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## Terms of Reference

### Open Net Log-In Georgia Project

#### *Title*

#### **Engineer Consultancy Services for Civil Works of Fiber Optic infrastructure rollout (Abasha-Senaki and Tskaltubo-Vartsikhe-Khoni)**

#### **A. INTRODUCTION**

The Government of Georgia has *received* financing from the World Bank toward the cost of implementation of Log-In Georgia Project (“Project”). Open Net is in implementing entity of this Project. In the capacity of Employer, Open Net seeks services of a Consultant (legal body) to undertake **Engineer Consultancy Services for Civil Works of Fiber Optic infrastructure rollout (Abasha-Senaki and Tskaltubo-Vartsikhe-Khoni)**

The Project consists of the following key components and subcomponents:

**Component 1:** Increasing access to broadband – this Component will help expand access to broadband internet in rural settlements across Georgia and improve the enabling environment for digital development.

- a) Subcomponent 1.1: Supporting the Open Net Program – the Open Net Program will develop a national infrastructure to offer open access, wholesale, and broadband telecommunications services.
- b) Subcomponent 1.2: Improving the enabling environment for digital infrastructure – this subcomponent will support activities to improve the enabling environment for digital infrastructure development in Georgia. This will support the development of legal, policy, and regulatory instruments, and design of investment attraction measures included in the national broadband development strategy (adopted in 2020).

**Component 2:** Promoting the use of broadband-enabled digital services – this Component will support the development of Georgia’s digital economy through a strengthened enabling environment, promoting digital use-cases of broadband, and addressing barriers to the participation of individuals in the digital economy.

- c) Subcomponent 2.1: Enabling environment for digital economy development – this subcomponent will support activities to improve the enabling environment for digital economy development in Georgia.
- d) Subcomponent 2.2: Promoting use-cases – the subcomponent will promote specific use-cases of improved broadband connectivity in targeted rural settlements.
- e) Subcomponent 2.3: Increasing digital inclusion – this subcomponent will finance

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targeted interventions to boost the use of the internet and digital services by women, social minorities, and persons with disabilities in targeted settlements.

**Component 3:** Project implementation support – this component will support the management and implementation of the Project and associated activities.

## **B. Objectives of Services**

The objectives of this consultant assignment are to supervise civil works for the construction of fiber optic infrastructure to ensure that the works are executed within contractual time and budget and comply with the approved design, specifications, environmental and social requirements, and sound engineering practices.

## **D. Scope of Services**

### **D.1. Tasks during the Design Stage**

To review the detailed design submitted by the contractor and make sure it is in accordance with Annexes N3, N4, and N5 of the Specifications of the Contracts for the abovementioned CW, and provide his remarks and suggestions to the Employer.

### **D.2. Tasks during the Construction Stage**

In order to fulfill the above objectives, the Consultant shall at all times take necessary measures and provide appropriate advice to the Employer to enable the construction contract to be completed in a timely and cost-effective manner, in conformity with the civil works contracts conditions and specifications.

The Consultant shall supervise the construction of the network on both sites. During monitoring, the Consultant shall not only observe that the built infrastructure is done in a manner that is required by the contract between the Employer and Contractor, and in accordance with environmental and social requirements, but also to notify the Employer and/or Contractor of any irregularities and/or faults in comparison to the requirements of the civil works (CW) contract.

During the construction period, the Consultant shall:

1. Acquaint itself as thoroughly as possible to the nature and scope of the works, of all information available and of documents and materials to be used by the contractor in executing the works, so as to enable itself to perform its duties satisfactorily;
2. Study and check all documents associated with the project, foresee possible problems and advise the Employer appropriately during the construction works.
3. Set up and establish the system of managerial control for the works of the contract with provision of assistance to the Employer maintaining control over estimated works quantities and contract outcome costs, in monitoring the progress of the works, the disbursements and technical records.
4. Supervise the construction works with due diligence and efficiency and in

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accordance with sound technical, administrative, financial, economic, environmental and social practice. The consultant shall perform all duties associated with such tasks to ensure that the final product is in all respects equal to, or better than that specified, and is carried out in full compliance with the contract terms and conditions and technical requirements defined in the governing specifications;

5. Assist the Employer in the acceptance and/or approval, as appropriate, of submissions required from the contractor, including, but not limited to insurance, guarantees, licenses, programs, method statements, traffic management plans, safety measures, suppliers, and materials for incorporation in the works, quality assurance and control plans, execution of the testing program, subcontractors, equipment and environmental and social management plan;
6. Oversee the adherence of the Contractor to the national environmental and social legislation, Environmental and Social Management Framework (ESMF), Resettlement Policy Framework (RPF) of Log-In Georgia Project, Employer's Environmental and Social Management Plans (ESMPs) and Contractor's own ESMPs, including due application of mitigation measures prescribed for community health and safety, workers' occupation health and safety, and pollution and waste management. To help the contractor with updating C-ESMP to the satisfaction of the Consultant and the Employer.
7. Ensure adherence of the Contractor to the Employer's Labor Management Procedures (LMP) and Contractor's own Code of Conduct to prevent discrimination, child labor, forced labor, and gender-based violence at worksites and as well as adherence to the National Labor Law and international conventions under World Labor Organization that Georgia is a party to.
8. Make sure that all material that is required to have been tested by competent entities in accordance with the specifications has corresponding certificate/datasheet/technical specifications/lab test results accompanying them. For all the other materials that have been described in the specifications and don't come with the certificate/datasheet/technical specifications/lab test results, do testing or sample testing as appropriate. A system of formal testing procedures must be set up covering the frequency of testing, the type of test to be carried out, and the method and format of reporting the result. The Consultant shall prepare a program of testing;
9. Ensure the monitoring of fiber-optic cable/core measurements specified in the Employer's specifications of the CW contract and the veracity of its conduct and results, which in turn should be confirmed by relevant acts, which will clearly show the accuracy of cable installation work and compliance with Employer's specifications methodology;
10. Supervise the conduction of necessary tests by the contractor in accordance with the CW contractual specifications;
11. To confirm the training materials developed by the Contractor are based on the provisions provided in the environmental and social documentation of the Project (ESMF, ESMP, LMP, RPF, Stakeholder Engagement Plan) and that the Contractor

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- conducts training sessions for its staff.
12. Keep updated all records including daily logs, works diaries, correspondence, instructions given to the contractor, test records, measurement and quantity calculations, and all other relevant documents pertaining to the works operations and supervision contract;
  13. Prepare control charts of main activities and a project master schedule, indicating both past performance and forecasts for completion including time involved in each case. The methodology shall involve development of a hierarchy of programs, including a summary program for overall control, contractors' mobilization, construction activities including key dates, completion, and commissioning. It shall also cover document review and formal contract documentation. Representation of progress on individual elements shall depend on the nature of the works. The progress of each major operation shall be reported individually, and marked-up diagrams used to show the comparison of work actually completed with programmed completion. This clear diagram presentation supplements the activity progress information given in the tabular schedule reports and bar charts;
  14. Assessment of works satisfactorily carried out as required by the payment schedule and certify interim (milestones) and final payment certificates for consideration by the Employer. Interim payment certificates to be submitted to the Employer for payment purposes shall include the total cost of the works due as per the contract. Payment amount will be determined by establishing the value of work done using rates and prices given in the Bill of Quantities (BoQ). Additional payments to the Contractors arising from variations, claims or other additional work will also be included when the Contractors have a right to such payment under the contract;
  15. Preparing Interim Payment Certificates, Final Payment Certificates, Taking Over Certificates, and Performance Certificates, to the timing of, and as required by, the contract, and advising the Employer on the release of all contractors' securities and retentions.
  16. Foresee possible problems and advise the Employer appropriately during the construction.
  17. Detection of inconsistencies and defects during the construction works, making visual capturing of any such defects/inconsistencies and informing the Employer;
  18. Monitoring the performance of hidden works and certifying relevant acts (acts of hidden works).
  19. Record, examine and evaluate all claims submitted by the Contractor and submit timely recommendations thereof for Employer.
  20. If necessary, submit substantiated proposals to the Employer on the expediency and necessity of making changes in the project and the cost estimate of the works to be performed at the initiative of the Consultant and / or the Contractor.
  21. Review Variation Orders, determine its reasonability and recommend to Employer on their implementation
  22. Maintain a site diary (log) on a daily basis with the contents and format to be agreed with the Employer. Site diaries shall record all events pertaining to administration of contracts, instructions issued to the Contractor, pertinent requests from the Contractor and any other information which will be of assistance in resolving any

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dispute or claims. The site diary shall include the daily diary sheets from members of the supervision staff, and instructions and observations made by the representative of the Employer during any of his site visits;

23. Assist the Employer in the approval process of the final construction report, as-built drawings and maintenance manuals;

Seek prior written approval from the Employer before taking action under the following Sub-Clauses of the Particular Conditions governing the CW's contract:

- (a) Sub-Clause 2.1: Deviations from the recommended route
- (b) Sub-Clause 3.4: Delegation by the Engineer
- (c) Sub-Clause 5.1: Subcontractors
- (d) Sub-Clause 4.12: agreeing or determining an extension of time and/or additional cost
- (e) Sub-Clause 4.26: defining the periods for milestones
- (f) Sub-Clause 8.5: Extension of Time for Completion
- (g) Sub-Clause 8.9: Employer's Suspension
- (h) Sub-Clause 13.1: Right to vary - instructing a variation, except:
  - (i) in an emergency situation as determined by the Engineer; or
  - (ii) if such a Variation would increase the Accepted Contract Amount by less than the percentage specified in the Contract Data.
- (i) Sub-Clause 13.2 (Value Engineering): stating consent or otherwise to a value engineering proposal submitted by the Contractor in accordance with Sub-Clause 13.2.
- (j) Sub-Clause 13.3: approving a proposal for variation submitted by the Contractor in accordance with Sub-Clause 13.1 or 13.2

Notwithstanding the obligation, as set out above, to obtain consent in writing, if, in the opinion of the Consultant, an emergency occurs affecting the safety of life or of the Works or of adjoining property, it may, without relieving the Contractor of any of his duties and responsibility under the Contract, instruct the Contractor to execute all such work or to do all such things as may, in the opinion of the Engineer, be necessary to abate or reduce the risk. The Contractor shall forthwith comply, despite the absence of consent of the Employer, with any such instruction of the Engineer. The Engineer shall determine an addition to the Contract Price, in respect of such instruction, and Extension of Time (EOT) if any, in accordance with Clause 13 of FIDIC Red Book and shall notify the Contractor accordingly, with a copy to the Employer.

24. Upon completion of the work, to present the Employer with high quality final photographs of all manholes, access and aggregation points and ducts attached to the bridges with wide-view and corresponding coordinates (latitude / longitude).
25. Obtain the as built designs from the Contractor, Review, and approve them in

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accordance with the Annex 5 “Design Specifications”, and hand them over to the employer.

#### **E. Supervising test work**

The Consultant shall, according to the provisions of the laws and regulations regarding the control of the quality of the works:

1. Review and approve the program of testing the quality of the executed works, as prepared by the contractor, and be present and supervise performance for those tests.
2. Randomly conduct measurements to verify that the results of the contractor’s tests on fiber optic (FO) cable meet the technical requirements of the Employer;
3. In case of necessity to perform the measurements requested by the Employer;
4. Issue reports regarding the observed quality of the executed works and recommend actions to be taken in the case of unsatisfactory result.

The FO cable measurements to be performed by the consultant shall be conducted by using their own equipment.

#### **F. DATA, SERVICES AND FACILITIES TO BE PROVIDED BY EMPLOYER**

The Employer will provide the Consultant with the contract(s) for the civil work along with all the design, drawings, specifications, etc.

The Employer will assist the Consultant to:

- (i) Obtain entry and working visas for the members of the supervision team;

#### **G. REPORTING REQUIREMENTS**

The Consultant shall prepare and submit reports described in this section. All reports shall be prepared in English, with executive summaries in both English and Georgian. In addition, electronic version of each report, in an open format ready for editing, shall be submitted.

##### **G.1. Inception Report**

The Inception Report will illustrate the planning that the Consultant has established for the assignment. It will also describe the staffing and remarks of the Consultant regarding the assignment as deemed appropriate. This Report will outline how the Consultant intends to implement the project, clearly differentiating between the activities for supervision of the construction. The Inception Report must be submitted within two weeks from the approval of the project Design by the Consultant and based on the work plan of the Contractor.

##### **G.2. Weekly Reports**

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The Consultant shall prepare progress reports every week for the duration of the contract. These should be uploaded on Monday of each week (in case it is a public holiday in Georgia, on next working day) in the cloud drive provided by the Employer.

The format and the context of the weekly progress reports shall be provided by the Employer. They will include, but not be limited to the following:

1. Useful information regarding the implementation of the contract allowing a technical and financial follow-up of the project;
2. Recording of any agreed changes on the original envisaged technical solutions;
3. Any changes of quantities compared to contracted BoQ;
4. Instruction/suggestions for resolution of any technical and other problems (a separate section will be given to cover issues, problems, and solutions) that occur and those affecting the progress of the work such as variation orders and claims to the Contractor;
5. Progress charts including percentages of completion of individual main work items and overall project/contract.
6. Status of the application of environmental and social impact mitigation measures provided in the ESMPs.
7. Information on Contractor's adherence to health and safety standards and anti-corruption measures.
8. Accident numbers and severity (fatalities and serious injuries), any road safety issues identified, and steps taken to address them.
9. Annexes, including Minutes of Meetings (if any), site geotagged photos, etc.

Item (8) of the report shall identify areas of the Contractors' non-compliance and provide guiding remarks on the actions to be taken. The significance of the non-compliance should also be noted. Any areas of persistent non-compliance or negligence by the Contractors shall be compiled in the quarterly reports. If appropriate, and upon the advice of the Consultant, the Employer may introduce a sliding scale of fines to be applied for repeated poor performance assessments of the Contractors.

### **G.3. Works Completion Report**

The Consultant shall submit the Works Completion Report within 1 (one) month of completion of the works.

The report shall include a summary of the whole project, including principal difficulties encountered during construction and means employed to overcome them, changes (if any) made in the original design, modifications to specifications and conditions of the contract, all variation orders, assessment of contractor's claims, utilization of provisional sums, price variation and physical contingency sums, cumulative payments to the contractor, by date and number of payment certificate and break down into foreign and local currencies and including a similar payment schedule for supervision services. The details of the overall project costs (construction and supervision) with justification for any significant differences with the original shall be given in the final report. All necessary approvals by

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the Employer shall be attached. The report shall include a separate section on the proposed future maintenance activities and related arrangements for the section supervised (i.e., maintenance manuals).

#### H. CONSULTANT'S QUALIFICATION

In order to execute its obligations, the Consultant must have experience working as supervisor/engineer (Engineer on a project that used FIDIC contract), on at least one contract of civil works with a minimum value of 5,000,000 USD from January 1, 2018, till the Expression of Interest submission deadline date.

In order to properly undertake the supervision of the works, the Consultant shall be expected to field qualified key staff, headed by a Project Manager. The supervision team shall include the following key staff: two (2) Team Leaders and six (6) Civil/fiber optic Supervisors (out of which at least two (2) should be fiber optic works supervisors). The proposed Project Manager and Supervision Team should not be employed under any other contract with the Employer.

1. **Project Manager:** must have at least a Bachelor's degree in Management or a related field, at least three (3) years of experience in Construction Project Management, and have experience in working with FIDIC Red Book for at least 1 contract. Shall have full responsibility for all technical and administrative aspects required for the project duration, be fluent in English and Georgian.
2. **Team Leader:** must have an Engineering Degree (at least Bachelor's degree or equivalent) in telecommunications, electromechanics, electricity or a similar field, with at least five (5) years of experience in the management and control of fiber optic network construction or in the management and control of linear construction.
3. **Civil Engineering Supervisors,** Civil Engineering degree (at least a Bachelor's degree or equivalent) with three (3) years of experience in the control and management of civil engineering works.
4. **Supervisors of fiber optic works:** Engineer in telecommunications, electromechanics, electricity or similar field with at least 4 years of higher education with at least three (3) years' experience in the installation, measurement, and calibration of optical (passive/fiber optic) networks.

In addition to the key personnel designated above, the Consultant shall determine the local support technical staff requirements for the assignment (engineers, structural engineers, works supervisors/inspectors, surveyors, laboratory technicians, secretarial, environmental, social, and health and safety specialist etc.) to assist with on-site supervision of the works.

The above staffing is an indication of the requirements, but the consulting firm has the ultimate responsibility to staff the supervision team adequately to take full responsibility for quality of the works and timely implementation. The realism of the overall staffing



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proposed will be a factor in the technical evaluation of the Consultant's proposal. The Consultant must provide Curriculum Vitae (CV) and certified copies of highest education certificates for all key staff in the proposal, including duration in man-months for which the staff will be deployed under the contract. The Consultant is not required to submit CVs of support staff within his proposal.

## I. DURATION OF SERVICES

The engagement shall be deemed to have started on execution of the agreement for construction supervision and shall terminate at the completion of the construction works, when the final inspection of the works has been done and the Consultant has fulfilled all his obligations.

The estimated duration of the services is 11 months.

In view of the tasks to be achieved, it is anticipated that staff input will be 99 key-staff months, as follows:

Staffing Input in staff-months:

<b>Staffing</b>	<b>Input in staff-months</b>
1. Project Manager	11 staff-months
2. Team Leader	11 staff-months per specialist
3. Civil Engineering Supervisor	11 staff-months per specialist
4. Supervisor of fiber optic works	11 staff-months per specialist

The Consultant is required to review, adapt, and rationalize the outlined staff input in his proposal, such that there will be as much continuity of employment as is practicable in the teams it proposes to assign. The Consultant should consider the prospective peaks of construction activity and ensure the adequacy of staffing levels during such periods, and, at the same time, periods with low productivity levels should not be un-economically over-staffed. The objective is that the Consultant should propose to assign a team that will be best suited to the methodology of its supervision and management systems. The Consultant should also consider the added value that will be provided by its organization.

The Consultant shall work according to the Contractor's work schedule, which may include work during 7 (seven) days a week. Nightshifts may be expected as well. The Consultant will not be entitled to any overtime payment.