ICT Authority
Telposta Towers 12th Floor, Kenyatta Ave
PO Box 27150 - 00100 Nairobi Kenya
Tel: +254 20 2089061
www.icta.go.ke

# ADDENDUM NO. 2

**TENDER NO. ICTA/OT/27/2021-2022** **15th June, 2022**

**TENDER NAME: Connectivity of Schools to Internet**

| # | ITEM DESCRIPTION | ICTA RESPONSE/CLARIFICATION |
|---|---|---|
| 1. | a) Can you Provide a schematic Diagram Per school to understand and offer best products , considering the future of 10GEPON , POE in ONU's , Ring protection in Outdoor Switches etc.<br>b) Item 4 -8 of the technical requirements – IEEE Standard for Ethernet SFP's are 1G – can you advise if we can provide SFP's which is comm across all vendors , instead of 1.25G SFP<br>c) Item 12 – the Wireless AP has POE-IN or POE-Out ? if this is POE-IN , ONU in item 20 should have POE ports to connect Wireless AP or the ONU in item 20 should have Wifi6 matching the AP's .<br>d) Item 2 IP Switch – Is out understanding correct - (4 10/100/1000 BASE-T(X) RJ45 ports and 4 1000 BASE-X SFP slots. 3. Up to 4 802.3af/ 802.3at Power over Ethernet ports, with maximum 30W ) – in total 12 Ports , 4 with POE, 4 Without POE and 4 SFP + based<br>e) Item 3 IP Router – Should a Layer 3 Switch which supports the mentioned Protocols is acceptable as the name suggests Router, the Specification is based on a "Layer 3 Industrial Switch" | A. In PDF attachment<br>B. The minimum specification for SFP Data Rate is 1.25G.<br>C. The specifications for the AP are amended to include:<br>10. Power: 240v/60hz AC<br>11. POE-IN<br>D. The specifications for the IP switch are amended as follows:<br>2. 4 10/100/1000 BASE-T(X) RJ45 with POE (802.3af/at)<br>ports and 4 1000 BASE-X SFP slots.<br>3. Deleted<br>E. 4 x RJ45 with POE and 4 with SFP slots<br>F. The bidder should quote for IP router that supports the given specifications |
| 2. | In the price schedule, you've only listed 48 core OFC ADSS-Cable. Kindly note there are no accessories to install this cable. Therefore I suggest amendment of price schedule to cater for accessories. | The bidder is advised to quote for items with all associated accessories as per requirements which will assist the bidder in installation. |
| 3. | No.8 Supply and Install of 1.25G 80KM Single Mode SFP, the spec says "Wavelength: 1310-nm". We think the Wavelength should be 1550 nm because of the 80km distance. | The specifications for the IP switch are amended as follows:<br>2. Wavelength: 1550/1310nm |
| 4. | We note that you have requested higher port density on the router than on the switch. Please give deployment scenarios and confirm if the | The routers will be used as aggregation points for multiple schools before uplinking to NOFBI.<br><br>2. Routed port |

ICT Authority
Telposta Towers 12th Floor, Kenyatta Ave
PO Box 27150 - 00100 Nairobi Kenya
Tel: +254 20 2089061
www.icta.go.ke

| | | |
|---|---|---|
| | 24x1000 Base-X SFP ports should be switched or routed ports?<br><br>Confirm if NAT functionality is required for the router or just Layer 3 routing | 3. NAT is standard for routers |

| NO. | Broad Feature | Specifications | page | Query | Clarification |
|---|---|---|---|---|---|
| | These are components that will form part of the Communications network | | | | |
| 5 | Supply and Install of an IP switch | 1. Industrial Grade Hardware<br>2. 4 10/100/1000 BASE-T(X) RJ45 ports and 4 1000 BASE-X SFP slots.<br>3. Up to 4 802.3af/ 802.3at Power over Ethernet ports, with maximum 30W<br>4. PoE/PoE+ power per port and maximum 120 W device power budget.<br>5. Layer-2 Redundancy, with ERPS, RSTP, MSTP, G.8032 with 4 instances<br>6. Flow control, VLAN port, 802.1q and Q-in-Q, QoS 802.1p w 8 queues, Port trunking LACP<br>7. IGMP snooping v1/v2/v3<br>8. Mounting: DIN rail, wall mount option<br>9. Working temperature: -20 to 70C°<br>10. EN50121-4, EN50155<br>11. Minimum IP30 protection ratingvity | 38 | Does the term industrial Grade refer to the general Telecommunication industry standards or specifically industrial switches built for operation in harsh industrial environments like Oil rigs, railways, manufacturing plants etc? Can Standard commercial switches matching required IP rating and envrionemental requirement suffice? | Industrial grade refers to standard telecommunication equipment |

ICT Authority
Telposta Towers 12th Floor, Kenyatta Ave
PO Box 27150 - 00100 Nairobi Kenya
Tel: +254 20 2089061
www.icta.go.ke

| NO. | Broad Feature | Specifications | page | Query | Clarification |
|---|---|---|---|---|---|
| 6 | Supply and Install of an IP Router | 1. Industrial Grade Hardware 2. At least 4 10/100/1000 BASE T(X) RJ45 ports and 24 1000 BASE-X SFP slots. 3. Up to 4 802.3af/ 802.3at Power over Ethernet ports, with maximum 30W 4. PoE/PoE+ power per port and maximum 120 W device power budget. 5. Layer-3 Switching, supporting IPv4 Static, RIPv1/v2 and OSPFv2 | 38 | These requirement seem to be for a network switch, for 24 1000 Base-X SFP slots. Layer 3 switching. Can we propose a standard Network router for the school connectivity scenario? Fixed WAN ports : 2 x GE combo, 1 x 10GE SFP+(compatible with GESFP) , Fized LAN ports : 1 x GEcombo, 8 xGE RJ45(can be configured as WAN) | The bidder should quote for IP router that supports the given specifications |
| 7 | Supply and Install of 1.25G 2KM Single Mode SFP | 1. Data Rate: 1.25Gb/s 2. Wavelength: 1310-nm 3. Reach: up to 2 km 4. Fiber Type: Dual LC single-mode fiber 5. Compatibility with all major switch and router vendors | 38 | Can propose a 10G long range SFP? | Minimum requirement is 1.25G. There is no maximum requirement |
| 8 | Supply and Install of 1.25G 10KM Single Mode SFP | 1. Data Rate: 1.25Gb/s 2. Wavelength: 1310-nm 3. Reach: up to 10 km 4. Fiber Type: Dual LC single-mode fiber 5. Compatibility with all major switch and router vendors | 38 | | |
| 9 | Supply and Install of 1.25G 20KM Single Mode SFP | 1. Data Rate: 1.25Gb/s 2. Wavelength: 1310-nm 3. Reach: up to 20 km 4. Fiber Type: Dual LC single-mode fiber 5. Compatibility with all | 38 | Can propose a 40G long range SFP? | Minimum requirment is 1.25G. There is no maximum requirement |

ICT Authority
Telposta Towers 12th Floor, Kenyatta Ave
PO Box 27150 - 00100 Nairobi Kenya
Tel: +254 20 2089061
www.icta.go.ke

| NO. | Broad Feature | Specifications | page | Query | Clarification |
|---|---|---|---|---|---|
| | | major switch and router vendors | | | |
| 10 | Supply and Install Optical Network Unit | 1. Rate (Gbps) Uplink: 1.244 Downlink: 1.244 2. PON Interface 1 GPON/EPON port (EPON PX20+ and GPON Class B+) 3. Optical Output Power (dBm) 0~4 4. Receiving Sensitivity (dBm) -28 5. Receiving Satiability (dBm) -3 6. PON Interface 1xSC/APC optical port 7. Data Interface 1x10/100/1000M and 1x10/100M RJ45 port 8. POTS Interface 1xVoIP port | 38 | Is this an indoor ONU ? | 1. The ONU is indoor |
| 11 | Supply and Install Passive Optical Splitter 1:2 | 1. Operating Wavelength (nm) 1260~1650 2. Insertion Loss (dB) ≤13.5 3. Loss Uniformity (dB) ≤1.2 4. Return Loss (dB) ≥50 (UPC) ≥55 (APC) 5. Wavelength Dependent Loss (dB) ≤1.0 6. Pigtail Length (m) 1.0 (±0.1) 7. Splitter 1:2 | 38 | Can we propose rack mounted indoor splitters or the scenario is outdoor | The bidder should quote for indoor racks |
| 12 | Supply and Install Passive Optical Splitter 1:4 | 1. Operating Wavelength (nm) 1260~1650 2. Insertion Loss (dB) ≤13.5 3. Loss Uniformity (dB) ≤1.2 4. Return Loss (dB) ≥50 (UPC) ≥55 (APC) 5. Wavelength Dependent Loss (dB) ≤1.0 6. Pigtail Length (m) 1.0 (±0.1) 7. Splitter 1:2 | 38 | Can we propose rack mounted indoor splitters or the scenario is outdoor | The bidder should quote for indoor racks |

ICT Authority
Telposta Towers 12th Floor, Kenyatta Ave
PO Box 27150 - 00100 Nairobi Kenya
Tel: +254 20 2089061
www.icta.go.ke

| NO. | Broad Feature | Specifications | page | Query | Clarification |
|---|---|---|---|---|---|
| 13 | Supply and Install Passive Optical Splitter 1:8 | 1. Operating Wavelength (nm) 1260~1650 2. Insertion Loss (dB) ≤13.5 3. Loss Uniformity (dB) ≤1.2 4. Return Loss (dB) ≥50 (UPC) ≥55 (APC) 5. Wavelength Dependent Loss (dB) ≤1.0 6. Pigtail Length (m) 1.0 (±0.1) 7. Splitter 1:8 | 38 | Can we propose rack mounted indoor splitters or the scenario is outdoor | The bidder should quote for indoor racks |
| 14 | Supply and Install Optical Line Terminal 4 PON | 1. ITU-TG.984.x standard 2. Maximum transmission distance of 20KM 3. Maximum 128 ONTs 4. Uplink FEC, downlink FEC (Forward Error Correction) 5. Periodically update AES encryption 6. ONU identifier authentication: SN/PASSWD/SN+PASSWD 7. Dynamic Bandwidth Allocation 8. Standard OMCI functionL2 9. OLT supports HGU bind profile configuration 10. Switching Capacity (Gbps) 68 11. Throughput (IPv4/IPv6) (Mbps) 50.59 12. Ports 4 x PON ports, 1 x GE/10GE SFP+ ports 13. Power Consumption (W) ≤ 45 14. Redundancy Dual power supply (double AC, double DC or AC+DC) | 38 | Can provide equipment with GPON interface ? | The bidder should quote as per specifications |

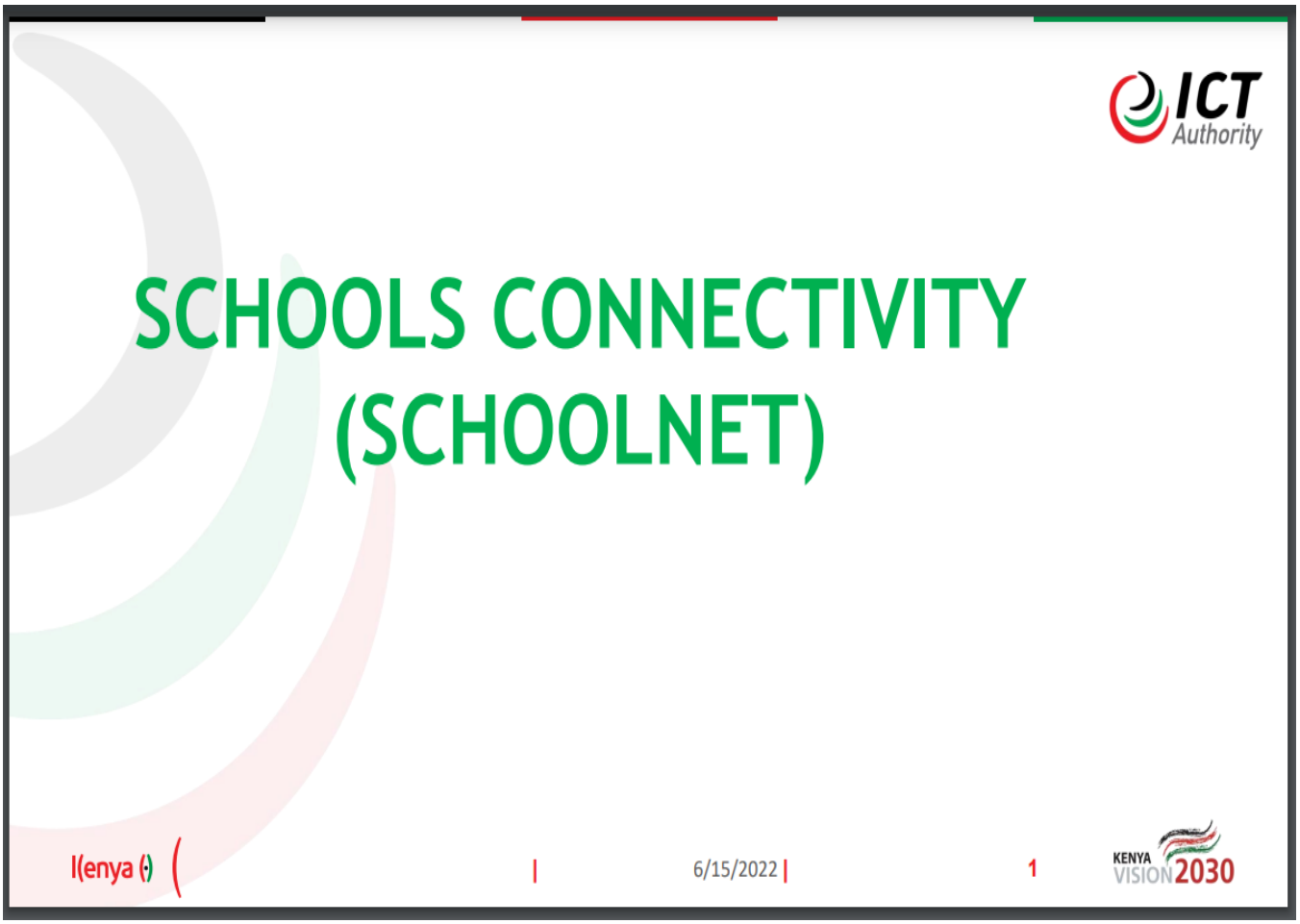
ICT Authority
Telposta Towers 12th Floor, Kenyatta Ave
PO Box 27150 - 00100 Nairobi Kenya
Tel: +254 20 2089061
www.icta.go.ke

| NO. | Broad Feature | Specifications | page | Query | Clarification |
|---|---|---|---|---|---|
| 15 | Supply and Install Optical Line Terminal 8 PON | 1. ITU-TG.984.x standard 2. Maximum transmission distance of 20KM 3. Maximum 128 ONTs 4. Uplink FEC, downlink FEC (Forward Error Correction) 5. Periodically update AES encryption 6. ONU identifier authentication: SN/PASSWD/SN+PASSWD 7. Dynamic Bandwidth Allocation 8. Standard OMCI functionL2 9. OLT supports HGU bind profile configuration 10. Switching Capacity (Gbps) 68 11. Throughput (IPv4/IPv6) (Mbps) 50.59 12. Ports 8 x PON ports, 1 x GE/10GE SFP+ ports 13. Power Consumption (W) ≤ 45 14. Redundancy Dual power supply (double AC, double DC or AC+DC) | | Can provide equipment with GPON interface ? | The bidder should quote as per specifications |
| 16 | Warranty | 2 year | | Does this mean 2 years technical support? | Warranty is for equipment support, replacement and repair |

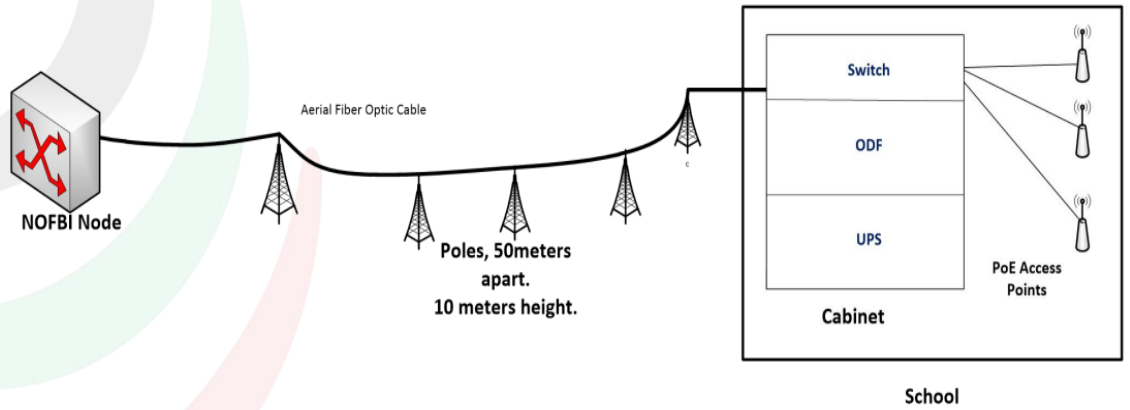
**The addendum & clarification form part of the bidding document and is binding on all bidders. All other terms and conditions of the tender remain the same.**

**CEO, ICT Authority**

ICT Authority
Telposta Towers 12th Floor, Kenyatta Ave
PO Box 27150 - 00100 Nairobi Kenya
Tel: +254 20 2089061
www.icta.go.ke



# 1. Router + switch high level schematic






# THE END