



**CYBER SECURITY FOR DIGITAL PAKISTAN / nCERT**

**(NATIONAL CYBER EMERGENCY RESPONSE TEAM)**

**Supply of GRC Hardware Equipment at National CERT**

**GOVERNMENT OF PAKISTAN**  
**CYBER SECURITY FOR DIGITAL PAKISTAN/nCERT (NATIONAL**  
**CYBER EMERGENCY RESPONSE TEAM)**

**INVITATION TO BIDS**

1. Cyber Security for Digital Pakistan /nCERT invites bids for **Supply of GRC Hardware Equipment for PSDP Project "Cyber Security for Digital Pakistan / nCERT"** for which electronic bids are invited under Single Stage-Single Envelope procedure from the firms/ companies registered with Income Tax, Sales Tax Departments and who are on FBR's Active Taxpayer's List (ATL) through e-PADS 2.0.
2. The prospective service providers are required to submit their electronic bids including technical and financial proposals along with the Bid Security instrument amounting to Rupees 01 million/- (Rupees One Million Only) submitted in favor of Project Director, CSDP/NCERT (FTN/NTN: 9012000-7) through PPRA e-PADS Version 2.0.
3. The **NCERT (NTISB)** invites E-bids from eligible Bidders for procurement of goods described in the bidding documents on **EPADS v2.0**.
4. E-Bidding documents, containing detailed terms & conditions, specifications and requirements etc. are available on **e-Pak Acquisition and Disposal System (EPADS) v2.0** at <https://vendors.epads.gov.pk/>.
5. Bidder(s) are required to get themselves registered on **EPADS v2.0** on or before **April 8, 2026 11:30 AM**. E-bids will be opened using **EPADS v2.0** on the same day at **April 8, 2026 11:30 AM under single stage one envelope bidding procedure**. Manual submission of Bids shall not be entertained. Those vendors who have not yet registered on the new version of **EPADS v2.0**, may register themselves on <https://vendors.epads.gov.pk/>. A tutorial to explain the registration process is available at <https://www.youtube.com/watch?v=MNW6T38v7tc>
6. Original Bid security instrument **MUST** be submitted to the undersigned before closing hours of the bid submission time otherwise respective bid will not be opened.
7. Bidding documents can be accessed from the website of National Computer Emergency Response Team (<https://pkcert.gov.pk/>) as well as on PPRA website.
8. Bids will be opened on the same day i.e., **April 8, 2026**, at 1130 hours in the presence of representatives of the bidders.
9. As per PPRA Rules 33(1), 2004, National Computer Emergency Response Team (nCERT) has the right to reject any or all bids/ proposals at any time prior to the acceptance of a bid/proposal.

Project Director  
Cyber Security for Digital Pakistan/nCERT  
L- Block Pak Secretariat, Islamabad  
Ph No. 051-9203421-22  
Email: [bid@pkcert.gov.pk](mailto:bid@pkcert.gov.pk)  
Website: (<https://pkcert.gov.pk/>)

**TERMS OF REFERENCE (TOR) REQUEST FOR PROPOSAL FOR  
SUPPLY OF HARDWARE**

1.	Background
2.	General Terms & Conditions
3.	Implementation & Payment Schedule
5.	Financial Bid Evaluation
6.	Award Of Contract
7.	Mailing address/ Contact information
8.	AFFIDAVIT
9.	THE CLIENT's RIGHTS

**1. BACKGROUND:**

“Cyber Security for Digital Pakistan”, is a PSDP project sponsored by Ministry of Information and Technology (MoITT) and executed by National Telecommunication & Information Technology Security Board (NTISB). The project “Cyber security for Digital Pakistan” is a pre-requisite for the Digital Pakistan initiative addressing current National cyber security gaps and concerns. This project will provide cyber security and digital initiative support to all public/private/defence sector organizations/institutes at national level. “National CERT” is a PSDP Project sponsored by Ministry of Information and Technology (MoIT&T) and executed by National Telecommunication & Information Technology Security Board (NTISB). The Project “Cyber Security for Digital Pakistan” is a prerequisite for the Digital Pakistan initiative addressing current National Cyber Security requirements. This project will provide Cyber Security support to all Public / Private / Defense Sector Organizations/ Institutions on National Scale. In pursuance, Project Director is looking to procure Hardware for PKCERT HQ’s Office at Block-L Pakistan Secretariat Islamabad.

**2. GENERAL TERMS & CONDITIONS:**

- i. Proposal Submission:** The electronic bid including technical and financial proposals must be submitted online on or before **April 8, 2026 at 1100 (proposal submission date)** hours through **e-PADS v2.0 at <http://eprocure.gov.pk>**.
- ii.** A bid security, in the shape of a Bank Draft / Pay Order in the name of **Project Director, PKCERT**, at the rate of **1 million of the bidding amount** should be submitted along with the Technical and Financial Proposals at the address given below latest by **April 8, 2026 at 1100 hrs (bid opening date)**. Technical bids will be opened on the same date at **1130 hrs**:

**Project Director**  
**Cyber Security for Digital Pakistan (CSDP/nCERT)**  
**L- Block Pak Secretariat, Islamabad**  
**Ph No. 051-9203421-22**  
**Email: [bid@pkcert.gov.pk](mailto:bid@pkcert.gov.pk)**
- iii. Pre-bid Meeting:** A bidders' conference/ pre-bid meeting will be held in the premises of NCERT L-Block Pak Secretariat Islamabad, on **17<sup>th</sup> March, 2026 at 1130 hrs**. All queries relating to Tender should be faxed or emailed to the undersigned at least 3 days before the bidders' conference/ pre-bid meeting.
- iv. Scope of Work:** The scope of work includes Supply, Installation and successful testing of the Hardware at Annex-I.
- v.** Bidders can bid for all items or for selected items through Single Stage One Envelope procedure (item wise). The client reserves the right to award contract for all or selected items from Annex-I to successful bidder/bidders. The client reserves the right to purchase/ procure each module separately from different vendor/ OEM and increase or decrease the quantity of items at the time of issuance of supply order. For the purpose, bidders to quote each module/ product hardware separately. Baseline configurations are mentioned vide Annex-I, therefore equivalent latest or higher configurations will be preferred on the criteria of least quoted rates versus technology offered.
- vi.** Soon after technical evaluation, the technical qualified firms as per evaluation criteria mentioned at para 4, shall be called for opening of financial bid on given date and time which will be communicated to the firms in writing. Un-opened bid security instrument shall be returned to the technically disqualified firms.(combine evaluation)
- vii.** Proposal and prices shall remain valid for a period of 120 days from the date of closing for submission of the proposal. However, the responding organizations are encouraged to state a longer period of validity for the proposal.
- viii.** Prices should be quoted in the Pakistani rupees (PKR) and inclusive of all taxes, prices mentioned without any remarks will be treated as inclusive of all applicable taxes.
- ix.** Any proposal received after the due date and time will not be accepted.

- x.** Bidders should be registered with Sales Tax registration Department and should be in possession of valid NTN number. Copies of the certificates must be attached with the technical bid.
- xi.** The successful bidders shall be responsible for payment of any duties / taxes etc. that are imposed by the Government of Pakistan during the period of delivery and till commissioning.
- xii.** The bidders are hereby informed that the Government shall deduct tax at the rate prescribed under the tax laws of Pakistan, from all payments for Hardware by any bidder who signs a contract with the Government.
- xiii.** The successful Firm shall be required to deposit in the form of a Bank Guarantee, a Performance Bond from the date of successful testing and acceptance, a sum equivalent to ten percent (10%) of the contract value. This Bank Guarantee shall be issued by a scheduled bank operating in Pakistan and shall be kept valid from the date of issue, until one (1) year after all contractual obligations have been fulfilled.
- xiv.** Bidders should have been in the IT business, Sales and After Sales Support/Maintenance provisioning for at least (03) three years. Bidding firms to provide undertaking for not being blacklisted to participate in tenders.
- xv.** Hardware equipment should have minimum one (01) year warranty (unless stated otherwise in Annex-I), including parts and maintenance after the delivery of hardware with next Business Day Part Replacement and on-site support. Supplier to share list of OEM warehouses for spare-parts and accessories within the country where applicable (nCERT reserves the right to keep faulty Hardware/Equipment under parts replacement warranty claim).
- xvi.** The bidders should be authorized Partner / Distributor of THE ORIGINAL EQUIPMENT MANUFACTURER, in Pakistan.
- xvii.** All equipment should be supplied through verifiable and legitimate distribution/Sales channels with verified supply chain track.
- xviii.** The Bidders to provide Company information as per para 4 for Technical Evaluation.
- xix.** Bidders should not submit any kind of refurbished / Used / End of Life Hardware equipment's / components in their technical proposals.
- xx.** Bidders should clearly indicate the timeline for delivery of equipment after receiving the award of contract.
- xxi.** The end user licenses, end user warranties and end user contracting support services registrations and subscriptions will be in the name of Client, for all the equipment and Software loaded on the equipment delivered during the course of this procurement. All items/solutions must be pre-configured with all applicable licenses, subscriptions and dependencies with no compatibility conflicts / missing dependencies.
- xxii.** Envelope for financial proposals should be clearly marked: "Financial Proposal".
- xxiii.** Main Envelope should contain "Technical Proposal" & "Financial Proposal" (each being

physically separated, bound, sealed and labeled), all the supporting documents as per evaluation criteria mentioned at para 4 & 2 (vi) and a separate clearly marked sealed envelope of bid security instrument

### 3. IMPLEMENTATION & PAYMENT SCHEDULE:

Sr. No.	Milestones	Time Period	Payment
1.	Supply of equipment. Installation and Configuration	Two-to-Four weeks from date of signing of contract	40%
2.	Successful testing and acceptance	Four (04) weeks from installation and configuration of Hardware	60% Subject to provision of 10% Performance Guarantee
3.	End of performance Guarantee	Performance Guarantee will have to be provided to cover the warranty period of the hardware which will be One year from the date of successful testing and acceptance.	Release of Performance Guarantee

### 4. TECHNICAL BID EVALUATION:

There will be a one-stage technical evaluation totaling 100 marks. The evaluation is divided into two phases: Preliminary Evaluation (Initial Screening) and Detailed Technical Evaluation:

A. Preliminary Evaluation / Initial Screening (30 Marks) Bids will be screened based on the following criteria. Bidders must provide the required documentation to secure these marks:
i. Bidder must be a Pakistani Company OR a branch office of a Multinational Corporation with a local presence.
ii. Bidders or partners/affiliates must be in the IT business.
iii. Preference is given to authorized dealers/partners of the OEM/Manufacturer for the equipment.
iv. All equipment must have at least one year's comprehensive onsite warranty (parts and labor). Extended warranties are preferred.
v. Bidders or partners/affiliates must have an operational office in Islamabad/Rawalpindi.
vi. Mandatory registration with Income Tax and Sales Tax Departments and must appear on FBR's Active Taxpayer's List (ATL).
vii. Required Documentation:
(a) Copies of NTN/STRN and FBR ATL status.
(b) Authorized Partner/OEM Certificates (where applicable).
(c) Detailed Product Specifications.

**Detailed technical evaluation** will be done for firms who qualify the preliminary evaluation mentioned above. In detailed technical evaluation, the Evaluation & Award Committee will verify the compliance with specifications mentioned in Annexure-I. Any bid containing less specifications will be rejected. The remaining 70 marks are distributed as follows:

i.	Compliance with Technical Specifications (40 Marks): Degree to which the proposed hardware meets or exceeds the specifications defined in the RFP, including processor, memory, storage, interfaces, and other required features.
ii.	Performance & Capability (15 Marks): Overall system performance, processing capacity, throughput, efficiency, and ability to handle the required workload.
iii.	Warranty, Support & Vendor Reliability (15 Marks): Warranty duration, availability of local technical support, maintenance services, response time, and verified vendor reliability/authorized partnership status.

**5. FINANCIAL BID EVALUATION:**

Financial bids of the technically qualified firms will be opened before the representatives who wish to attend the tender opening. Financial bids will be opened only for those vendors only who qualify (meet the specifications) in technical and detailed technical evaluation.

**6. AWARD OF CONTRACT:**

Bidder having lowest financial bid will be awarded with the contract. After acceptance of Technical and Financial bid, an Award Letter shall be issued, in duplicate, to the successful bidder, and the selected Firm, within 15 days of receipt of Award Letter, sign and return the duplicate copy of the Award Letter in acknowledgement thereof. In the event the duplicate copy of the Award Letter duly signed by the Firm is not received by the stipulated date, the Authority may, unless it consents to extension of time for submission thereof, cancel the Award Letter issued to it.

**7. MAILING ADDRESS/ CONTACT INFORMATION:**

The following address details can be used for any correspondence, queries clarification and communication purposes via email and/or telephone calls:

<b>Address</b>	National Cyber Emergency Response Team (nCERT) HQ's, L-Block, Pakistan Secretariat, Islamabad
<b>Telephone</b>	<b>051-9203421-22</b>
<b>Email</b>	bid@pkcert.gov.pk
<b>Website</b>	www.pkcert.gov.pk

**8. AFFIDAVIT**

The Bidders shall provide an undertaking on non-Judicial Stamp Paper that the Bidder itself or its sister/sub companies have not been declared black listed by any Government/Semi- Government/autonomous body or private institution.

**9. THE CLIENT'S RIGHTS**

The Client may reject all bids or proposals at any time prior to the acceptance of a bid or proposal. nCERT shall, upon request, communicate to any bidder who submitted a bid or proposal, the grounds for its rejection of all bids or proposals, but is not required to justify those grounds.

- a. Work will be awarded to the bidder after technical and financial bids evaluation, item-wise. The bidder obtaining highest marks combining both Technical and financial proposals will be awarded the contract.
- b. If two or more bidders obtain equal marks after combining Technical & Financial scores, which is the highest score for any item, then the contract will be awarded to the

one having higher technical score.

- c. In case of refusal by successful bidder to sign contract, the client may award the contract to second financially lowest bidder in accordance with PPRA letter dated 15-02-2021 having caption “General Clarification Regarding Award of Contract to Second Most Advantageous Bidder”.

<b>Table A: <u>Mandatory Requirements to enter the technical evaluation phase</u></b>		
<b>Sr. #.</b>	<b>Requirement/ Document to be attached</b>	<b>Compliance? Yes/ No</b>
1.	The bidder must have to produce Sales Tax and Income Tax Registration.	
2.	The bidder must be an Active Tax Payer of FBR.	
3.	The bidder must ensure that Bid Security copy is attached in the Technical Proposal in the form of Bank Draft or Pay Order in favor of “Project Director – Cyber Security for Digital Pakistan”.	
4.	The bidder must submit affidavit on non-judicial Stamp Paper.	
5.	The bidder/ OEM must have Presence, Sales and Service Support Center in any one major city of Pakistan.	
6.	TSP / Institution / Firm should have a good / sound financial standing to meet the contract obligations. (Bank / Financial Statement, duly audited, for the last One (1) years to be provided).	
7.	Bids must include a clear and comprehensive section on licensing terms, detailing authorized users, validity period, training requirements, and other relevant clauses. Vague or imprecise provisions will be deemed unacceptable or result in loss of marks.	

## **2. DISQUALIFICATIONS**

Proposals will be liable to be rejected if any deviation is found from the instructions as laid down in the bid document i.e.

- a. False/ Incorrect submission of undertaking certificate.
- b. Technical bid is submitted without the required redacted copy of Bid Security.
- c. Offers are received after specified date and time.
- d. Specification and other requirements are not properly adhered to or different from those given in the bidding documents.
- e. GST and NTN certificates are not attached.
- f. Bidder is not in Active Taxpayer List (ATL) of FBR for both income tax and sales tax or any provincial revenue authority for sales tax only.
- g. Sales and Support Service Centers not in Pakistan.
- h. Quoting under rated hardware i.e. noncompliance of specifications mentioned in the bidding document.

## **3. REDRESSED OF GRIEVANCES BY THE PROCURING AGENCY**

- a. nCERT has constituted a committee comprising of odd number of persons, with proper powers and authorizations, to address the complaints of bidder that may occur

prior to the entry into force of the procurement contract.

- b. Any Redressal of grievances and settlement of disputes shall be done according to Section 48 of Public Procurement Rules, 2004.
- c. Mere fact of lodging of a complaint shall not warrant suspension of the procurement process.

#### **4. PERFORMANCE BANK GUARANTEE (PBG)**

- a. Bid security of successful bidder shall be retained till provision of Performance Bank Guarantee (PBG). Whereas, bid security of unsuccessful bidders will be returned after award of contract to successful bidder.
- b. A Performance Bank Guarantee (PBG) from a bank for an amount equal to 10 PERCENT of the bid/contract price in PAK RUPEE, shall be submitted before signing the contract for carrying out the assignment. For the purpose of Bank Guarantee, the bid/contract price will mean the total bid amount as provided in Financial Proposal.
- c. Performance Bank Guarantee (PBG) shall be submitted in shape of pay order/ bank draft in favor of “Project Director – Cyber Security for Digital Pakistan” at the time of signing of the Contract.
- d. If selected, The Contractor if not able to commission the Hardware as per contract or have provided the under rated or under quality product, support services, Performance Guarantee will be forfeited and contract will be cancelled. Further to add the following conditions shall also lead to forfeiture of Performance Guarantee and cancellation of contract:
  - (i) False/ Incorrect submission of undertaking certificate
  - (ii) If the Contractor commits a default under the Contract;
  - (iii) If the Contractor fails to fulfill the obligations under the Contract;
  - (iv) If the Contractor violates any of the terms and conditions of the Contract;
  - (v) If blacklisting procedure by the client is being initiated against the Contractor.
- e. Performance Guarantee would be retained until one (1) year after all contractual obligations have been fulfilled and would be submitted within 15x days of signing the contract by the supplier or as per the demand of purchaser.

#### **5. AWARD OF CONTRACT**

- a. Work will be awarded to the bidder after technical and financial bids evaluation. The bidder obtaining highest marks combining both Technical and financial proposals will be awarded the contract.
- b. If two or more bidders obtain equal marks after combining Technical & Financial scores, which is the highest score for any item, then the contract will be awarded to the one having higher technical score.
- c. In case of refusal by successful bidder to sign contract, the client may award the contract to second financially lowest bidder in accordance with PPRA letter dated 15-02-2021 having caption “General Clarification Regarding Award of Contract to Second Most Advantageous Bidder”.
- d. Supplier shall deliver the equipment, hardware, machinery within the 4-6 weeks after issuance of the Purchase Order (PO), and a performance insurance guarantee must be submitted within 15x days of signing the contract by the supplier or as per the demand of purchaser.
- e. The successful Firm shall be required to deposit in the form of a Bank Guarantee, a Performance Bond from the date of successful testing and acceptance, a sum equivalent

to ten percent (10%) of the contract value. This Bank Guarantee shall be issued by a scheduled bank operating in Pakistan and shall be kept valid from the date of issue, until one (1) year after all contractual obligations have been fulfilled.

**6. CORRUPT OR FRAUDULENT PRACTICES**

- a. Definition of the terms set forth below for the purposes of this bidding document, shall be according to Public Procurement Rules, 2004.

**7. PAYMENT PROCEDURE**

- a. No advance payment shall be made against the supply of hardware mentioned in the bidding document.
- b. Payment shall be made on provision of invoice/bill as per the schedule below:

Sr. No.	Milestones	Time Period	Payment
1.	Supply of equipment Installation and Configuration	4-6 weeks for inland items from date of signing -of contract 6- 8 weeks for the import items from date of signing of contract	60%
2.	Successful testing and acceptance	Four (04) weeks from installation and configuration of Hardware	40% Subject to provision of Performance Insurance guarantee

**Table: A**

**Portable Workstations (Qty.12)**  
**(System must meet, equivalent or exceed listed specifications)**

- **Processor:** Intel® Core™ i9-14900K or equivalent
- **Memory (RAM):** 32 GB DDR5 (or higher)
- **Storage:** 1 TB NVMe M.2 SSD (for storage)
- **Graphics:** NVIDIA GeForce RTX 4000 GPU (or equivalent)
- **Display:** 16-inch high-resolution display
- **Accessories (Included)**
- **Operating System Microsoft Windows 11 + Microsoft Office License**
- **Approximate dimensions:** 17" (W) × 12.6" (H) × 4" (D)
- **Warranty:** 1 year (replacement or onsite)
- **Laptop bag** in black or dark brown (subject to purchaser's approval)
- **Laptop Bag Each bag shall include:**
  - One laptop pocket
  - One main compartment
  - One inside zipper pocket
  - Two open pockets
  - One pen holder
  - One front pocket
  - One outside back pocket

**Table: B**

**Monitors (Qty.12)**  
**(System must meet, equivalent or exceed listed specifications)**

- **Display Size:** 23" (±0.5" tolerance)
- **Display Type:** LED / IPS Panel
- **Resolution:** Full HD (1920 × 1080) or higher
- **Aspect Ratio:** 16:9
- **Brightness:** Minimum 250 nits
- **Contrast Ratio:** Minimum 1000:1 (static)
- **Color Support:** 16.7 million colors; ≥ 99% sRGB coverage\
- **Refresh Rate:** Minimum 75 Hz
- **Response Time:** 5 ms (gray-to-gray) or better
- **Viewing Angles:** 178° horizontal & vertical
- **Ports / Connectivity:**
  - 1× HDMI
  - 1× DisplayPort
  - 1× VGA (optional)
  - Audio Out
- **Stand Adjustability:**
  - **Tilt adjustment:** -5° to +20° or better  
Height adjustment preferred
- **Mounting:** VESA mount compatible (100 × 100 mm)
- **Power Consumption:** ≤ 30 W (operating)
- **Certifications:** Energy Star 8.0 / TCO Certified / EPEAT Silver or higher
- **Accessories (Include):**
  - HDMI cable
  - Power cable
- **Warranty:** 1 year(replacement or onsite)

<b>Table: C</b>
<b>Wireless Keyboard + Touchpad Mouse (Combo) (Qty.03)</b> (System must meet, equivalent or exceed listed specifications)
<p><b>Minimum Requirement</b></p> <ul style="list-style-type: none"> <li>• <b>Type:</b> Wireless Keyboard with Integrated Touchpad / Trackpad</li> <li>• <b>Connectivity:</b> 2.4 GHz wireless (USB receiver) or dual-mode (Bluetooth + USB receiver)</li> <li>• <b>Range:</b> Minimum 10 meters (33 feet)</li> <li>• <b>Keyboard Layout:</b> Full-sized QWERTY layout with dedicated function and multimedia keys</li> <li>• <b>Touchpad:</b> Built-in high-precision touchpad supporting multi-touch gestures</li> <li>• <b>Power Source:</b> Rechargeable (via USB-C) or battery-operated (AA/AAA) with <math>\geq 6</math> months battery life</li> <li>• <b>Compatibility:</b> Windows 10/11, Linux, macOS, Android (Plug and Play support)</li> <li>• <b>Indicators:</b> LED indicators for Power, Caps Lock, and Connection status</li> <li>• <b>Design:</b> Compact, lightweight, ergonomic design with durable build quality</li> <li>• <b>Operating Distance:</b> Minimum 10 meters without signal drop</li> <li>• <b>Included Accessories:</b> USB receiver (dongle), charging cable (if rechargeable), user manual</li> <li>• <b>Certifications:</b> CE, FCC, or equivalent compliance</li> <li>• <b>Warranty:</b> 1 year replacement warranty</li> </ul>

<b>Table: D</b>
<b>Docking Stations (Qty.12)</b> (System must meet, equivalent or exceed listed specifications)
<p><b>Minimum Requirement</b></p> <ul style="list-style-type: none"> <li>• <b>Type:</b> Universal or Thunderbolt 4 Docking Station</li> <li>• <b>Compatibility:</b> Must support major laptop brands (Dell, HP, Lenovo, ASUS, etc.) and Windows 10/11 OS</li> <li>• <b>Host Connection:</b> 1 <math>\times</math> USB-C / Thunderbolt 4 upstream port (for laptop connection)</li> <li>• <b>Video Output:</b> Minimum 2 <math>\times</math> DisplayPort 1.4 and/or HDMI 2.1 supporting dual 4K (3840<math>\times</math>2160) displays at 60 Hz</li> <li>• <b>USB Ports:</b> Minimum 4 <math>\times</math> USB-A 3.2 Gen 1 (5 Gbps) and 2 <math>\times</math> USB-C 3.2 Gen 2 (10 Gbps)</li> <li>• <b>Network Connectivity:</b> 1 <math>\times</math> Gigabit Ethernet (RJ-45) port</li> <li>• <b>Audio:</b> 1 <math>\times</math> 3.5 mm combo audio jack (in/out)</li> <li>• <b>Power Delivery:</b> Must support up to 100 W laptop charging via USB-C / Thunderbolt</li> <li>• <b>Security Slot:</b> Integrated Kensington lock slot for physical security</li> <li>• <b>Cable Length:</b> Minimum 0.8 m (detachable preferred)</li> <li>• <b>Operating Temperature:</b> 0<math>^{\circ}</math>C to 40<math>^{\circ}</math>C</li> <li>• <b>Certifications:</b> CE, FCC, RoHS compliant</li> <li>• <b>Warranty:</b> 1 year (onsite or replacement warranty)</li> </ul>

<b>Table: E</b>
<b>External Hard Drives (Qty.05)</b> (System must meet, equivalent or exceed listed specifications)
<p><b>Minimum Requirement</b></p> <ul style="list-style-type: none"> <li>• <b>Capacity:</b> 1 <math>\times</math> 5TB (Single Unit)</li> <li>• <b>Drive Type:</b> Portable External Hard Disk Drive (HDD) or Solid-State Drive (SSD) – HDD preferred for large storage, SSD optional for performance</li> <li>• <b>Interface:</b> USB 3.2 Gen 1 / USB 3.0 backward compatible</li> <li>• <b>Data Transfer Rate:</b> Up to 5 Gbps (USB 3.0)</li> <li>• <b>Power Source:</b> USB bus-powered (no external adapter required)</li> <li>• <b>Compatibility:</b> Windows 10/11, macOS, Linux</li> <li>• <b>Build Quality:</b> Shock-resistant, durable, and compact design</li> <li>• <b>Encryption Support:</b> Hardware-based encryption or software encryption utility preferred</li> <li>• <b>Backup Software:</b> Preloaded or downloadable automatic backup software</li> </ul>

- **Indicator:** LED indicator for power and activity status
- **Cable Included:** USB 3.0 / USB-C cable (minimum 0.5 m)
- **Certifications:** CE, FCC, RoHS compliant
- **Warranty:** 1 year replacement warranty

**Table: F**

**USB Wi-Fi Adapters (Qty.2)**

**(System must meet, equivalent or exceed listed specifications)**

**Minimum Requirement**

- **Type:** USB 3.0 / USB 3.2, external USB adapter
- **Brand & Model:** Preferably ALFA Network model with proven monitor/promiscuous mode support
- **Chipset:** Compatible chipset (e.g., Realtek RTL8812AU or newer) enabling monitor/promiscuous & packet injection
- **WiFi Standard:** Minimum IEEE 802.11ac dual-band (2.4GHz + 5GHz); WiFi 6 (802.11ax) preferred
- **Max Data Rate:** At least 300 Mbps (2.4GHz) + 867 Mbps (5GHz) or better
- **Antenna:** External detachable high-gain antenna(s), RP-SMA connector
- **Modes Supported:** Managed mode, Monitor mode, Promiscuous mode, and Packet Injection capability
- **OS / Driver Compatibility:** Windows 10/11, Linux (including distributions used for security auditing)
- **Connectivity & Interface:** USB 3.0 (Type-A) or USB-C with adapter; full speed support
- **Security & Features:** Support WPA3, WPA2, WEP; dual-band encryption; support for advanced security tools
- **Build / Accessories:** Durable build, external antennas included, driver support included
- **Warranty:** At least 1-year replacement warranty

**Table: G**

**Storage Compute Workstation (Qty.1)**

**(System must meet, equivalent or exceed listed specifications)**

**Processor (CPU):**

- Intel® Xeon® W-2400 / W-3400 Series or Intel® Core™ i9 (14th Gen)
- Minimum 16 cores / 32 threads
- Base frequency  $\geq$  3.2 GHz

**Memory (RAM):**

- Minimum 128 GB DDR4
- Expandable up to 512 GB
- Minimum 4 DIMM slots

**Storage:**

- Primary: 10 TB NVMe M.2 Gen 5 SSD (boot drive)
- Secondary: 20 TB SATA HDD (data storage)
- RAID support: RAID 0 / RAID 1

**Graphics (GPU):**

- NVIDIA RTX™ 4000 Ada Generation (8 GB GDDR6) or equivalent professional GPU
- Must support CUDA and OpenCL for AI, rendering, and simulation workloads connectivity & Ports:

**Minimum of:**

- 2 × Thunderbolt 4 / USB 4.0
- 6 × USB 3.2, 2 × USB 2.0
- 2 × DisplayPort / HDMI outputs
- 1 × Gigabit Ethernet (10 GbE preferred)
- Audio in/out ports

**Expansion & Slots:**

- Minimum 2 × PCIe Gen 5 ×16 slots

- 2 × M.2 (NVMe) slots
- Support for additional GPU or storage expansion
- Cooling & Power:**
- Advanced liquid or high-performance air cooling system
- Minimum 1000 W, 80+ Platinum certified power supply
- Chassis:**
- Tower or small-form workstation chassis with tool-less access
- Dust filters and noise-optimized design
- Operating System:**
- Windows 11 Pro for Workstations
- Warranty & Support:**
- Minimum 1-year On-site Warranty

**Table: H**

**High-Compute Workstation (Tower) (Qty.2)**  
**(System must meet, equivalent or exceed listed specifications)**

**Processor (CPU):**

- Intel® Xeon® W-2400 / W-3400 Series or Intel® Core™ i9 (14th Gen)
- Minimum 32 cores / 64 threads
- Base frequency ≥ 3.2 GHz

**Memory (RAM):**

- Minimum 256 GB DDR4 (ECC / non-ECC)
- Expandable up to 512 GB
- Minimum 4 DIMM slots

**Storage:**

- Primary: 2 TB NVMe M.2 Gen 5 SSD (boot drive)
- Secondary: 5 TB SATA HDD (data storage)
- RAID support: RAID 0 / RAID 1

**Graphics (GPU):**

- NVIDIA RTX™ 5000 Ada Generation (16 GB GDDR6) or equivalent professional GPU
- Must support CUDA and OpenCL for AI, rendering, and simulation workloads

**Connectivity & Ports:**

• **Minimum of:**

- 2 × Thunderbolt 4 / USB 4.0
- 6 × USB 3.2 and 2 × USB 2.0
- 2 × DisplayPort / HDMI outputs
- 1 × Gigabit Ethernet (10 GbE preferred)
- Audio in/out ports

**Expansion & Slots:**

- Minimum 2 × PCIe Gen 5 ×16 slots
- 2 × M.2 (NVMe) slots
- Support for additional GPU or storage expansion

**Cooling & Power:**

- Advanced liquid or high-performance air cooling system
- Minimum 1000 W, 80+ Platinum certified power supply

**Chassis:**

- Tower or small-form workstation chassis with tool-less access
- Dust filters and noise-optimized design

**Operating System:**

- Windows 11 Pro for Workstations
- or
- Linux (Ubuntu 22.04 LTS) or equivalent

**Warranty & Support:**

- Minimum 1 Year On-site Warranty

<b>Table: I</b>
<b>Raspberry Pi 5 (Qty.2)</b> <b>(System must meet, equivalent or exceed listed specifications)</b>
<ul style="list-style-type: none"> <li>• <b>Processor:</b> Broadcom BCM2712 2.4 GHz quad-core 64-bit Arm Cortex-A76 CPU with cryptography extensions, 512 KB per-core L2 caches, and a 2 MB shared L3 cache</li> <li>• <b>Graphics:</b> VideoCore VII GPU supporting OpenGL ES 3.1 and Vulkan 1.3</li> <li>• <b>Display:</b> Dual 4Kp60 HDMI® output with HDR support</li> <li>• <b>Video Decoding:</b> 4Kp60 HEVC decoder</li> <li>• <b>Memory:</b> LPDDR4X-4267 SDRAM 8 GB</li> <li>• <b>Wireless Connectivity:</b> Dual-band 802.11ac Wi-Fi® and Bluetooth 5.0 / Bluetooth Low Energy (BLE)</li> <li>• <b>Storage:</b> microSD card slot supporting high-speed SDR104 mode</li> <li>• <b>USB Ports:</b> 2 × USB 3.0 ports (5 Gbps) and 2 × USB 2.0 ports</li> <li>• <b>Networking:</b> Gigabit Ethernet with PoE+ support (requires separate PoE+ HAT)</li> <li>• <b>Camera / Display Interface:</b> 2 × 4-lane MIPI camera / display transceivers + HDMI</li> <li>• <b>Expansion:</b> PCIe 2.0 x1 interface for fast peripherals (requires M.2 HAT or adapter)</li> <li>• <b>Power:</b> 5 V / 5 A DC via USB-C with Power Delivery support</li> <li>• <b>GPIO Header:</b> Raspberry Pi standard 40-pin header</li> <li>• <b>Real-Time Clock:</b> RTC powered from external battery</li> <li>• <b>Additional Feature:</b> Power button</li> </ul>

<b>Table: J</b>
<b>Wireless &amp; Wired keyboard + Mouse (Qty.12)</b> <b>(System must meet, equivalent or exceed listed specifications)</b>
<ul style="list-style-type: none"> <li>• <b>Product Type:</b> Wireless and Wired Dual-Mode Optical Mouse (with Mouse Pad)</li> <li>• <b>Connectivity:</b> Dual-mode: 2.4GHz Wireless (USB Receiver) and Wired (USB Cable)</li> <li>• <b>Sensor Type:</b> Optical sensor with adjustable DPI (800–1600 DPI or higher)</li> <li>• <b>Buttons:</b> Minimum 3 buttons (Left, Right, Scroll)</li> <li>• <b>Battery:</b> Rechargeable battery with USB-C or Micro USB charging</li> <li>• <b>Cable:</b> USB-A or USB-C detachable cable for wired mode</li> <li>• <b>Compatibility:</b> Compatible with Windows, macOS, and Linux</li> <li>• <b>Build Quality:</b> Ergonomic design, durable switches (≥3 million clicks), smooth scroll wheel</li> <li>• <b>Mouse Pad:</b> Included high-quality non-slip rubber base pad, minimum size 220×180 mm</li> <li>• <b>Warranty:</b> Minimum 1-year manufacturer warranty</li> <li>• <b>Certifications:</b> CE, FCC, or equivalent</li> </ul>

<b>Table: K</b>
<b>High-Quality Dual-Mode (Wireless &amp; Wired) Professional Headphones (Qty.08)</b> <b>(System must meet, equivalent or exceed listed specifications)</b>
<ul style="list-style-type: none"> <li>• <b>Product Type:</b> Professional Over-Ear Headphones (Wireless &amp; Wired Dual-Mode)</li> <li>• <b>Connectivity Options:</b> Dual-mode: Wireless (Bluetooth 5.0 or higher) and Wired (3.5mm / USB-C cable)</li> <li>• <b>Audio Quality:</b> High-fidelity sound with wide frequency response (20Hz–20kHz or better)</li> <li>• <b>Noise Cancellation:</b> Active Noise Cancellation (ANC) and Passive Isolation for clear listening</li> <li>• <b>Microphone:</b> Built-in noise-reducing microphone for calls and conferencing</li> <li>• <b>Wireless Range:</b> Minimum 10 meters (Class 1 Bluetooth or equivalent)</li> <li>• <b>Battery Life:</b> Minimum 25–40 hours playback per charge; standby 100+ hours</li> <li>• <b>Charging Interface:</b> USB-C fast charging (full charge under 2 hours)</li> <li>• <b>Controls:</b> On-ear or touch controls for volume, play/pause, call, and ANC toggle</li> <li>• <b>Audio Cable:</b> Detachable 3.5mm or USB-C cable for wired mode</li> <li>• <b>Comfort:</b> Over-ear design with soft memory-foam ear cushions and adjustable headband</li> <li>• <b>Build Quality:</b> Lightweight, durable construction with foldable or swivel earcups</li> <li>• <b>Compatibility:</b> Compatible with PCs, laptops, smartphones, and conferencing systems</li> </ul>

- **Multi-Device Support:** Ability to connect with two devices simultaneously (e.g., laptop + phone)
- **Indicators:** LED indicators for power, Bluetooth status, and charging
- **Accessories (Include):** Charging cable, audio cable, carrying case, and adapter (if required)
- **Warranty:** Minimum 1-year manufacturer warranty

**Table: L**

**Professional USB Speakerphone with Dual Hub (Qty.1)  
(System must meet, equivalent or exceed listed specifications)**

- **Product Type:** Professional USB Speakerphone with Dual Hub for Conference Room
- **Audio Pickup:** 360° omnidirectional voice pickup for full-room coverage
- **Microphones:** Built-in high-sensitivity microphones with advanced noise reduction and echo cancellation
- **Speaker Output:** High-fidelity audio output with dynamic range suitable for conference calls and multimedia playback
- **Connectivity:** USB-A and USB-C connectivity (plug-and-play, driver-free setup)
- **Dual Hub Feature:** Integrated dual hub ports to connect additional USB devices (e.g., camera, keyboard, or storage)
- **Compatibility:** Compatible with major conferencing platforms (Zoom, Microsoft Teams, Google Meet, Webex, etc.)
- **Controls:** Touch or physical buttons for volume, mute/unmute, call answer/end
- **Power Supply:** USB-powered (no external adapter required)
- **Cable Length:** Minimum 1.5 meters USB cable (detachable or fixed)
- **Audio Range:** Minimum 4–6 meters pickup radius
- **Indicator Lights:** LED indicators for power, call status, and mute function
- **Build Quality:** Compact and durable design with non-slip base; suitable for medium to large meeting rooms
- **Software Support:** Plug-and-play operation (no additional software required)
- **Warranty:** Minimum 1-year replacement or repair warranty

**Table: M**

**Quality HDMI Cable (5 Meters) (Qty.05)  
(System must meet, equivalent or exceed listed specifications)**

- **Product Type:** High-Quality HDMI Cable
- **Length:** 5 Meters
- **Version:** HDMI 2.1 or higher (backward compatible with HDMI 2.0/1.4)
- **Bandwidth:** Supports up to 48 Gbps
- **Resolution Support:** 4K @ 120Hz and 8K @ 60Hz
- **Connectors:** Gold-plated male-to-male HDMI connectors
- **Cable Material:** High-quality braided or reinforced PVC jacket for durability
- **Shielding:** Triple-shielded for interference-free signal
- **Compatibility:** Compatible with PCs, monitors, projectors, and media devices
- **Certifications:** HDMI Premium Certified, CE, FCC, or equivalent
- **Warranty:** Minimum 1-year replacement warranty

**Table: N**

**Office Professional Printer with Embedded Scanner (Qty.3)  
(System must meet, equivalent or exceed listed specifications)**

- **Product Type:** Office Professional Multi-Function Printer (Print, Scan, Copy, optional Fax)
- **Quantity:** 3 Units
- **Printer Type:** Laser or Inkjet (Business Class)
- **Functions:** Print, Scan, Copy (Fax optional)
- **Print Technology:** Laser preferred (Monochrome or Color, as per requirement)
- **Print Speed:** Minimum 25–35 pages per minute (A4)

- **Print Resolution:** Minimum 1200 × 1200 dpi
- **Scanner Type:** Flatbed + Automatic Document Feeder (ADF)
- **Scan Resolution:** Minimum 600 × 600 dpi (optical)
- **Duplex Printing:** Automatic (two-sided) printing supported
- **Paper Handling:** Minimum 250-sheet input tray and 100-sheet output tray
- **Paper Size Support:** A4, A5, Letter, Legal
- **Connectivity:** USB, Ethernet, and Wi-Fi (with Wi-Fi Direct support)
- **Display Panel:** LCD or Touchscreen control panel for operation
- **Supported OS:** Windows, macOS, and Linux compatible
- **Mobile Printing:** Supports AirPrint, Google Cloud Print, or equivalent
- **Duty Cycle:** Minimum 10,000 pages per month recommended
- **Power Supply:** 220–240V AC, 50/60Hz
- **Consumables:** Must support high-yield toner/ink cartridges
- **Warranty:** Minimum 1-year onsite warranty (parts and labor)
- **Documentation:** User manual, driver software, and warranty documents included

**Table: O**

**High-Performance Touchscreen Ultrabook (Qty.3)**  
**(System must meet, equivalent or exceed listed specifications)**

- **Brand / Model:** Microsoft Surface Laptop series (latest generation) or equivalent
- **Processor (CPU):** Latest generation Intel® Core™ Ultra H-series or Snapdragon™ X series (8-core or higher) with integrated NPU for AI-accelerated features
- **Memory (RAM):** 16 GB minimum; 32 GB preferred for higher-end units
- **Storage (SSD):** 512 GB SSD minimum; 1 TB preferred
- **Display:** 13.8" or 15" PixelSense™ touch display, Aspect-ratio 3:2, resolution approx. 2304×1536 (13.8") or 2496×1664 (15") with high colour fidelity
- **Graphics:** Integrated graphics (Intel Iris Xe) or Adreno GPU on Snapdragon models; sufficient for business productivity and light graphics tasks
- **Battery Life:** At least 15 hours real-world usage (web browsing/video) per manufacturer claims
- **Ports & Connectivity:**
  - At least 2 × USB-C (USB4 / Thunderbolt 4)
  - 1 × USB-A
  - 3.5 mm headphone/mic jack
  - WiFi 6E or WiFi 7
  - Bluetooth 5.x
  - Optional: 5G/LTE modem (for mobile-staff models)
- **Operating System:** Windows 11 Pro (64-bit) pre-installed; latest security updates and support
- **Security Features:**
  - TPM 2.0
  - Biometric login (Windows Hello)
  - Chip-to-cloud security built-in
- **Form Factor / Weight:** Lightweight (≈ 1.3 kg / ~2.9 lbs for smaller size) for easy mobility
- **Warranty & Support:** 1 year onsite warranty by local authorized service partner (Pakistan)

**Table: P**

**Smart Interactive Screen (85-inch) with Stand (Qty.1)**  
**(System must meet, equivalent or exceed listed specifications)**

- **Display:**  
**Screen Size:** 85 inches (diagonal)  
**Display Type:** LED / UHD 4K (3840 × 2160) resolution or higher  
**Aspect Ratio:** 16:9  
**Brightness:** Minimum 350 cd/m<sup>2</sup>  
**Contrast Ratio:** ≥ 4000:1  
**Viewing Angle:** 178° (H/V)  
**Response Time:** ≤ 8 ms  
 Anti-glare, anti-fingerprint, and tempered glass surface
- **Touch Technology:**  
 Multi-touch (minimum 20 touch points) with high accuracy  
 Support for stylus and finger touch  
 Palm rejection and gesture support  
 Fast touch response (≤ 5 ms latency)
- **Operating System & Compatibility:**  
 Integrated Android (latest version)  
 Windows OPS slot (i9, 12GB RAM, 256GB SSD or higher)  
 Compatibility with Windows, macOS, Android, iOS  
 Wireless screen sharing (Miracast / AirPlay / Chromecast support)
- **Connectivity:**  
 HDMI (min. 3)  
 USB (min. 4)  
 VGA, Audio In/Out, LAN, Wi-Fi, Bluetooth  
 USB-C (preferred) for power, video, and touch  
 RS232 / RJ45 control ports
- **Audio & Camera:**  
 Built-in stereo speakers (minimum 2 × 20W)  
 Integrated or optional camera and microphone array for conferencing
- **Software Features:**  
 Interactive whiteboard with annotation, drawing, and save/export functions  
 Split-screen and collaboration support  
 Remote management and firmware updates
- **Stand:**  
 Heavy-duty mobile stand with adjustable height and lockable wheels  
 Cable management system included
- **Power & Environment:**  
 Power Supply: 100–240V AC, 50/60Hz  
 Energy-efficient, RoHS and CE certified  
 Operating Temperature: 0°C – 40°C
- **Warranty:**  
 Minimum 1 year comprehensive warranty  
 On-site support and maintenance included

**Table: Q**

**Paper Shredder (Qty.3)**  
**(System must meet, equivalent or exceed listed specifications)**

- **Security Level:** DIN P-4 (Cross-Cut)
- **Capacity:** 20–30 sheets per pass
- **Shred Size:** ≤ 4 × 40 mm
- **Run Time:** 30–60 minutes continuous
- **Bin Size:** 50–70 liters
- **Shreddable Materials:** Paper, staples, paper clips, cards (CD/DVD optional)
- **Entry Width:** 230–300 mm
- **Key Features:** Auto start/stop, anti-jam system, thermal protection
- **Noise Level:** ≤ 55–60 dB

- **Build Quality:** Heavy-duty steel blades, durable body construction
- **Additional Features:** LED indicators, caster wheels
- **Warranty:** 1 year onsite.
- **After-Sales Support:** Local service availability and spare parts support

**Table: R**

**Thermal Transfer Printer (Qty.1)**

**(System must meet, equivalent or exceed listed specifications)**

- Print Technology: Thermal Transfer
- Resolution: 300 dpi (minimum)
- Print Width: 4 inches (102 mm)
- Print Speed:  $\geq 5$  inches/second
- Memory:  $\geq 64$  MB RAM, 32 MB Flash
- Interfaces: USB 2.0 (mandatory), Ethernet (preferred)
- Barcode Support: 1D & 2D (QR Code, Code-128, DataMatrix)
- OS Compatibility: Windows 10/11, Linux
- Sensors: Reflective & Transmissive
- Calibration: Automatic label & ribbon calibration
- Printer Language: ZPL/EPL or compatible
- Form Factor: Desktop
- Power: 100–240V AC
- Warranty: Minimum 1-year onsite

**Asset Tag Label Specifications**

- Material: Polyester (PET) / Vinyl
- Size: Approx. 50×25 mm or equivalent
- Adhesive: Permanent high-tack acrylic
- Finish: Matte or laminated
- Durability: Scratch, moisture & chemical resistant
- Temperature Range: -20°C to +80°C
- Optional: Tamper-evident / void labels

**Ribbon Specifications**

- Ribbon Type: Wax-Resin (minimum)
- Length:  $\geq 300$  meters
- Width: Compatible with 4" printer
- Optional: Resin ribbon for high-wear assets

**Quantity**

- Thermal Transfer Printer: **01 Unit**
- Asset Tag Labels:  $\geq 5,000$  labels
- Thermal Transfer Ribbons:  $\geq 10$  rolls
- Maintenance Services: **01 Year**

**Table: S**

**High-Resolution Webcam (Qty.1)**

**(System must meet, equivalent or exceed listed specifications)**

- **Camera Resolution:** Minimum 1080p Full HD (1920 × 1080); 4K UHD preferred
- **Frame Rate:**  $\geq 30$  fps at 1080p; 60 fps preferred
- **Image Sensor:** CMOS sensor with low-light correction
- **Field of View:** 78° – 90° diagonal
- **Autofocus:** Automatic autofocus with face tracking
- **Digital Zoom:** Minimum 4× digital zoom
- **Microphone:** Built-in dual stereo microphones with noise reduction

- **Video Encoding:** H.264 / MJPEG / YUY2 supported
- **Interface:** USB 2.0 / USB 3.0 plug-and-play
- **Compatibility:** Windows 10/11, Linux, macOS
- **Mounting:** Universal clip mount for monitor/laptop with tripod support
- **Privacy:** Integrated privacy shutter or lens cover
- **Low-Light Performance:** Automatic light correction / HDR support
- **Form Factor:** Compact desktop / monitor-mount design
- **Warranty:** Minimum 2-year onsite or replacement warranty

**Table: T**

**High-Quality Wireless / Cordless Microphone (Qty.1)**  
**(System must meet, equivalent or exceed listed specifications)**

- **Microphone Type:** Professional wireless / cordless microphone system (Handheld or Lapel / Lavalier preferred)
- **Wireless Technology:** UHF / Digital wireless transmission for stable and interference-free audio
- **Operating Range:** Minimum 30–50 meters line-of-sight; ≥ 80 meters preferred
- **Audio Frequency Response:** 50 Hz – 18 kHz or wider for clear speech reproduction
- **Signal-to-Noise Ratio:** ≥ 90 dB for clean audio output
- **Latency:** ≤ 5 ms to ensure real-time audio delivery
- **Channels:** Minimum dual-channel receiver supporting two microphones simultaneously
- **Compatibility:** Compatible with PA systems, amplifiers, mixers, conference systems, and computers
- **Power Supply (Microphone):** Rechargeable lithium battery or replaceable AA batteries with minimum 6–8 hours continuous use
- **Receiver Power:** External adapter or USB powered receiver
- **Build Quality:** Durable metal body microphone with shock-resistant design
- **Interference Protection:** Automatic frequency scanning and anti-interference technology
- **Pairing:** Automatic or manual channel pairing between transmitter and receiver
- **Use Case:** Suitable for training sessions, seminars, lectures, conferences, and public speaking
- **Accessories:** Receiver unit, microphone transmitter(s), rechargeable batteries / charging cable, audio cables, and carrying case
- **Form Factor:** Portable and easy-to-setup wireless microphone system.
- **Warranty:** Minimum 1–2 year warranty with local support or replacement.

**Details of Items Required**

S.No.	Items Required	Technical Specifications	Qty (Mention in Tender)	Unit Price with GST	GST Total Price with GST
1					
2...					