# Annexure -I

**Establishment of ICT Infrastructure at KP-TEVTA Head Office**

Principal's office in Pakistan is mandatory.

| S# | Items | Specification | QTY |
|---|---|---|---|
| 1 | HighEndRack Mountable Server Dell/ HP / Or Equivalent | Chassis 2U with up to 16 x 2.5" SAS/SATA Hard Drives for 2CPU Configuration, Dual Intel Xeon 4216 , 16 Cores or Higher , 128GB (32GB X4 )RDIMM , 2666 MT/s Dual Rank , PERC H730P RAID Controller Or equivalant , 2 GB NV Cache , Low Profile ,6 X 800GB SSD SAS Mix Use 12Gbps 512e 2.5in Hot-plug AG Drive, 3 DWPD,4380 TBW, 6X 1.2TB SAS 10 K RPM self Encrypting 12GBps 2.5In Hot Plug FIPS140, iDRAC 9 Enterprise , Broadcom 57416 Dual Port 10GbE BASE-T & 5720 Dual Port 1GbE BASE-T, rNDC, Dual Hot Plug PowerSupply (1+ 1 ) 750Watts , Ready Rails Sliding Rails With Cable Management , DVD +/- RW SATA , SSL certificates License, 5 Years Warranty Including Onsite preventive maintenance. | 3 No. |
| 2 | 48 Port Switch or Higher RUCKUS / Cisco or Equivalent | 48x 10/100/1000 PoE+ ports, 2x 1G RJ45 uplink-ports, 4x 1G SFP uplink ports upgradable to up to 4x 10G SFP+ with license, 370W PoE budget, basic L3 (static routing and RIP) 3 Years Warranty . 9U imported Cabinet and 1 KVA UPS .Or equivalent. | 4 Nos. |
| 3 | 24 Port Switch or Higher RUCKUS / Cisco Or Equivalent | 24x 1G SFP, 2x 1G RJ45 uplink-ports, 4x 1G SFP uplink-ports Layer 3, Minimum 4 SFPs Included ,9U imported cabinet and 1 KVA UPS or Equivalent | 1 No. |
| 4 | ROUTER | Minimum ONE RJ45 console port, one USB interface, minimum three 1000M WAN ports        (1000M SFP interface), 8GE 1000M LAN port, two RM2B slots, AC power Redundant , Patch Cords , Console Cables  Or Higher | 1 NO. |
| 5 | Fortinet / CISO / Sangfor/FortiGateirewall Or Equivalent | • Must Have Minimum 5Gbps NGFW Throughput (FW + SA + IPS)<br>• Must Have Minimum 4Gbps Threat Protection Throughput (FW + SA + IPS + Antivirus)<br>• Must Have Unrestricted Concurrent User<br>• Must Have Minimum 64GB SSD Storage Capacity<br>• Must Have Minimum 6 x 1G Ethernet Interfaces<br>• Must Have Minimum 2 x 1G SFP Interfaces<br>• Must Include Intrusion Prevention System (IPS), Anti-Virus & Anti-Malware, Email Security Protection, Cloud-Based Security Sandbox, Web Filtering, Application Control, Bandwidth Management<br>• Must Quote Minimum 100 Concurrent Users for SSL VPN<br>• Must Be Listed in Latest Gartner Magic Quadrant for Next Generation Firewall | 1 No. |

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| | | • Must Be Listed in Latest ICSA Labs Certified Next Generation Firewall<br>• Must Have Full Features Working Even License Is Expired<br>• 5 Years Complete Security Features License<br>• 5 Years Software Upgrade & 24x7 Technical Support<br>• 5 Years Hardware Warranty Service<br>• Must Have OEM Presence in Pakistan For Minimum 3 Years | |
| 6 | INDOOR MICRO Data Centre ATM-06F or Equivalent | 1. Overall Parameters<br>The overall dimension of micro data center indoor unit is:600mm(width) * 1100mm(depth) * 2000mm(height).<br>The power input is: 220V/1Phase/50Hz-60Hz.The available space is 26U.The available power is 6kVA.The available cooling is 3.5kW. Must included 16 Slot Metered PDU.The loading capacity of the cabinet is 1500kg.600mm(width) * 1100mm(depth) * 33U(height). system use 9 folded frame.<br>The cabinet is fully closed to protect equipments from dust and harsh environment. door the cabinet is double open steel type.<br>The locking of cabinet is 3in1 Access Control. The cabinet comes with wheels and level feet.<br>UPS:6kVA high frequency type.<br>rack mount with backup upto 2 hours on 70% load, and height is 2U. power input 220V/3Ph/50Hz-60Hz.<br>UPS system. Detail specification is referred within the wiring diagram.<br>The power output sockets are C13*10Pcs battery module 2U includes VRLA type batteries of 12V/9AH * 16Pcs.Cooling is packaged DX type 3.5kW capacity .Power input is 220V/1Ph/50Hz-60Hz.<br>cooling system indoor unit is Top mount packaged with evaporator and condenser.Compressor system is hermetic rotary type.<br>capacity is adjustable by HGBP(hot gas by pass) technology.<br>evaporator fan is EC fan type. Condenser fan is EC fan type.<br>cooling unit shipped with refrigreant charged with R410A. | 2Nos. |

| | | Emergency ventilation method is <u>openning front door & rear door of cabinet during high temperature.</u> <br> Monitoring System <br> display of monitoring system is <u>10" touch type.</u> <u>Including ON/OFF unit</u>. <br> Monitoring function :<u>calculation of power usage and calculation of system PUE & Smoke Sensor</u> | |
|---|---|---|---|
| 7 | LED Screen 55Inch or Higher (Smart ) | Including Allied Accessories | 2 |
| 8 | Air Conditioner 2 tons | | 1 |
| 9 | Installation and Commissioning | I.    Installation of all the hardware and setting up of indoor micro data center, Installation of OS (Linux Based) and other required softwares, Email Server Configuration, Migration of approximately 450 E-Mail Boxes & Migration of MIS and other Reporting Softwares already in use by organization from existing system (CPANEL) to servers | job |
| | | II.    Commissioning of Data center/ICT infrastructure | Job |
| | | III.    Seating arrangement of permanent staff. | Job |
| | | IV.    Glass partitioning of Data center | Job |
| | | V.    One week of Training (On Premises) | Job |

# Annexure –II

## TORs for Installation & Commissioning

1.    Install all equipment's servers, Network Switches, Firewall, Racks, Indoor Micro Data center, interconnectivity between all the components (Fiber/Cat 6 which ever applicable) and AC with all accessories.

2.    Installation of Operating System (Linux and/or Windows Server based), mail server configuration, antivirus and other software's necessary for operating and maintaining servers & Migration of Data if any required.

3.    Diagrams related to operation, installation must be provided at the time of deployment.

4.    Configuration of Firewall and network switches must be perform by the successful bidder.

5.    User rights and relevant material can be shared by the relevant authority.

6.    Time period for the installation and commissioning must within 9 am to 5 PM after that prior permission need to be obtain from relevant authority.

7.    Inspection report must be sign after the installation and commissioning.

8.    The Supplier shall be responsible for maintenance of the supplied Machinery/Equipment/Tools and will provide warranty for minimum three/five years (which ever is applicable as per the line items in Annex I).

9.    The supplier shall provide post preventive maintenance (PPM) on quarter basis.

10.    The supplier shall also provide technical support for **One Year** after the successful installation & commissioning of the project.

11.    Minor civil works, like glass door partition, cable tray installation, installation of racks on elevated platform, or any other requirement necessary during Installation and commissioning mutually agreed to be carried out by successful bidder.

12.    Operational Manual of the system to be provided by the vendor.