Mogadishu by supporting the Somali Research and Education Network.
3. Support and Capacity-Building for the Project Implementation Unit within the MPT.

Components 2 and 3 will be executed by the Recipient, the PIU within the MPT working together with the External Assurances Fiduciary Section (EAFS), within the Ministry of Finance. Component 1 will be executed by the World Bank Group on behalf of the Recipient.

2.2: “Supporting Connectivity to the Higher Education Sector”

The main objective of sub-component 2.2, “Supporting Connectivity to the Higher Education Sector,” is to support connectivity in the higher education sector using the existing Somali REN and to enable its member and non-member Institutions (Universities, Institutions of Higher Learning, Research Institutions, etc.) to increase their use of connectivity/bandwidth. Implementation of this program will allow other universities, such as the Somalia National University and other relevant institutions, to join an inclusive and wider Research Education Network that will focus on reaching the whole territory in order to benefit students’ learning and to reduce the academic isolation of teachers and professors. National-level implementation will be coordinated by a Project Implementation Unit (PIU) within the Federal Government of Somalia’s Ministry of Post and Telecommunications. Local implementation in Puntland State of Somalia would be coordinated by a project coordination unit (PCU) within the Ministry of Information, Communication, Culture and Heritage (MICCH). The PIU-PCU model to be initially piloted in Puntland could replicated within additional federal

states as the project progresses. The overall aim is to enable the institutions to share information with each other and also with other educational and research institutions across the region and world.

Sub-component 2.2, “Supporting Connectivity to the Higher Education Sector,” encompasses four sub-activities:

- (1) Bandwidth/connectivity support capacity for universities and tertiary institutions, through a demand aggregation scheme and via competitive tendering. This would be carried out in collaboration with Universities in the higher education sector, and with parallel financing from the AfricaConnect program. This high-speed bandwidth will also facilitate the interchange of education and research content between higher education universities, including, but not limited to SomaliREN member institutions. There is also scope for demand aggregation of international bandwidth requirements with component 2.3 (Communications Rooms for Ministries). Bandwidth in Mogadishu will be covered principally through the AfricaConnect program, whereas in the rest of the country a separate procurement would be carried out using the funds from the Bank program.
- (2) Construction of a Network Operations Centre (NOC) and a local distribution network (using a mix of fibre, microwave and satellite) used to manage and maintain the higher education network. This will include training and capacity building for NOC staff on the distribution of bandwidth (through a university internet exchange point), monitoring the performance of the telecommunication network, carrying out basic cybersecurity tasks, optimizing the network's performance, and facilitating billing, etc;
- (3) Covering the costs of a counterpart investment of membership to enable Somalia to participate in the AfricaConnect21 program; and
- (4) Supporting training and capacity-building in particular to support the operation of the REN network by staff of the SomaliREN and by their local counterparts in each university served.

2. Terms of Reference for an Individual Consultant (“Higher Education Network Specialist expert”) to provide Technical Assistance supporting the Design, Installation, and Management of a Broadband Network System for Higher Education in Somalia

This call for expressions of interest concerns the recruitment, by the World Bank Group on behalf of the Ministry of Posts and Telecommunications of the Federal Government of Somalia, of an Individual Consultant, internationally recruited, as an “Higher Education Network Specialist ,” acting as part of a two-person Technical Support Team (TST), to provide technical assistance focused on designing, advising, and monitoring the implementation of the establishment of a Somalia Higher Education Network, and including support to the SomaliREN and the MPT as SomaliREN adjusts its governance structure to suit the roles and responsibilities of a mature National Research and Education Network (NREN) organizational body. The Network will focus on higher education network infrastructure, and include building out a national backbone and local loops linking to end-user institutions, as well as Points of Presence linking the national network to regional and global RENs (UbuntuNet and GEANT, respectively). The project’s scope would also include supporting the supply, establishment, and human resource development of the Network Operating Center (NOC) necessary to ensure technical capacity and ongoing operations and management.

As part of the TST, the Higher Education Network Specialist will provide hands-on support on all aspects of implementing the higher education network, both in relation to the project’s technical efforts to build out a national network connecting universities and research institutions within Somalia, and advisory support to the SomaliREN on management of the network and engagement with regional NRENs through the AfricaConnect Initiative.

Working closely with the nationally hired ICT Technical Specialist (the second individual comprising the TST), tasks will include supporting the recruitment of core technical personnel who will operate the Network, including the staff running the NOC, a firm to construct and initially manage the NOC and local loop(s), and providing capacity building and advisory support to the SomaliREN’s governing body. The TST, a team, will provide support in this way until the Network is operational and equipped with staff sufficiently trained to manage the Network independently. The chosen consultant will work in close cooperation with the co-TST

member ICT Technical Specialist, the World Bank team, the MPT, SomaliREN, the UbuntuNet Alliance, and the other relevant stakeholders and international donors.

It is estimated that some trips will be required to Mogadishu and Garowe, subject to the security situation, as well as to Nairobi.

Individual Consultant-“Higher Education Network Specialist ” responsibilities will include but are not limited to:

- i. Developing an implementation plan for the Network for Higher Education and monitoring its implementation progress throughout the project’s lifetime.
- ii. Supporting the ICT Technical Specialist in developing an initial Network system design, including topographical design, for the Higher Education Network, (including the Network Operating Center and corresponding fibre, microwave, or satellite links, both in Mogadishu and other areas of operation) with which to frame the technical requirements for the firm tender.
- iii. Providing technical assistance to the MPT to prepare standard bidding documents, in line with World Bank guidelines, for the procurement of a firm to implement, operate, and provide maintenance for the system design for the higher education network, on a turn-key basis, including internal links, local access points, Basic Campus Networks, backhaul, and NOC of the SomaliREN network;
- iv. Liaising with the stakeholder community –universities, research institutions, SomaliREN Board of Governors, mobile operators and internet service providers, the Ministry of Higher Education, and university administration umbrella organizations (ie. Formal Private Education Network in Somalia [FPENs], the Association of Somali Universities,)
- v. Providing advisory support to the SomaliREN as it restructures its government structure and builds its capacity to operate as an independent Trust
- vi. Reviewing the operating and business plan for the Somalia Higher Education Network, particularly in terms of the SomaliREN’s role.
- vii. Supporting the MPT in the procurement process for all relevant firms and consultants under this sub-component including RFP, bid evaluation, negotiation and contract finalization;
- viii. Supporting the MPT in liaising with external sources capacity building beyond the UbuntuNet network, such as the University of Oregon’s Network Startup Resource Center (NSRC), or RENs in countries like Kenya (KENET) and South Africa (TENET);
- ix. Advisory support to the SomaliREN in carrying out an readiness assessment across the Somali higher education institutions to provide the project with an end-user baseline and to define the eligibility criteria for connectivity to the Network.
- x. Certifying network installation completion, issue operational acceptance certificates to vendors/ suppliers/ contractors.

3. Deliverables

The primary deliverables are:

- A detailed implementation design plan outlining how the SomaliREN network will be implemented, including enabling opportunities for future growth and containing a Pilot Phase 1 and a larger Phase 2. The implementation design plan should show evidence of collaboration with the other consultants and parts of the projects as well as collaboration with the UbuntuNet Alliance (AfricaConnect Initiative), SomaliREN Coordinating Board, and other development partners;
- Report on the restructuring of and capacity injection to the SomaliREN governance structure enabling it to operate and manage the Higher Education Network as a mature NREN
- Assistance to the PIU in Procurement of the firm(s) engaged to build, operate, and transfer the NOC and national backbone and local loop(s) comprising the Somalia Higher Education Network
- Conducting training workshops and learning sessions on a continuous timeline for NOC and university staff, SomaliREN Board and other stakeholders.

- Certification of network installation completion and operational acceptance certificates to vendors/suppliers/contractors.
- A final report summarizing the outcomes and evaluating the readiness of the SomaliREN network according to international standards and best practices within the region.

The work is expected to be delivered in English, but with some translation into Somali, as required.

Note: Primary deliverables for the Independent Consultants comprising the TST are overlapping, and the Independent Consultants are expected to work as a team.

4. Counterpart Support

The MPT's PIU will provide logistics and institutional support and the SomaliREN Board of Governors will serve as an additional resource to the Individual Consultant when carrying out the assignment. Once ready for use, the TST consultants will also be able to use the NOC location for office space and training session locations.

5. Reporting and Duration

The Individual Consultant will report directly to the MPT/PIU. The PIU will then coordinate with the overall MoPT. The World Bank team will work with the consultant and the PIU through coordinated weekly calls and site visits, based on need. As part of the scope of work, the consultant will work closely with the SomaliREN Board of Governors as a resource and the NOC staff as a team. The consultant will also work with Technical Staff from other relevant implementing agencies, the line ministries, and other officers responsible for project activities. It is estimated the task will take around 60 days until June 2016 including trips to Mogadishu, Garowe and Nairobi and possibly other Federal States.

6. Qualifications and Experience

The Individual Consultant should be able to offer all, or at least most, of the following qualifications and experience:

- A higher degree, such as an MSc or PhD, in Applied Physics/Engineering/Computer Science/Telecommunications, or a related discipline from a reputed university. Experience with the establishment and operation of national research and education networks or work within the R & E community
- At least four years of experience in a senior management or operational position;
- Experience in operation and maintenance of large network, systems design and data transmission involving optical fiber;
- Experience in operation and maintenance of VSAT, and microwave networks is preferred in addition to fibre-based networks;
- Knowledge of and demonstrated experience in management of contracts and procurement of network equipment;
- Work experience in a commercial environment, with negotiation skills and experience on bandwidth procurement and leasing of infrastructure;
- Experience of similar projects in design, management, training & supervision, hand-holding and strategy on supporting the effective implementation and operation of a Research and Education Network or other similar networks;
- Experience working in post-conflict environments is desirable;
- Experience working in the ICT Sector, and or higher education sector, in Africa is essential;
- Experience of working in Somalia, or a good knowledge of the region, is desirable;
- Excellent communications, training, mentoring and managerial skills;
- Ideally the chosen candidate should have security clearance to travel in Somalia, including Puntland and Somaliland. If this security training has not been previously obtained, the Bank can assist in

providing it, through the UN DSS, but with the proviso that the full daily rate would not be payable during training days.