

## **Terms of reference (TOR)**

### **BACKGROUND**

The National Election Board of Ethiopia (NEBE) is an autonomous government agency, which supervises the national elections of Ethiopia. The NEBE was established by Proclamation number 64/1992, and answers to the House of Peoples' Representatives.

The National Election Board of Ethiopia (NEBE) is moving to a new office located around Flamingo. The NEBE compound has main building (G +5), two annexes and a security spot on the main gate. We would like to contract an experienced network installation company for Provision, Installation, and Testing of a Structured Network, Telephone and Power cabling for this office after conducting an extensive assessment of the requirement. Currently the office is under innovation and the installation work would be done simultaneously.

### **OBJECTIVE**

The Project Aims to Design, Supply, Install and Delivery of structured Network, Telephone and UPS Power infrastructure for the NEBE's office. The structured cabling system, power and communication facility shall:

Provide user friendly environment with efficient, less technical support and open to performance upgrade/future expansion and can accommodate efficiently all data transmission service to the workstations;

Facilitate efficient communication;

Provide high-speed network connectivity to every floor of the main building and annexes;

Provide voice-cabling system to provide efficient telephone switching system.

### **SCOPE OF WORK**

The contractor will be responsible for the design, supply, installation and delivery of structured network, telephone and UPS power infrastructure for the above-mentioned office site in accordance with the requirements stated in this document. The contractor is expected to propose and submit a comprehensive structured cabling solution by analyzing the requirement, provide the necessary materials as indicated in the bill of materials and carry out the installation work as per proposal. The Scope of work is limited to structural cable installation and does not include provision and configuration of the network and telephone equipment. The number of nodes for Data, Telephone and UPS Power is determined to be 234, 138 and 137 respectively. The detail location of these nodes are indicated on the floor Diagram which will be annexed.

The Data center and Telephone PBX rooms are located on the ground floor. The Data center houses the Central UPS, network equipment Such as core Switch, Router, ISP internet link, Servers and other network peripherals. The network cables will be terminated on patch panels in wiring cabinet, which will be installed on each floor. Fiber cable will be used a backbone cable to connect the Access switches on each floor to the core Switch in the data center. Similarly, the telephone cables will be terminated on the TDFs on each floor and they will be connected to patches in the PBX room. The Power cables will be connected to the central UPS in the data center.

## **DELIVERABLES**

Analyze and identify the structured cabling requirement of the NEBE office and propose a comprehensive cabling solution. Contractor shall submit detailed scope of work for proposed solution. This shall include all wiring diagrams, description of materials to be used to produce the structured cabling infrastructure and timeline for major tasks of the Work.

Supply and install a Fiber cable to connect core and access switches on each floor in the building and annex offices in compound. The fiber cable should be installed redundantly to maximize the reliability.

Supply and install CAT6 UTP cable (full copper) that will be used for horizontal cabling from each wiring closet to each endpoint.

Supply and install (CAT 3 telephone cable) that extend from PABX room to every wiring closet.

Supply and install power cables which will be terminated from UPS in the server room to user ports

Supply and install a single PVC trunk for all Network and Power cables, which is clearly separated by a partition.

Centralize CAT6 and CAT3 outlets in a patch panel located in its respective floor.

Supply and install the necessary outlets for Data, Voice and UPS power, which is mounted strictly only on the plastic trunk.

Install additional nodes to be used for security camera.

Supply and install separation partitions, duct covers, flat angles, external and internal angles, end caps, drilling and chiseling of walls for pulling cables, plastering and paintings of wall as necessary.

Install wiring cabinet (available in house), install patch panels in the wiring closet, terminate both voice and data cables on the patch panel, label the nodes both at the user and on the patch panel end.

Keep the existing electrical wiring in the new NEBE office and install a separate UPS supplies to selected outlets.

Shall remove the old ducts and cables, seal the holes and finally paint wall in accordance to the original color code. The contractor should also consider properly rearranging the old cables and ducts in a proper manner in warehouse to be indicated by NEBE.

Properly identify and label both ends of voice, power and data cables.

Test and verify that each and every LAN, power and voice points are working.

Submit detailed documentation of the installation, termination and labels of data, voice and power cabling.

Provide 1-year service guarantee after the acceptance test.

#### **CABLING & EQUIPMENT STANDARDS**

Cabling Standard Comply to:-

ISO/IEC 11801:2002: International Standard for generic cabling for customer premises

EIA/TIA 568B: Commercial Building Telecommunications Cabling Standard (2002)

EIA/TIA 568B.2-1: Commercial Building Telecommunication Cabling Standard (2002).

#### **DELIVERY PERIOD:**

The work has to be completed in not more than five working weeks latest.

Minimum organization and key personnel requirements

Additional Remark /Conditions

A site visit must be done to discuss necessary technical details and the requirement.

#### **SPECIFY THE BRAND OF MATERIALS SUPPLIED.**

The quality of the installation is subjected to ongoing inspection as project progresses.

The contractor's staff shall not work on any energized circuit during installation or alteration. Circuits shall only be energized on completion when it has been tested and shown to be safe, and does not constitute a hazard to NEBE or the contractor's staff.

#### **TECHNICAL EVALUATION**

Summary of Technical and Fianacial Proposal Evaluation Forms		Score Weight	Points Obtainabl e
<b>1</b>	Expertise of Firm / Organization	30%	300
<b>2</b>	Proposed Methodology, Approach and Implementation Plan	20%	400
<b>3</b>	Management Structure and Key Personnel	20%	300
	<b>TOTAL</b>	<b>70%</b>	<b>1000</b>
<b>Technical Proposal Evaluation (FORM I)</b>			
<b>Expertise of the Firm / Organization</b>			<b>Points Obtainabl e</b>
<b>1.1</b>	Reputation of Organization and Staff / Credibility / Reliability / Industry Standing		<b>50</b>
<b>1.2</b>	General Organizational Capability which is likely to affect implementation		<b>90</b>
	- Financial Stability		
	- Loose consortium, Holding company or One firm		
	- Age/size of the firm		
	- Strength of the Project Management Support		
	- Project Financing Capacity		
	- Project Management Control		<b>15</b>
<b>1.3</b>	Extent to which any work would be subcontracted (subcontracting carries additional risks which may affect project implementation, but properly done it offers a chance to access specialized skills.)		
<b>1.4</b>	Quality assurance procedure, warranty		<b>25</b>
<b>1.5</b>	Relevance of:		<b>120</b>
	- Specialized Knowledge		
	- Experience on Similar Programme / Projects		
	- Experience on Projects in the Region		
	- Work for UNDP/ major multilateral/ or bilateral programmes		
	<b>SUB TOTAL</b>		<b>300</b>
<b>Technical Proposal Evaluation (FORM II)</b>			
<b>Proposed Methodology, Approach and Implementation Plan</b>			
<b>2.1</b>	To what degree does the Proposer understand the task?		<b>30</b>
<b>2.2</b>	Have the important aspects of the task been addressed in sufficient detail?		<b>25</b>
<b>2.3</b>	Are the different components of the project adequately weighted relative to one another?		<b>20</b>
<b>2.4</b>	Is the proposal based on a survey of the project environment and was this data input properly used in the preparation of the proposal?		<b>55</b>
<b>2.5</b>	Is the conceptual framework adopted appropriate for the task?		<b>65</b>
<b>2.6</b>	Is the scope of task well defined and does it correspond to the TOR?		<b>120</b>
<b>2.7</b>	Is the presentation clear and is the sequence of activities and the planning logical, realistic and promise efficient implementation to the project?		<b>85</b>
	<b>SUB TOTAL</b>		<b>400</b>
<b>Technical Proposal Evaluation (FORM III)</b>			

Management Structure and Key Personnel		
<b>3.1</b>	<b>Task/Project Manager / Team Leader /</b>	
	General Qualification	
	Suitability for the Project	
	Must be Project management certified and up to date;	<b>25</b>
	MSc Degree in Computer Science degree or similarly related;	<b>15</b>
	Ten (10) Years similar work experience;	<b>35</b>
	Demonstrate technical ability managing similar projects	<b>30</b>
	<b>SUB TOTAL (A)</b>	<b>105</b>
<b>3.2</b>	<b>Computer Engineer</b>	
	General Qualification	
	Suitability for the project	
	Must be certified Network Cable Installer	<b>25</b>
	BSc in Computer Science Degree or higher;	<b>15</b>
	Six (6) years working experience in Network Cabling and Network infrastructure development).	<b>35</b>
	<b>SUB TOTAL (B)</b>	<b>75</b>
<b>3.3</b>	<b>Electrical Engineer</b>	
	General Qualification	
	Suitability for the project	
	Certifications of Electrical Engineers	<b>15</b>
	BSc in Electrical Engineering or higher;	<b>20</b>
	Six (6) years working experience in Electrical Cabling and Electrical infrastructure Development	<b>25</b>
	<b>SUB TOTAL (C)</b>	<b>60</b>
<b>3.4</b>	<b>Telecom Engineer</b>	
	General Qualification	
	Suitability for the project	
	BSc in Telecommunication Engineering / BSC Computer Science Degree or higher or Related fields;	<b>20</b>
	Eight (8) years working experience in installing and supporting telecommunication systems	<b>25</b>
	Telecom certifications is an advantage	<b>15</b>
	<b>SUB TOTAL (D)</b>	<b>60</b>
	<b>SUB TOTAL (A+B+C+D)</b>	<b>300</b>

### Bill of quantity (BOQ)

Board of election Data, Wi-Fi, Telephone and power number					
NO	FLOOR	DATA	TELEPHONE	Wi-Fi	POWER
1	Ground Floor	32	17	2	18
2	1st	34	23	2	18
3	2nd	34	23	2	18
4	3rd	27	15	2	24
5	4th	36	32	2	20
6	5th	42	19	3	32
7	cafeteria		2	2	
8	Annex	12	5		5
9	Gate	2	2		2
<b>Total</b>		219	138	15	137

Data BOM				
No	Item	Unit	Brand indicated or equivalent	qty
1	UTP cable full copper	psc	BMT	65
2	UTP patch panel 24 core	pcs		10
	UTP patch panel 48 core	pcs		2
3	cable tai 50cm	pcs	3M	15
4	cat6 out late Rj45 with frame	pcs	GET/Legrand/MK	224
5	Trunk 100x50x3partition	pcs	MTULSAN or Equivalent	650
6	Trunk connector Inner	pcs	GET/Legrand/MK	45
7	Trunk connector outer	pcs	GET/Legrand/MK	34
8	Trunk connector end cup	pcs	GET/Legrand/MK	12
9	Trunk connector L cup	pcs	GET/Legrand/MK	5
10	UTP patch cord 0.5m Full copper	pcs	GET/Legrand/MK	234
11	UTP patch cord 1m Full copper	pcs	GET/Legrand/MK	34
12	UTP patch cord 3m Full copper	pcs	GET/Legrand/MK	150
13	UTP patch cord 6m Full copper	pcs	GET/Legrand/MK	50

Voice BOM				
No	Item	Unit	Brand indicated or equivalent	qty
1	50 pair Telephone cable	m		120
2	TDF 50	pcs		6
3	cat6 out late Rj11 with frame	pcs	GET/Legrand/MK	138
4	Telephone patch cord 3m	pcs		100
5	Telephone patch cord 5m			38

Fiber BOM				
No	Item	Unit	Brand indicated or equivalent	qty
1	Fiber optic cable 12 core Single Mode	m	Legrand Or Equivalent	1250
3	pig tile LC single mode	pcs	Legrand Or Equivalent	336
4	Splicing slave	pcs		350
5	patch cord 1-meter LC to LC	pcs	Legrand Or Equivalent	50
6	patch cord 20-meter LC to LC	pcs	Legrand Or Equivalent	20
7	fiber patch panel 24 core LC	pcs	Legrand Or Equivalent	13
8	HDP	m		200
9	Galvanized pipe	m		50

Power BOM				
No	Item	Unit	Brand indicated or equivalent	qty
1	Power cable 10x5	m	BMT	150
2	Power cable 3x2.5	m	BMT	1385
3	Breaker 25AM	psc	Regrind	47
4	Breaker 65AM	pcs	Regrind	7
5	Board	pcs	Regrind	7
6	Installation Tape	pcs		30
7	power outlet single Socket	pcs	Gunsan	139

N.B.

- If the Vendor is importing the materials the vendor shall offer the price of the materials incoterm to be applicable shall be **CIP Addis Ababa**. UNDP shall take care of the clearance process and deliver to the installation site
- Vendors after their assessment can revise the required qty of the materials