



Government of Pakistan  
**PAKISTAN TELECOMMUNICATION AUTHORITY**  
www.pta.gov.pk

## INVITATION TO BID

### **SUPPLY, UPGRADATION, INSTALLATION, ESTABLISHING, COMMISSIONING AND MAINTENANCE OF PTA DATA CENTER, ON TURNKEY BASIS, ESTABLISHMENT OF THE SECURITY OPERATION CENTER & PROCUREMENT OF DISTRIBUTION SWITCHES**

Pakistan Telecom Authority, (a Federal Telecommunication regulator in Pakistan) invites sealed bids from the original manufacturers / authorized distributors / suppliers/resellers Contractors etc. registered with Income Tax and Sales Tax Departments and who are on Active Taxpayers List of the Federal Board of Revenue and having three years of experience for the Data Center Facility and for establishment of Security Operation Center and having five years of experience for distribution layer switches.

| Sr# | Description of the upgradation of Data Center Facility (DC) (Turnkey Solution)  |
|-----|---|
| A   | TIER-III Complaint, fully redundant (N+1) as per TIA-942-B Standards. All International Standards described in Tender Document shall also be followed i.e. TIA/EIA, ITU, ISO etc., (3 Years Hardware Warranty, Maintenance and 3 years Support/SLA with 3 years Software updates. (Perpetual Software Licenses)   |
| B   | <b>Separate Software Required</b>   |
|     | <b>Perpetual Software Licenses Requirement, Virtual Machines Supporting High Available Clustered Environment.</b>   |
|     | Establishment of Unified (integrated) Security Operation Center (SOC), through Software tools including SIEM, DLP, EDR, UEBA and SOAR etc (Complete Solution), 3 years support/SLA/Maintenance and Software updates. (Perpetual Software License) for 10000 EPS. Components shall be covered.<br>(1) Security Information and Event Management (SIEM) (3) Security Orchestration, Automation and Response (SOAR)<br>(2) Data Leak Prevention (DLP) (5) End point detection and response (EDR)<br>(4) User and Entity Behavior analytics. (UEBA)<br>(6) Managed Support Service from principle manufacturers (01 year) |
| C   | <b>Separate Hardware required, Distribution/ Aggregation Switches</b>   |
|     | <b>2 X 48 ports Distribution Switches with 48 X 1G/10G/25G SFP 28 ports for Servers Connectivity and minimum 6 X 10Gb/25Gb/40Gb/50Gb/100Gb QSFP28 ports for Switch to Switch connectivity with Advance operating system supporting advance routing features.</b><br>(1) 38 x Dual rate 10G/25G transceiver module. (2) 4 X QSFP+ Transceivers<br>(3) 4 X QSFP28 (100Gb) Active optical cable 20m<br>(4) 20 X Optical cables for Server to Switch connectivity (10 Meter) (LC-LC)<br>(5) 10 X 25G (Dual port) Server Fiber Cards<br>(6) Warranty, Support and Software updates for the period of three (03) years.     |

Bidding documents, containing detailed terms and conditions, method of procurement, procedure for submission of bids, bid security, bid validity, opening of bid, evaluation criteria, clarification / rejection of bids, performance guarantee etc. are available at the office of the undersigned. Price of the bidding documents is **Rs.500/-** (in shape of pay order / bank draft, in favor of PTA non-refundable). or Bidding documents can be downloaded from [www.pta.gov.pk](http://www.pta.gov.pk) and PPRA website [www.ppra.org.pk](http://www.ppra.org.pk) free of cost.

The bids, prepared in accordance with the instructions in the bidding documents, must reach at PTA Headquarters F-5/1, Islamabad on or before **21<sup>st</sup> September, 2020 at 10:30 AM**. Technical Bids will be opened on the same day at PTA HQ Auditorium **11:00 AM**. Pre-bid meeting will be held at **8<sup>th</sup> September, 2020 11:00 hours** at PTA HQ Auditorium for DC only, please also register for pre-bid meeting and confirm your participation on email below.

**Muhammad Salman Zafar, Director (ICT)**  
PTA HQs, F-5/1, Islamabad  
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SAY NO TO CORRUPTION



15X3



*Government of Pakistan*  
**PAKISTAN TELECOMMUNICATION AUTHORITY**  
**HEADQUARTERS F-5/1, ISLAMABAD.**  
[http// www.pta.gov.pk](http://www.pta.gov.pk)

**TENDER DOCUMENTS**

| S. No. | Description of the upgradation Data Center Facility (Turnkey Solution)  |
|--------|---|
| A.     | TIER-III Compliant, fully redundant (N+1) as per TIA-942-B Standards. All International Standards described in Tender Document shall also be followed i.e. TIA/EIA, ITU, ISO etc,. (3 Years Hardware Warranty, Maintenance and 3 years Support/SLA with 3 years Software updates.(Perpetual Software License) |

**Scope of Work**

Pakistan Telecommunication Authority (PTA), (hereinafter referred to as “the Client”) invites / requests for proposals (RFP)/bids (hereinafter referred to as “the Tender”) from firms/companies for the award of contract for setting up concurrent maintainable Information Technology Data Center (ITDC). The proposal should cover new retrofit covering power, cooling and Data Center monitoring infrastructure and entire active and passive infrastructure deployment to achieve smooth and uninterrupted data center operations 24x7. The proposal should cover all aspects for eliminating all single point of failures in power and cooling, with best possible and maximum protection level overall (hereinafter referred to as “the Goods”) and for installation, configuration and after-sale support of said Goods (hereinafter referred to as “the Services”).

The DC equipment (Hardware)and its Data Center Infrastructure Management (DCIM) Software will be delivered and deployed in PTA HQ, Islamabad.

Detailed specifications of above-mentioned items are provided at Annex-C of this document. Notice of the bids issued on PTA’s/PPRA’s websites is an integral part of the tender document.

The bidder shall bear all costs / expenses associated with the preparation and submission of the Tender(s) and the Client shall in no case be responsible / liable for those costs / expenses.

**Clarification of the Tender Document**

The bidders can seek further information or clarification regarding the Tender Document, within 07 (Seven) calendar days after issuance of tender. The clarification and its replies will be shared with all prospective bidders on PTA Website and will also be communicated at pre-bid meeting on 8th September 2020, from 11:00 to 12:00 hours at PTA Auditorium basement. Please register for pre-bid meeting.

Bidders should note that during the period from the receipt of the bid and until further notice from the Contact given herein this document, all queries should be communicated via the Contact and in writing (e.g. e-mail & letter) only.

Contact

Director (ICT), PTA.

+92-51-2878134

[salmanzafar@pta.gov.pk](mailto:salmanzafar@pta.gov.pk)

**anwar@pta.gov.pk**

## **Key Terms and Conditions for Data Center Facility**

### **1. GENERAL INFORMATION**

- a. Tender documents duly completed in all respect will be received on or before July 20,2020 up to 11:00 A.M. The submission and evaluation of bids will be carried out under the "Single Stage Two Envelop Procedure". Technical bids will be opened by Technical Evaluation Committee, at PTA HQs on the same day at 11:30 A.M, in presence of bidder's representative, who may choose to attend.
- b. Bids should be addressed to Director (ICT) Pakistan Telecommunication Authority (PTA), Headquarters F-5/1, Islamabad.
- c. A bidder will be selected after an open, competitive and transparent bidding process in accordance with Public Procurement Regulatory Authority (PPRA) Ordinance, 2002, and Rules, Regulations and Guidelines made thereunder.
- d. Bid will comprise of single package containing two separate sealed envelopes. One envelop will contain the "**Technical Proposal**" and the second envelop will contain the "**Financial Proposal**". After technical evaluation, technically qualified bidders will be informed the date, time and venue for the opening of financial bids. Financial bids of technically disqualified bidders will be returned un-opened.
- e. Bidder shall quote for turnkey solution for Rated – III Data Center (all the equipment as per mentioned specifications in Bill of Quantity (BoQ) and compliance to the design requirements).
- f. The Bidders name must be on Active Taxpayers List (ATL) of FBR for Income tax and sales tax as on the date of bid submission and onward throughout the period of contract in compliance of the Eligible Bidders (Tax Compliance) Regulations, 2015.
- g. The Bidder shall provide an undertaking that the Bidder itself or its partner in case of Firm have not been declared black listed by any Government/Semi-Government institutions.
- h. **PTA** shall not entertain incomplete or partial bids.
- i. Proposals shall be submitted in English language
- j. All prices mentioned in the Financial Proposal shall be in Pak Rupees (PKR).
- k. Each page of the Technical and Financial Proposal shall be signed by an authorized representative of the Bidder. The representative's authorization shall be confirmed by power of attorney accompanying the proposal.
- l. Bidder is responsible to provide the complete solution for Rated – III Data Center. All items part of the proposed design should be mentioned in quoted BoQ and financials. Note that

provided BoQ and specifications are minimum requirements that must be compliant while complete solution remains responsibility of bidder

m. **Annex-A, Annex-B, Annex-C and Annex-D** are integral part of technical and financial proposals, which shall be read/filled carefully, signed and stamped by the bidders. Further, details of the Annexures are mentioned below:

- i. **Annex-A** consists of mandatory requirements for bidder(s)
- ii. **Annex-B** consists of technical capabilities of bidder(s), which has total 100 marks, whereas minimum qualifying marks are 70%
- iii. **Annex-C** consists of technical evaluation of the product and bidder(s) may quote equal or higher specs, however, quoting lower specs shall disqualify the bidder.
- iv. **Annex-D**, comprises of financial bid format, to be followed by all bidders, the bidder should quote its rates clearly for each item, in the financial proposal in both figures and words without any ambiguity.
- v. **Annex-E** is comprised of Agreement/Contract
- vi. **Annex-F** is comprised of Non-Disclosure Agreement.

## **2. BIDDER'S INFORMATION**

Bidders shall submit of following documents /information with relevant authorities;

|   |   |
|---|---|
| In case of Company                            | 1. Incorporation certificate from Securities and Exchange Commission of Pakistan (SECP).<br>2. Valid NTN and STN Certificates |
| Address<br>_____<br>_____                     |   |
| Telephone No                                  |   |
| Fax No  |   |
| Primary contact person<br>Name, phone, email: |   |

## **3. EVALUATION CRITERIA**

- a. Technical bids shall be opened and evaluated by Technical Evaluation Committee in view of Annex-A (mandatory requirement), Annex-B (Bidder Capability) and Annex-C (Technical Specification). Proposals complete as per Annex-A shall be evaluated and thereafter subject to

obtaining at least 70% in Annex-B and fully compliant with Annex-C, shall be eligible for the participation in financial bid opening.

- b. Financial bids shall be opened and evaluated by Procurement Committee of PTA i.e. PC-I or as the case may be on the basis of criteria given in Annex-D.
- c. Work will be awarded to financially lowest bidder.
- d. If two or more bidders quote equal lowest price in financial proposals, then the work will be awarded to the one having higher technical marks in technical evaluation.
- e. In case of refusal to sign contract by successful bidder the client may award the contract to second financially lowest bidder subject to willingness of the 2nd lowest bidder to match the lowest bid of the first lowest bidder availability of budget and availability of time and subject to submission of retention money as specified in tender document. In such case bid security will be forfeited by PTA.
- f. The bidder should quote its rates clearly against each item including all applicable taxes, duties etc, in the financial proposal in both figures and words. However, the total aggregate amount of bid will be considered for evaluation/competition.
- g. Technically qualified/successful bidder(s) shall be notified in advance and invited for opening of the Financial Proposal(s). The Financial Proposals will be opened at the time and venue indicated by the Client (i.e. PTA) in the presence of the Bidders or their authorized representatives if they choose to attend. However, the financial proposals/bids of the technically disqualified bidders will be returned unopened to the bidders before opening and evaluation of the remaining financial bids.
- h. Financial Proposal evaluation will be conducted under the existing Public Procurement Rules. The Price will include all applicable duties, taxes etc. .
  - i. In cases of discrepancy between the cost/price quoted in Words and in Figures of a bid, actual quoted cost of all items will be calculated and aggregated by the PTA's Purchase Committee - I (PC-I) and will be taken as the total bid price inclusive of all applicable taxes. This evaluated price will be shared with all participants.
  - ii. In evaluation of the bid of an imported item, the price will be determined and considered inclusive of the customs and other import duties etc.
  - iii. The Client will not be responsible for any erroneous calculation of taxes and all differences arising out as above shall be fully borne by the Successful Bidder. However, any subsequent changes in rates or structure of applicable taxes by the Government of Pakistan at any time during execution/evaluation period should be followed.
- i. Bidder should quote its rates clearly in the financial proposal both in figures and words against each item separately in financial proposals Annex-D.
- j. Definition of the terms set forth below for the purposes of this Request for Proposal (RFP), shall be as follows:

- i. “corrupt practice” is the offering, giving, receiving or soliciting, directly or indirectly, of anything of value to influence improperly the actions of another party;
- ii. “fraudulent practice” is any act or omission, including a misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain a financial or other benefit or to avoid an obligation;
- iii. “collusive practice” is an arrangement between two or more parties designed to achieve an improper purpose, including to influence improperly the actions of another party;
- iv. “coercive practice” is impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party;
- v. “obstructive practice” is deliberately destroying, falsifying, altering or concealing of evidence material to the investigation or making false statements to investigators in order to materially impede PTA investigation into allegations of a corrupt, fraudulent, coercive or collusive practice; and/or threatening, harassing or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation.

#### **4. BID SECURITY AND RETENTION MONEY**

- a. Bid security will be equal to 4% of the total bid amount and will be in the shape of pay order / demand draft in favor of Pakistan Telecommunication Authority, Headquarters, Sector F-5/1, Islamabad. Bid security shall only be attached with the financial proposal otherwise proposal will not be accepted.
- b. Bids without Bid security will be rejected without any right of appeal.
- c. Bid security of unsuccessful bidders will be returned after award of supply order to successful bidder.
- d. Retention money equal to 10% of total contract value will be submitted before signing of contract. Retention money will be kept against warranty and support period i.e. (3 years) and will only be released after successful completion of warranty period and on issuance of the Performance Certificate by ICT Directorate and Technical Supervisory Committee.
- e. Bid security will be forfeited if successful lowest bidder is unable to sign the Contract within twenty-one (21) calendar days after issuance of Letter of Intent and unable to deposit the retention money.
- f. In case of cancellation of Supply Order due to default of the successful bidder, the Bid security shall be forfeited in favor of PTA.
- g. Retention money shall be submitted in shape of pay order / demand draft in favor of Pakistan Telecommunication Authority, Headquarters, Sector F-5/1, Islamabad.

- h. If selected bidder is not able to commission the systems as per industrial best practices or have provided the under rated or under quality (substandard) equipment, retention money will be forfeited and supply order will be rejected, further to add the following conditions shall also apply to forfeit of retention money.
- i. If the Contractor commits a default under the Contract;
  - ii. If the Contractor fails to fulfill the obligations under the Contract;
  - iii. If the Contractor violates any of the terms and conditions of the Contract.
  - iv. If Blacklisting procedure by the client is being initiated against the contractor.

## **5. PRICES**

- a. The bidder should quote its rates clearly in Pak Rupees inclusive of all applicable taxes, duties etc in the financial proposal and amount in both figures and words as per format attached at Annex-D
- b. The rates quoted shall remain valid for 120 days from the date of opening of Technical Proposal.
- c. PTA will not bear transportation/carriage charges or any other charges and vendor would be bound to make all the deliveries at PTA HQs, F-5/1, Islamabad.

## **6. PAYMENT PROCEDURE**

- a. No advance payment shall be made against the supply of equipment / software mentioned in the tender document.
- b. Payment shall be made on provision of invoice/bill as per the schedule mentioned in 6(d).
- c. Payment shall be subject to withholding of applicable taxes as per government rules and after successful completion of milestones mentioned in 6(d) and subject to Performance Certificate from ICT directorate and Technical Supervisory Committee.
- d. Deliverables & Payment Milestone for Data Centre Facility is mentioned as under:

| Activity  | Payment Schedule                           | Delivery dead line       |
|---|--|--------------------------|
| <b><u>Activity 1:</u></b> <ul style="list-style-type: none"> <li>✓ Site survey, design &amp; drawings</li> <li>✓ Project Management Document/ Other documents</li> <li>✓ Completion of Civil Work</li> <li>✓ Training on DC Deployment</li> <li>✓ Delivery of DC Equipment</li> </ul> | 35 % of the quoted financial bid (Annex-D) | T = 120 days             |
| <b><u>Activity 2:</u></b> <ul style="list-style-type: none"> <li>✓ Commissioning of DC Equipment</li> <li>✓ Installation and Configuration</li> <li>✓ Training on DC Operations</li> <li>✓ Issuance of Provision Acceptance Test</li> </ul>   | 35 % of the quoted financial bid (Annex-D) | T + 60 days (180 - days) |



|   |  |                           |
|---|--|---------------------------|
| <b>Activity 3:</b><br>✓ Physical Migration of Server Room<br>✓ Provision of Network Distribution<br>✓ GO Live<br>✓ Request of Issuance of FAC | 30 % of the quoted financial bid (Annex-D)   | T + 105 days (225 - days) |
| <b>Activity 4:</b><br>1. Release of Retention Money   | Retention money (i.e. 10% of the contract price) will be released after expiry of the contract |                           |

**Note:** if Data Centre Equipment has been delivered and commissioned earlier than scheduled days as mentioned in execution plan of agreement, then the payment will be processed after submission of invoice.

**Note:** Trainings may be rescheduled on mutual consent with contractor.

**(The 3 years' warranty of the delivered equipment and SLA will start after issuance of Final Acceptance Certificate (FAC)) by the Director ICT on the recommendations of Supervisory Committee.**

## **7. EQUIPMENT**

- a. All the equipment required in this tender document should be new, not used or refurbished. The components of the equipment should be assembled and verifiable by the manufacturer.
- b. DC equipment should be arranged through the legal channels by clearing all customs/duties/taxes (if any) levied by GoP.
- c. Verification of originality from principal manufacturer will be completed through email or in written letters or through principal manufacturer's website.
- d. Configuration, installation and maintenance for 3 years will be the responsibility of the contractor.
- e. All DC Equipment and its rating will be checked against the Data Sheets on Principal manufacturer's website and any anomaly/issues found will be communicated to the contractor and its principal. Both will be asked to replace the under rated equipment, failing to replace the under rated equipment within 4 weeks will lead to the termination of the contract and the Hardware equipment will become the property of PTA, and retention money will be forfeited in favor of PTA.

## **8. DELIVERY PERIOD**

- a. Delivery of hardware items shall be made as per schedule defined in 6(d) after issuance of supply order for Data Center Facility.
- b. Successful bidder will be responsible for the safe supply of equipment at PTA HQs, Islamabad with the provision of warranty / support as mentioned in the bidding agreement.

## **9. AUTHORIZED DEALER/PARTNER**

Bidder shall be an authorized dealer/partner of the quoted brand. Current Certificate of dealership / partnership from principle manufacturers with Manufacturer Authorization letter in favor of PTA is required in the name of the authorized dealer / partner of the manufacturer.

**10. WARRANTY**

- a. Contractor will be responsible for the provision of free at least 3 Year on-site warranty / support (24x7) with labor and parts for all items including DC facility.
- b. Configuration, installation and maintenance for three years will be the responsibility of the successful bidder. The warranty period will be considered from the date of issuance of FAC.

**11. PTA'S RIGHTS**

PTA may reject all bids or proposals at any time prior to the acceptance of a bid or proposal. PTA 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.

**12. PENALTY**

- a. If the successful bidder fails to complete the project or supply the equipment within the given time-lines as per execution schedule. Then a penalty of 1% per day of retention money will be charged up to maximum period of 45 days, both for activities/project. The maximum time which can be granted is 45 days for complete project. Thereafter, the case will be referred to PTA's Supervisory Committee for final decision of either granting more time to contractor with 1% penalty per day or the termination of contract after forfeiture of retention money.
- b. If the penalty amount reaches to 10 % of the contract value and project is still not complete then retention money will be forfeited, contract will be terminated and blacklisting procedure against the contractor will be initiated.
- c. Delivery of hardware in case of events or such circumstances which are beyond the reasonable control of a party and prevents or cause to prevent a Party from complying with any of its obligations shall be deemed and considered as Force Majeure, this period will be exempt from any penalty and will be treated accordingly.
- d. A penalty of 1% of the retention money per day will be charged if the faulty hardware replacement time exceeds the time mentioned in the certificate provided as per Annex-B-part B-(3), during the warranty period.
- e. In case of failure to perform as per given SLA during the Warranty and support services period, Client shall be authorized to impose penalty @ 2,000/- per hour, which will be deducted from the retention money. The contractor will be informed about imposition of such penalty on monthly basis.
- f. Contractor on issuance of FAC either adjust the imposed penalties in the 3rd payment or have to recoupe the retention money to 10% before start of warranty and support period.

- g. In case of failure to perform as per PTA requirements during the maintenance and support services period, PTA reserves the right to cancel the contract and forfeit retention money in favor of PTA.

### **13. 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. Financial bid is submitted without the required Bid Security.
- b. Bids are received after specified date and time.
- c. Specification and other requirements are not properly adhered to or different from those given in the tender documents.
- d. GST and NTN certificates are not attached.
- e. Contractor is not in Active Taxpayer List (ATL) of FBR.
- f. Relevant experience is less than Three years.
- g. Sales and support Service Centers not in Islamabad/Rawalpindi.
- h. contractor is not an authorized dealer/partner and warranty provider of the principal manufacturer for Pakistan as per section 9 of this document.
- i. Any inferior product / spec / requirement that mentioned at Annex-C.
- j. Non-quoting International Branded items for any of the above hardware item will lead to disqualification.
- k. Non-production of Current principle manufacturer certificates with authorization letter.
- l. Ex-Stock Equipment is not allowed; new verifiable order shall be placed for the all equipment.
- m. Non-production of Manufacturer Authorization letter as a Partner.
- n. Quoting under rated equipment i.e. cables etc.

### **14. ARBITRATION**

In case of any dispute or conflict between the bidder and client (PTA) pertaining the bid, the case will be referred to the Grievances Committee of PTA. If the decision of committee is not acceptable by the contractor the case shall be referred to PTA's Authority whose decision will be final.

### **15. PRE-PROPOSAL BIDDER'S QUERIES**

The bidder requiring any clarification(s) regarding queries related to tender documents may notify to in writing. The Director ICT on the recommendations of Supervisory Committee will respond to any request for clarification which are received well before (minimum 03 working days or more) the deadline for the submission of bids. PTA responses to queries will be published at PTA's Official website (<https://www.pta.gov.pk>) for the information to all prospective bidders (if not already clarified in the tender if deemed necessary for the bidder). PTA reserves the right

to request clarifications in support of the bids from any or all bidders to this tender document and their proposals. A pre-bid query session will be arranged in PTA well before the due date and notification of the pre-bid meeting will be published on PTA web-site.

#### **16. AFFIDAVIT**

Affidavit on Judicial Paper to the effect that the firm has not been blacklisted by any government/semi government/autonomous body or company. This would also be verified from the website of PPRA.

#### **17. RIGHTS RESERVED**

Pakistan Telecommunication Authority Islamabad reserves the rights to cancel the bid, accept or reject any bid as per PPRA Rules.

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

- a. PTA has constituted a Grievance Committee 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 bidder feeling aggrieved by any act of PTA after the submission of his bid may lodge a written complaint concerning his grievances not later than ten days after the announcement of the bid evaluation report.
- c. The committee shall investigate and decide upon the complaint within fifteen days of the receipt of the complaint.
- d. Mere fact of lodging of a complaint shall not warrant suspension of the procurement process.
- e. Any bidder not satisfied with the decision of the grievance committee may lodge an appeal to the PTA Authority whereas the decision of the Authority shall be final.

#### **19. CHECKLIST**

|           |   |          |
|-----------|---|----------|
| <b>1.</b> | Bid Security attached with financial bid in shape of bank draft/pay order.                    | (Yes/No) |
| <b>2.</b> | Relevant documents for Annex A-C  | (Yes/No) |
| <b>3.</b> | List of such projects handled with copies of supply order.                                    | (Yes/No) |
| <b>4.</b> | List of clients with telephone numbers and addresses.   | (Yes/No) |
| <b>5.</b> | List of employees including technical staff for this project.                                 | (Yes/No) |
| <b>6.</b> | Affidavit on legal paper for not being black listed.  | (Yes/No) |
| <b>7.</b> | Copies of authorized dealership/partnership etc. of the principal manufacturers for Pakistan. | (Yes/No) |
| <b>8.</b> | Specification and other requirements are met (Compliance)                                     | (Yes/No) |
| <b>9.</b> | Sales and support Service center is at Islamabad/Rawalpindi                                   | (Yes/No) |

**Director (ICT)**

**Mandatory Requirements**

| S.#. | Requirement/ Document to be attached   | Compliance?<br>Yes/ No |
|------|--|------------------------|
| 1    | Bidder has to produce Sales Tax and Income Tax Registration.   |                        |
| 2    | Bidder also should be an Active Tax Payer of FBR.  |                        |
| 3    | Location of Sales and support Service center at Islamabad/Rawalpindi   |                        |
| 4    | The undertaking is to be submitted that Bid Security has been attached in the Financial Proposal in the form of Demand Draft or Pay Order in favor of Pakistan Telecommunication Authority, Islamabad.   |                        |
| 5    | Manufacturer Authorization Letter is required for all participating bidders/contractors certifying that fresh order shall be placed for the equipment and no ex-stock equipment shall be provided.   |                        |
| 6    | Minimum Three years of relevant local / international experience of the bidder is required.  |                        |
| 7    | Bidder must have at least three (03) datacenter certified resources. Annex-B part 4 referred.  |                        |
| 8    | Submission of affidavit on Stamp Paper to the effect that the firm has not been black-listed by any Government / Semi Government / Autonomous body or Company.   |                        |
| 9    | Bidder has successfully completed at least one (01) project and its corresponding Principal had carried out deployment of at least three (03) projects of establishment of IT Data Center Facility implementation of similar or larger in size at Pakistan/International (Proof of PO/Contract & allied documents is mandatory). |                        |
| 10   | All Software Licenses offered should be perpetual i.e. Software functionality shall work after the completion of 3 years support and warranty (Certificate has to be attached)   |                        |
| 11   | UPS, Cooling Units, Cabinets, DCIM and Power Distribution Module should be from same principal manufacturer.   |                        |
| 12   | Certificate must to be provided stating that no part of Hardware and Software has been manufacturer/assembled or developed in India and Israel.  |                        |

**Annex-A is Mandatory.**

Note: All supporting documents must be attached with technical proposal.  
Non-fulfilling any of the above requirement will result into disqualification of bid.

**Please attach all Supporting Documents Serial wise**

**Technical Capabilities of Bidder -DC Facility**

| Part B) General Evaluation*   |   |            |               |   |
|---|---|------------|---------------|---|
| Sr. #   | Attributes  | Max. Score | Points Earned | Criteria  |
| 1   | Detail of Offices   | 10         |               | Firm has sales and services offices at Islamabad/Rwp (4 marks), Lahore (3marks) and Karachi (3 marks)   |
| 2   | Contractor must have deployed at-least one (1) Data Center project of similar scope in last three (3) years of 06-08 Racks or above configuration. (documentary proof be provided i.e. Supply Orders and completion certificate etc.) | 20         | 10+10         | 10 Marks for (1) mandatory project and 10 marks for additional 2 <sup>nd</sup> successfully completed project.                                    |
| 3   | Replacement time for faulty under warranty equipment/parts <b>(Certificate has to be produced)</b>  | 15         | 15            | 15 marks for Next Business Day (NBD), otherwise no marks, vendor must change the faulty part as per NBD after notified from PTA ICT directorate.  |
| 4   | Certified Technical staff CDCS/CDCP/CTDC, TIA 942, etc. technical staff /bidder organization ,valid in the last three years i.e. the technical staff certificates should be passed in last three years.                               | 20         |               | Relevant technical certified staff in Pakistan available and deputed for this project. (4 marks per technical staff )                             |
| 5   | Firm Experience (minimum 3 years’ experience required - National)   | 15         | 15            | (5 marks per year, beyond 3 years’ experience), Maximum of (3) years marks will be allocated. The mandatory three years does not carry any marks. |
| 6   | Solution Presentation, understanding of the requirement and equipment compliance to the deliverables given in RFP would be rated as Excellent, Very Good and Good and Zero marks  | 20         | 20            | Solution Presentation to the committee for proof of concept.  |
|   |   |            | 15            |   |
|   |   |            | 10            |   |
| Sub Total   |   | 100        |               |   |
| Minimum qualifying marks are 70% in above table whereas Annex “C” shall be compulsory. All supporting Documents to be attached for all relevant pages of Annex-B. |   |            |               |   |

**TECHNICAL EVALUATION-**

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(Data Center Facility)

(To be included in Technical Proposal)

PTA Data Center Infrastructure  
Scope of Work



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## 1. PTA Objectives

The scope of this RFP is to select a system integrator to build Data Center at Ground Floor of PTA Head Quarters Islamabad as per the guide lines given in this RFP

- 1.1 PTA intends to build a scalable, highly available and energy efficient data center and relocation of all existing workloads and systems from existing Server Rooms to established Data Center.
- 1.2 Bidders to note that PTA expects a proposal based on turnkey solution and shall include complete design documentation, installation, commissioning, migration, implementation, configuration, testing and integration services in the proposal as needed.
- 1.3 This RFP aims to procure all the key elements including products and services for this upgraded data center including but not limited to the below:
  - 1.3.1 Data Center layout design and associated civil works in accordance with load bearing capacity of floor.
  - 1.3.2 Redundant power system for the data center.
  - 1.3.3 Cooling and containment.
  - 1.3.4 Cabinets and PDU (power distribution units).
  - 1.3.5 Structured cabling with Distribution.
  - 1.3.6 Fire detection and suppression.
  - 1.3.7 (Very Early Smoke Detection Apparatus) VESDA system.
  - 1.3.8 CCTV and Access Control
  - 1.3.9 Monitoring system Data Center Infrastructure Management software (DCIM) for data center
  - 1.3.10 NOC Software Solution
  - 1.3.11 Professional services including
    - 1.3.11.1 Migration of existing Server room infrastructure.
    - 1.3.11.2 Warranty and support services.
- 1.4 The bidder to ensure that the design should meet the guidelines like:
  - 1.4.1 American Society of Heating, Refrigerating and Air conditioning Engineers (ASHRAE) cooling standards
  - 1.4.2 Institute of Electrical and Electronics Engineers (IEEE) standards for Electrical
  - 1.4.3 Telecommunication Industry Association TIA- 942-B for Data Center
  - 1.4.4 International Standard Organization ISO-27001:2013 standards for processes and procedures
  - 1.4.5 Under writers Laboratory/CE Standards etc.
- 1.5 PTA expects the bidders to come up with design on how to achieve this in a modular fashion while using as much as the existing resources as possible.
- 1.6 PTA expect the solutions to show the benefits of the solutions with various factors like PUE (power usage effectiveness) heat flow and pressure management etc.
- 1.7 The proposed DC solution should be designed with industry best practices around high availability, scalability, redundancy at physical and logical level along with the right level of security.

- 1.8 The proposal for the upgraded data center should include the migration of the complete existing PTA data center to the established data center including LAN, network, and related hardware infrastructure. PTA IT infrastructure is running critical applications and services. PTA would like to have a minimum downtime/interruption of services during the migration and hence puts a lot of emphasis for the bidder's capabilities and methodology for such migrations.
- 1.9 One of the main objectives for this project is to improve PTA IT operations by creating an enterprise class NOC to help manage and monitor complete IT infrastructure. PTA thus intends to deploy a unified monitoring tool to monitor all its IT assets as part of the scope of this RFP, and the DCIM solution must be provided by the principle manufacturer.
- 1.10 The bidder must conduct a site survey before bid submission and do the load bearing analysis for the proposed site. It shall be bidder's responsibility to enhance the load bearing capacity if needed, before the commencement of other project tasks and deliverables. PTA's civil engineer of Admin Directorate will provide the building drawings and necessary assistance if required.
- 1.11 The DC facility should be secure by having two entrances one for the main DC premises with (01) hour fire rated glass door and industry standard fire rated doors for DC and as mentioned in BoQ
- 1.12 An automated security door with RFID entrance shall be installed immediately after automatic door mentioned in 1.11.

Bidder must provide all the drawings including but not limited to (1) Cabling (2) Power (3) Fire Suppression and Detection (FSD) (4) Closed Circuit Television (CCTV) etc. before and after installation.

## **2. PTA Existing Environment**

For migration of existing infrastructure, bidders are encouraged to survey existing server rooms.

3. Data Center Layout - General Guidelines

3.1 The upgraded DC will be located at the Ground floor of the main building at the location highlighted in the following diagram. Cold or hot aisle containment.

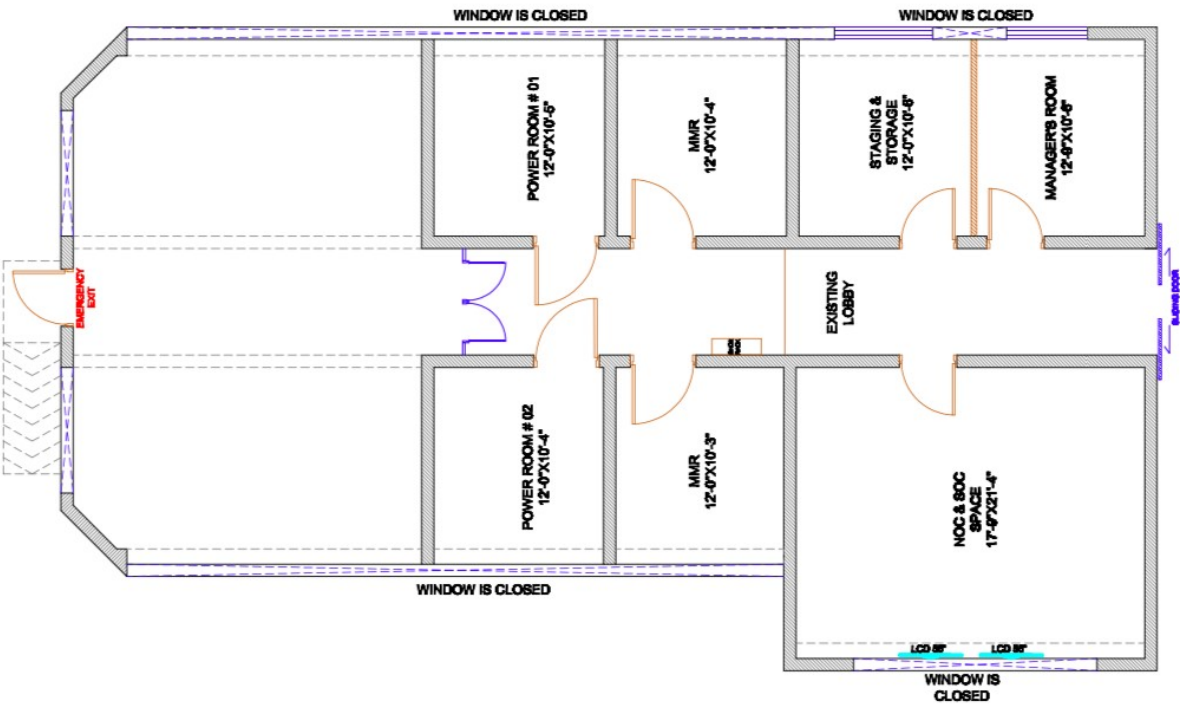
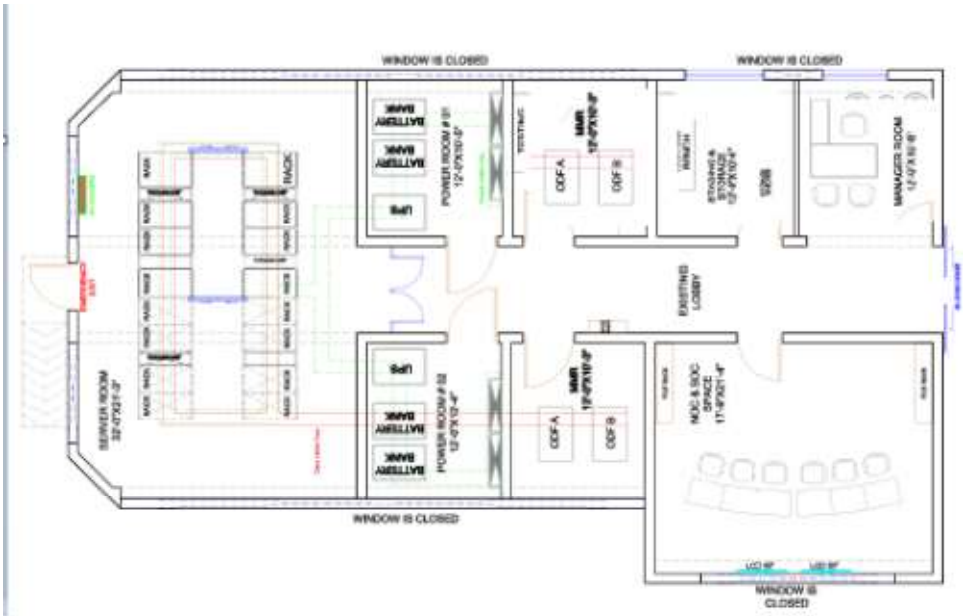


Figure 1 Sample Layout of proposed PTA Data Center





3.4.3 Office Furniture for the manager's room including office desk, comfort chairs with armrest, guest sitting should be A Category as per the given samples and will be pre-approved by PTA.

### **3.5 NOC/SOC Room**

3.5.1 A separate NOC/SOC room for 6 people with video wall Display Units for physical and environment monitoring. Considerations for this room are:

3.5.2 A separate Operation Center (NOC/SOC) for physical and environmental monitoring of the whole facility shall be provided.

3.5.3 All equipment, cabling and other infrastructure requirements for the NOC/SOC operations.

3.5.4 Seating Arrangements for 6 staff members and 1 team lead.

3.5.5 Two (02) Comfort Cooling as mentioned in BOQ.

3.5.6 Dell/HP or equivalent workstations all in one with intel core i7 9th Gen processor, 16 GB RAM 2666 MHz with windows 10 pro for workstation 4 cores plus, with NVidia graphics card 1 GB, with 1 TB SSD Hard Drive.

3.5.7 Each workstation is required to be provided with dual 21 inches LED monitors.

3.5.8 The contractor will also be responsible for providing four (04) 14inch laptops of latest available specification with at least 16 GB of RAM and 256 GB SSD for NOC operations along with required console cables.

3.5.9 All Furniture for NOC/SOC and manager's room including comfort chairs with armrest should be A Category-A, as per the given samples and will be pre-approved by PTA. How many chairs etc

### **3.6 Meet ME Room (MMR)**

3.6.1 MMR shall be proposed for the placement of connectivity hardware including but not limited ODF, DDF and/or layer 2/3 switches, for within data center as well as external connectivity, having minimum of one (01) Network Racks same brand and with 16 Amp 2 Rack mountable Static Transfer Switch (STS) for single power devices same brand or APC, vertiv or equivalent. With vertical and horizontal cable management solution. MMR rooms will be provided with 2 ton of roof mounted comfort reversible cassette of renowned brands like Daikin, Acson, LG or equivalent.

### **3.7 Data Center Facility**

This room will host all the data center active and passive equipment's including but not limited to.

3.7.1 The proposed whitespaces shall be efficiently designed to meet PTA existing and future requirements from the first day

3.7.2 Whitespace shall be designed from maximum fire protection, physical security and safety purposes.

3.7.3 Bidders shall clearly mention the design parameters of this space for elements like cooling, FSD, CCTV etc.

3.7.4 Smart lights motion sensor shall be installed.

3.7.5 The doors of DC should be imported 2-hour Fire rated.

### **3.8 UPS Rooms**

- 3.8.1.2 X UPS rooms for the placement of electrical panel, batteries and UPS equipment etc.  
The doors of UPS room should be imported 2 hr Fire rated.
- 3.8.2 Rack mounted batteries shall also be placed in UPS room.

### **3.9 Storage and Staging Area**

- 3.9.1 Bidders are supposed to propose a storage and staging room.
- 3.9.2 This is a secured place where deliveries can be stored for a short to medium term time period with the following features:
  - 3.9.2.1 Tech benches and storage racks
  - 3.9.2.2 Climate controlled.
  - 3.9.2.3 Redundant and protected power & network connections.
  - 3.9.2.4 Wide Access imported Fire rated Door with Fire rating of (02) hours.
- 3.9.3 Complete electrification, lighting and 2 ton2-ton roof mounted DC inverter as mentioned in BOQ shall be the responsibility of the bidder.
- 3.9.4 PTA expects the bidder to perform a detailed structural survey to ensure the load bearing capacity of the proposed DC location to ensure the safety of the facility. Any reinforcement needed for this shall be highlighted to PTA before the commencement of work and shall be included in their proposals.
- 3.9.5 Contractor must complete the site survey two weeks before the closing date and any clarifications can be sent through letter or email and shall also come at PTA HQs to meet the focal persons for discussion. i.e. Director (ICT) and its staff.
- 3.9.6 Contractor must do the site survey before the pre-bid meeting and any clarifications can be sent before the Pre-bid meeting to be held on \_\_\_\_\_, please also registered for pre-bid meeting.

## **4. Power System for the Data Center**

**(The power infrastructure i.e. power cables, ATS, LT panel shall be laid down for 12+4 racks i.e. must support 96 KW)**

This section provides PTA power systems requirements; bidder is expected to improve upon it.

### **4.1 Power Requirements:**

- 4.1.1 Bidder shall install new ATS and LT panel distribution to serve the DC load through two separate electrical paths starting from ATS to racks.
- 4.1.2 Bidder shall supply and install new ATS and LT Panel and connect with the existing PTA power passive infrastructure.  
Currently PTA has:
  - 4.1.2.1 01 Separate Transformer having 630KVA rating.
  - 4.1.2.2 02 Gen Sets having 360KVA and 65KVA ratings.
  - 4.1.2.3 Contractor is expected to visit the site and re-confirm the existing setup and proposed the right solution to reach to the required setup.
  - 4.1.2.4 Total IT load requirement for the 8 racks is 48 KW (6KW/Rack).
  - 4.1.2.5 PTA expects the bidder to design and plan all the passive infrastructure for 16 racks 120Kw. This includes but not limited to ATS, LT and associated cables till power distribution (output DB of the UPS).

4.1.3 Bidder shall install their new Electrical distribution panel with Surge Protection Device (SPD) for the Data Center load.

4.1.4 ATS and LT panel should be installed in existing PTA power room basement. Electrical panel should be installed in the UPS room of Data center to feed power for UPS, Cooling, lightning DB's etc. The panel should be indoor type with an IP rating of 42, fabricated out of 16 SWG sheet and powder coating. The circuit breaker will be four pole as per contractor's design. All meters should be digital display type. Ammeters & voltmeter selector switch should be complete with front plate. Indication lamp should be suitable for flush mounting complete with base, 230V incandescent lamps will have resettles of suitable color, crystal type. The following are the minimum requirement. Please design as per BOQ and in line with Rated-III/Tier 3 Data Center requirements and sizing as below.

4.1.4.1 Main Tap Off/Utility Box.

4.1.4.2 Phase Reversal Protection Panel

4.1.4.3 Data center Power Distribution Unit.

4.1.4.4 NOC/Lighting DB.

#### **4.2 Power Cables**

4.2.1 Bidder shall propose the shortest and safest route for the power cable. To supply and install Cable Tray/Cable ladder powder coated with hangers and cover for all power cables.

4.2.2 Bidder shall provide the complete SLD from LT panel to Data Center including but not limited to UPS, racks, lighting system and cooling system.

4.2.3 Bidder shall provide the new power cable calculation according to Data Center load.

4.2.4 Bidders to offer Pakistan/Fast Cables in their solution and provide the data sheets to confirm the ratings.

Note: Please conduct a survey for exact sizing and measurements.

#### **4.3 UPS (Uninterrupted Power Supply)**

Total maximum power draw in the Data Center is expected to be 48KW (For 8 Cabinets).

Bidder shall propose 02 UPS 60Kw/Kva (for two separate paths) with following features:

4.3.1 Separate power path till the Data Center. In case of failure of any UPS, the other UPS should take over the full load. Each UPS support 15 min backup time at 100% full load.

4.3.2 02 UPS to cater for 48 KW each parallel scalable to 240KW or above configured to operate in 2(N) Mode with alternate paths having 30mins collective backup time.

4.3.3 The system shall also comprise of user VRLA UPS battery with advanced battery management, and LCD interface display. The UPS efficiency should be >95% at 50 - 100% load.

4.3.4 UPS shall comply to highest performance standards which include, EN 50091-1, EN/IEC 62040-1-1,, EN/IEC 62040-2 EN/IEC 62040-3, ,



- 4.3.5 The UPS shall be provided with WEB/SNMP for communication and provides communication cables and various alarm signal output terminal supporting the use of interfaces.
- 4.3.6 The UPS shall have its PCBs conformably coated to protect from environmental impact.
- 4.3.7 The UPS shall have and inbuilt Load Test feature without the need of an external load bank
- 4.3.8 15 min back up at current IT load for each UPS, later ups and battery racks will be added accordingly. Batteries shall be integrated with DCIM for continuous monitoring.

#### **4.4 Auto Transfer Switch Panel**

- 4.4.1 Standard ATS designed for total Data Center Load with all safety features
- 4.4.2 Complete installation (RCC Foundation, power & control cable provisioning & laying) with transportation is required, 2 earth pits for each along with ground cable, input / output power cable as per the requirement & standards.

### **5. Cooling and Containment System for the Data Center**

- 5.1 The cooling solution of DC room should be based on containment (Cool or Hot) with DX based In-Row Cooling to meet the peak load of IT equipment in the Server Room.
- 5.2 Redundancy (N+1) of the design.
- 5.3 The In-Row unit should have:
  - 5.3.1 Airflow of at least 3200 CFM /5400 or above and capability to go up to 30kW or more,
  - 5.3.2 Combined Cooling capacity of all units sufficient to cater the total IT load of 48kW with N+1 redundancy
  - 5.3.3 Dual input (400V/400V)/3Ph/50Hz)
  - 5.3.4 Variable speed fans.
  - 5.3.5 Modules should be equipped with two or more fan assemblies.
  - 5.3.6 Frequency Controlled Motor
  - 5.3.7 Electrical Panel: The electrical panel should contain the contactors, starters, overload protection devices, and input power disconnects.
  - 5.3.8 Main Power Circuit Breaker(s)
  - 5.3.9 Network Management Card
  - 5.3.10 Evaporator Freeze Protection
  - 5.3.11 Predictive Failure Warnings
  - 5.3.12 High Return Air Temperature Capability
  - 5.3.13 Refrigeration System Monitoring
  - 5.3.14 Digital Scroll / Brushless VFD Scroll / DC inverter Compressors: Refrigeration system should contain a master controller for greater efficiency and accuracy. Suction and discharge pressures should be monitored and electronically controlled.
  - 5.3.15 Easy filter replacement without the need to shutdown equipment.
  - 5.3.16 Field replaceable fans,
  - 5.3.17 high Energy Efficiency Ratio,
  - 5.3.18 Support SNMP/Modbus protocol for management and monitoring.
- 5.4 The condenser should be able to be placed outside or rooftop.

- 5.5 The containment solution should be able to maximize the return air temperature to the cooling units and should be capable to actively control the flow of air.
- 5.6 All system components shall be certified as suitable for this data center environment supporting International Standards.
- 5.7 The cooling units should be proposed with a complete management software for detailed troubleshooting, configuration management and other management functions as per the industry best practices for the cooling equipment.
- 5.8 The VFD shall automatically modulate through a range between 20 and 100 Hz to accommodate varying load conditions. (Capacity modulation between 10-100%)
- 5.9 The indoor unit shall come equipped with a color touchscreen display to allow the user to navigate between menus, select items, and input information.
- 5.10The unit shall include a network management card, embedded inside the user interface, to provide management through a computer network through MODBUS or BACnet TCP/IP. Management through the network should include the ability to change set points as well as view and clear alarms.
- 5.11Group control shall automatically rotate units into standby mode based off run-hours when IT load is not high enough to require all units to be active.
- 5.12The unit shall support top or bottom piping connections
- 5.13The unit shall have built in condensate pump
- 5.14The unit shall have Electronic Expansion Valve for maximum efficiency
- 5.15The system shall be completely factory-tested prior to shipment. Testing shall include, but not be limited to: complete pressure and leak testing to ensure system integrity. Each system shall ship with a completed test report to verify completion of factory testing procedure. FAT will be ensured through one of PTA resource.
- 5.16Monitor and control sensors.
- 5.17The comfort cooling reversible roof mounted cassettes of DC inverter of VRF/VRV technology for Electric, Staging, MMR and NOC/SOC and Manager Room of renowned brand like Daikin, Acson, LG or equivalent shall also be included with the three (03) year of maintenance and support.

## 6. Cabinets & PDUs

The scope of Cabinets includes design, procurement, installation, implementation / grounding, testing and commissioning.

6.1 The table below provides summary for PTA cabinets and PDU requirements in phase-I.

| Sr No | Power System   | Size                |
|-------|----------------|---------------------|
| 1.    | Network Racks  | ~750/800x1200, 42U  |
| 2.    | Server Racks   | ~600x1060/1070, 42U |
| 3.    | Smart PDU's    | NA                  |
| 4.    | Blanking Panel | 1U/2U tool-less     |

Table 2 Cabinets and PDU Requirements

Note: slight changes in rack sized are allowed to accommodate different principle manufacturers after the discussions with Technical committee

- 6.2 PTA expects a design to have 8 racks (6 server and 2 network racks) in current rfp (phase1) and possibility of expanding to 16 racks (expansion plan). The proposals showing scalable and modular solution will be preferred in the design.
- 6.3 Installed racks /containment should have provision for expansion and for installation of any third-party rack.
- 6.4 Each IT Racks should have 2 x Vertically mounted smart metered PDUs with 32Amp single phase having 2 X 20 Power Outputs (C19, C13).
- 6.5 The racks shall support a load of >1,000 kg. The racks must have perforated front door, perforated split rear doors, two (02) side panels, roof with cable access holes, four (04) adjustable vertical mounting rails, four (04) vertical OU accessory mounting brackets, four (04) leveling feet and four (04) casters, baying and grounding hardware pre-installed by the manufacturer.
- 6.6 All weight bearing components shall be constructed from steel with a thickness no less than 1.0mm (19 gauge). All sheet metal parts shall be painted using a powder coat paint process. Plastic materials shall comply with good international standards. All interior components of the cabinets shall not have electroplated zinc coating to minimize zinc whiskers near active equipment.
- 6.7 The smart PDUs should have tool-less mounting pegs for easy installation and replacements in racks, there should be local metering display for real-time equipment connectivity and load balancing guidance as well as network management port to access and configure remotely via web, SNMP, and Modbus.
- 6.8 The Racks should be of same manufacturer as of in-row cooling Equipment and containment.
- 6.9 There should be vertical and horizontal cable managers in the cabinets for network cabinets only.

## **7. Cabling Design**

The scope of cabling solution includes design, procurement, implementation, testing and commissioning for complete cabling solution for PTA data center.

- 7.1 PTA is looking for a high density structured cabling solution for the existing and future requirements of the data center.
- 7.2 Primary and Secondary cabling must be installed within the data cabling containment system across separate routes to ensure that diversity is maintained at all times.
- 7.3 24 Copper Ports Cat6a from each server rack going to each NW rack in a scalable and redundant fashion.
- 7.4 12 fiber Ports sfp28 from each server rack going to each NW rack in a scalable and redundant fashion.
- 7.5 06 fiberports sfp28 and 06 QSFP28 ports from each NW Rack to each MMR Room rack in a scalable and redundant fashion.
- 7.6 25G design capable of scale to higher designs.
- 7.7 The products used must be compliant with industry standards on fire rating, Low Smoke-Zero-halogen, Flame retardant and Non-corrosive.
- 7.8 The data structured cabling solution must be compliant with industry standards EN 50173-5 and TIA 942

- 7.9 N+N redundancy with respect to data center network cabling and connectivity.
- 7.10 All nodes and cable bunches should be properly labeled as per international standards. The origin and ending of all nodes should be clear.
- 7.11 Grounding & Bonding System as per TIA/EIA 607-A.
- Note: The Structured cabling solution shall be complete covering (2) Network Racks with-in DC and (2) Racks in MMR Room. Please enclosed a complete solution as per given guidelines.

## **8. Fire Suppression and Detection System (FSD)**

- 8.1 Bidder will provide Fire Alarm / Detection system and Manual Fire extinguishers for ABC Classes of Fire in complete facility.
- 8.2 Bidder to provide HSSD in Data Center and Power Rooms and conventional system for rest of the areas in facility.
- 8.3 Automated Fire suppression and system (NOVEC or equivalent (European)) in Data Center/Server Room and Power Room.
- 8.4 Fire detection in all the rooms of the DC facility.
- 8.5 FSD is expected to have the following features:
- 8.5.1 Programmable temperature sensors should be provided.
  - 8.5.2 The detection and suppression systems within the premises shall be linked to the electronic monitoring system.
  - 8.5.3 The control panel should be programmable to allow adjustments to sensitivity and parameters, such as time delays, threshold, passwords and other features.
  - 8.5.4 Fire alarm monitors, control panels and notification mechanisms should be installed. Automated alerts when thresholds are reached should also be sent to the relevant staff through DCIM/management system.
  - 8.5.5 Addressable fire alarm panels shall have the capability to be connected to the EMS.

## **9. Security, Surveillance and CCTV**

- 9.1 Bidder will be responsible to supply, install and commission Access control system(ACS) with magnetic locks. The Biometric and RFID door readers and controllers should be mounted according to the design.
- 9.2 The detailed technical specifications of the products will be as follows.
- 9.2.1 Access control system shall be installed on doors as per design. The Main Access controller units (Door processing units)
  - 9.2.2 The monitoring of the access control will be done in NOC/SOC.
  - 9.2.3 All doors of facility will have (3 in 1) RFID + keypad + Biometric/Retina readers.
  - 9.2.4 IP based CCTV monitoring system for indoor / outdoor.
  - 9.2.5 IP Cameras should be HD (High Definition) and have a minimum resolution of 2 megapixel
  - 9.2.6 NVR for recording (03 Month)
  - 9.2.7 Entry Control - Integrated with CCTV for monitoring / permitting / denying facility access at critical entry points.

- 9.2.8 Multilevel authentication i.e. Password, Biometric / Retina Scan integrated with centralized command and control system for all rooms in datacenter facility.
- 9.2.9 Motion detectors with LED Motion Sensor Lights for main entrance of the facility, corridors and equipment areas, NOC/SOC, DC etc.

## **10. Monitoring System for Data Center - DCIM**

PTA Intends to procure a monitoring, and reporting system which provides detailed physical and logical monitoring of its IT infrastructure and applications to be used by PTA NOC and business teams. DCIM Suite Software to integrate and monitor all appliances installed in Data Center with perpetual license for required no of racks and nodes.

The DCIM suite shall be able to integrate with third party devices (SNMP v1/v3, Modbus IP enabled), and scalable to add more devices in future. The DCIM software shall show temperature of individual racks as well as data from cooling units, UPS, PDUs and all other connecting sensing devices and compute the data intelligently. The software shall be able to generate graphs, reports, alarms and warnings. The containment shall also humidity monitoring.

The DCIM data can be viewed through web browser with customizable viewing panes as well a desktop client.

### **10.1. DCIM Monitoring and Reporting Requirements**

- 10.1.1 The scope of the monitoring system includes the complete, the proposed data center infrastructure by the bidder including PDUs, Power & UPS, Batteries and Cooling components etc.
- 10.1.2 The system should support near/ real time monitoring of its SNMP supported devices, systems and applications.
- 10.1.3 The system should have the ability to define various thresholds and alerts.
- 10.1.4 Ability to configure polling intervals to minimize the monitoring overhead.
- 10.1.5 The system must support real time and historical data with the retention period of twelve (12) months.
- 10.1.6 The monitoring tool should be able to present the data in form of customizable dashboards in real time or user defined duration.
- 10.1.7 The dashboards should be customizable for various organizational levels of PTA ICT team and users.
- 10.1.8 Roles based access control should be implemented for the various users of the monitoring system.
- 10.1.9 The proposed system should be able highlight alerts and events information.
- 10.1.10 The system should be able to propagate/notify any event in form of an Email and SMS generation.
- 10.1.11 The system should provide a built-in reporting module which can generate customized reports using a scheduler, daily/weekly/monthly basis or on demand.

### **10.2. Deployment Requirements**

- 10.2.1 The system should be deployed Hardware/Software based with redundant power supply and completely secured. The bidder should assess the deployment of this system as per PTA requirements.

- 10.2.2 All software and hardware needed for this system to be deployed shall be bidder responsibility.
- 10.2.3 The system should be highly scalable to support future growth of PTA requirements for up to 1000 monitoring nodes.
- 10.2.4 The scope of the monitoring system includes the complete PTA IT infrastructure as explained in the section#2, the proposed data center infrastructure by the bidder including PDU, UPS and Cooling components etc.
- 10.2.5 The scope also includes supply and installation NOC furniture especially design for command and control center for 6 persons including desk chairs etc. and 55" inch ultra-narrow bezel (2x3) video wall screens.

## **11. Infrastructure and Environment Monitoring**

- 11.1. Environmental monitoring system to monitor all environmental sensors, access controls, IP cameras including 3rd Party Devices on following interfaces (SNMP, Modbus485, Dry contacts, Analog signals).
- 11.2. UPS and cooling monitoring.
- 11.3. Records Data and Logs of historical information of alarms and notifications.
- 11.4. Integration of Fire suppression system and Power Switchgear (DBs) may be quoted in optional.
- 11.5. If applicable, OEM support should also be available in case of any issue. OEM support is required 24x7. The support / license should be valid for 3 years with year wise breakup.

## **12. Civil & Miscellaneous Items:**

PTA expects bidders to include all the relevant miscellaneous items for a data center like:

- 12.1 Dismantling all Electrical Fixtures, wiring and Air-Conditioning System.
- 12.2 Removal of debris from site and dumped outside as per PTA requirement.
- 12.3 Also take necessary measure to avoid condensation through wall and floor, prevention of seepage for wall and ceiling of DC.
- 12.4 Installation / Configuration of overhead cabling pathways, galvanized trays.
- 12.5 Providing bricks masonry work wherever required inside the premises.
- 12.6 ICI or equivalent fire-retardant paint work on the walls and partitions free from contamination and asbestos (complete in all respects.)
- 12.7 Fire rated door double leaf of at least 7 ft height or higher and 4ft wide for Data center Entrance.
- 12.8 Fire rated single leaf door. Made of 16swg gauge. Door with frame, door closer, panic lock, mortise lock set. Size 7" x 3' ft for Staging/NOC/Electric room.
- 12.9 Hand held CO<sub>2</sub> Type fire extinguishers 5kg class - C.
- 12.10 Imported (USA/European Make) Antistatic vinyl flooring, thickness 3mm minimum with complete installation for DC, NOC, Staging and electric room.
- 12.11 Supply and fixing of 10mm tempered glass partition/window in DC/NOC as per the design and requirement.
- 12.12 Fire Resistant DAMPA/Gypsum 2' x 2' False Ceiling as per the approved sample for DC, Electrical and NOC Area

- 12.13 Supply & install new lighting point's c/w light switches and using 2 x 1C/1.5mm sq PVC cable in PVC pipe for DC, NOC and Electric room lighting.
- 12.14 Supply, installation and fixing of data center special lights LED (min 500 LUX) antiglare size 2' x 2' or as per the approved sample. (motion sensor automatic lights)
- 12.15 Supply & installation of Emergency Light c/w battery pack and accessories.
- 12.16 Supply and installation of Ultra violet anti rodent mechanism (Repellent) for DC, NOC and Electrical room.
- 12.17 Telephone point (Wiring for each telephone point in preinstalled floor outlet boxes with 4 pair telephone cable 1071C-giga, UTP, from respective patch panel to telephone point in and including cost of 1" dia. PVC conduit) .(For NOC)
- 12.18 Installation of in Row Cooling Indoor/Outdoor Units covered with Liquid and Hot gas hard copper piping in powder coated trays c/w, nitrogen, refrigerant charging, water tank etc. all accessories and fittings.
- 12.19 Supply & Installation of Earth pit for Data Center including digging, boring, grounding material, main hole, earth bar (Separate Earth Pit for DC, UPS and Generator).
- 12.20 Any other requirement identified during design or implementation/commissioning phase.
- 12.21 Anti-Rodent System (Imported)
- 12.22 Shoe Cover Machine (imported).

### **13. Professional Services**

- 13.1 Bidders to note that PTA expects a proposal based on turnkey solution and shall include complete design documentation, installation, commissioning, implementation, configuration testing and integration services in the proposal as needed.
- 13.2 Installation, commissioning and Testing services for all the elements quoted in this RFP including but not limited to:
  - 13.2.1 Cooling and containment systems,
  - 13.2.2 Power systems including Genets, UPS, batteries and cabling etc.
  - 13.2.3 Fire detection and suppression system
  - 13.2.4 Water leakage detection system
  - 13.2.5 Rodent repellent system
  - 13.2.6 Racks and PDUs

All consumables can be evaluated during the site surveys and shall be included in the proposal.

- 13.3 Structured cabling design, implementation and testing services shall be included in the proposal.
- 13.4 Training and Knowledge Transfer: - Bidder is required to provide complementary professional training (i.e. Free of Cost) like (CDCP/CDFOM) to 03 nominated officers of PTA through an independent training institute.
- 13.5 Project management services shall be the responsibility of bidder.
- 13.6 Development of Standard operating procedures (SOPs): Bidder shall provide / develop SOP for Datacenter and the solutions / services provided.
- 13.7 Following documents should be delivered as part of the project.
  - 13.7.1 PTA IT Infrastructure Assessment document

- 13.7.2 DC migration plan and test document
- 13.7.3 DC physical layout-as built documents
- 13.7.4 SLD (Single Line Diagram) for power systems
- 13.7.5 Ups design and test documents
- 13.7.6 DC cooling design and test documents
- 13.7.7 Structured cabling design and test documents
- 13.7.8 Monitoring system design and test documents
- 13.7.9 Fire suppression system design and test documents
- 13.7.10 CCTV system design and test documents
- 13.7.11 Workflow document for remote monitoring services

## **14. Data Center Migration Services**

PTA existing data center systems, applications and services needs to be physically migrated to the upgraded data center as part of the scope of this RFP.

- 14.1 The proposal for the upgraded data center should include the migration of the existing PTA data center to the established data center including LAN, network etc. PTA IT infrastructure is running critical applications and services. PTA would like to have a minimum downtime/interruption of services during the migration and hence puts a lot of emphasis for the bidder's capabilities and methodology for such migrations.
- 14.2 Following should be included in the scope of the DC migration services
  - 14.2.1 Detailed assessment of existing IT infrastructure and applications.
  - 14.2.2 Migration strategy with minimum or no downtime.
  - 14.2.3 Relocation services.
  - 14.2.4 Rack placement in the upgraded data center as per the industry best practices.
  - 14.2.5 Other necessary services which may be needed to ensure minimum or no down time.
- 14.3 As part of the migration strategy the bidder should include within their proposal a detailed migration strategy document which provides
  - 14.3.1 Technical approach for the migration.
  - 14.3.2 Specific detailed breakdown of the deliverables and approach of the bidder to deliver the services identified in the clause above.
  - 14.3.3 Migration Project Timelines
  - 14.3.4 Responsibilities assumed by the bidder, PTA and any existing PTA supplier
  - 14.3.5 Connectivity of the PTA LAN services at different floors of the PTA building from the established data center location by the contractor. The connectivity between distribution and access switches must be 10 G fiber dual connectivity.
  - 14.3.6 Migration for the network/security services running in PTA existing server room as explained in the section #2 of this document.
  - 14.3.7 Provided recommendations by the contractor based on site survey for any infrastructure requirements will be discussed with PTA for implementation
  - 14.3.8 Any new requirement i.e. (cables / connector, ODF/MDF etc.) which are required for physical migration will be the responsibility of the contractor.
- 14.4 As part of the relocation services, the bidder should include within their proposal, the complete list of activities for the movement of network, compute and storage infrastructure from the



existing data center to the upgraded data center. The bidder should suggest the best possible approach for the insurance of the IT assets during the power shutoff of the equipment, physical lift and shift, re-installation and commissioning period.

14.5 There should be no impact on the existing LAN/WAN services due to the DC migration.

14.6 The bidder is expected to provide as-built drawings with new connectivity schema for the LAN services.

14.7 PTA expects a structured cabling approach for extending the new LAN services, compliant to the TIA/EIA-568 standards.

## **15. Video Wall Display (LG/Samsung/SONY or Equivalent)**

15.1 55" (3 X 3) Matrix FHD/4K UHD (Whichever is latest available in the market) display panels with maximum 1.8 mm bezel along with Video Wall Controller and all necessary accessories. (Complete Solution).

Note: At the time of accomplishment of this tender in the newspaper, latest technology i.e. UHD if available for video wall panels should be preferred and quoted by all of the prospective bidders.

## **16. Remote Monitoring Services**

16.1 The main objective for this service is to

16.1.1 Support PTA IT team during peak load conditions or during non-working hours.

16.1.2 Self-monitor the proposed monitoring system.

16.1.3 Configurable Alarm notification mechanism through SMS, email etc.

16.2 Following are the requirements

16.2.1 The bidder is supposed to provide both on/off-premises Level 1 support services to support PTA team from the NOC built on its own premise

16.2.2 This service shall utilize the proposed monitoring system by the bidder as part of this RFP.

16.2.3 Only Level 1 support services shall be required. Following services are included in the Level 1 support services

16.2.3.1 Alarm monitoring

16.2.3.2 Trouble ticket creation

16.2.3.3 Problem resolution

16.2.3.4 Coordination with PTA contractors on behalf of the contractors

16.2.3.5 Escalation to the PTA team for Level 2 services

16.3 PTA expects at least one (1) resource available PTA NOC, capable to handle operational problems and incidences across the complete DC infrastructure. The bidder is required to propose their staffing plan to support PTA objective.

16.4 All software and hardware required for this service shall be bidder responsibility.

16.5 In case of off-premises support, bidder will be responsible for secure connectivity between its premises and PTA data center.

## 17. Warranty and Support Services

All parts should have warranty and back to back support of OEM for minimum 3 years with SLA, Spares, Maintenance service etc.

## 18. Project Management

Bidder's Project Manager will establish a framework for Project Management, communications, reporting, and other activities for Services under the scope of this tender following PMI guidelines

18.1 Establish and maintain Project Management, communications through PTA Point of Contact.

18.2 Would provide detailed Project Plan and Communication plan as per PTA guidelines

18.3 Review and administer the Project Change Control Procedure with PTA Point of Contact

18.4 Provide Project Weekly and Monthly Status Report

18.5 PTA would establish a project management and project steering committee with defined TOR's where contractor representative would be part of PM committee and Steering Committee.

18.6 Develop a Project Plan, track progress against the Project Plan and help resolve deviations from the Project Plan with PTA Point of Contact.

## 19. BoQ Items and Remarks

As mentioned before, PTA expects contractors to do the survey and submit proposal complete from all angles. However, for guidelines, we have included the following BoQ items to be priced. Contractors are expected to improve upon this BoQ.

| Sr. #     | Description  | UoM | Qty. |
|-----------|--|-----|------|
| <b>1.</b> | <b>Electrical Panel, Power Distribution Boxes, Power Cables complied with requirements.<br/>Must Support 6+2 Current 48 KW load and Future Scalability 6+2 48 KW load Total LOAD OF 96 kw</b>      |     |      |
| 1.1       | Main Distribution Board, Main Tap off (LT Panel) ,   | No  | 2    |
| 1.2       | Phase Reversal Protection Panel  | No  | 2    |
| 1.3       | ATS for full Data Center Load including MOR  | No  | 2    |
| 1.4       | Data Center Main Distribution  | No  | 2    |
| 1.5       | UPS INPUT DB   | No  | 2    |
| 1.6       | Power Distribution Module (For UPS Output)   | No  | 2    |
| 1.7       | DB Utility for AC's, Lighting, Fire panels, NOC etc  | No  | 1    |
| 1.8       | Any Other Requirement  |     |      |
| <b>2.</b> | <b>Power cabling (Pakistan/Fast Cables)</b>  |     |      |
| 2.1       | Main Input Cable 1 X 4C X 155mm <sup>2</sup> armored XLPE Cable + E<br>On Cable Tray<br>Note: Please make your own assessment for cable lengths and sizing these are approximate suggested values. | RFT | 350  |
| 2.2       | UPS input cable, 1 X 4C X 155mm <sup>2</sup> PVC insulated Cable + E   | RFT | 60   |

|           |  |     |     |
|-----------|--|-----|-----|
|           | On Cable Tray/Duct   |     |     |
| 2.3       | Main input cable for In Row, 1 X 4C X 16mm <sup>2</sup> PVC/PVC Cable + E On Cable Tray.   | RFT | 90  |
| 2.4       | Main Input cable for outer unit, 1 x 4C x 10mm <sup>2</sup> PVC/PVC cable +E on cable tray   | RFT | 300 |
| 2.5       | 2C x 25mm <sup>2</sup> PVC/PVC cable on cable try for UPS out to AC PDPM   | RFT | 90  |
| 2.8       | Rack mountable ATS for Single Power Network devices  | No  | 4   |
| 2.9       | Bidders to ensure all the relevant items for complete functionality  |     |     |
| <b>3.</b> | <b>2 X 60Kw/KVA Uninterruptable Power Supply (unity power factor) running on unity factor</b>  |     |     |
| 3.1       | 48KW capacity UPS, parallel Scalable with batteries, SNMP CARD, Startup and commissioning. Combined Backup time 30 mins at 48KW. With 32Amp power distribution for 8xIT (1-phase) racks and integration with centralized DCIM, complete solution.                              | No  | 2   |
| 3.2       | Power Distribution Modules Should support 48 KW phase-I  | No  | 2   |
| 4.2       | Further unforeseen requirements  |     | 1   |
| <b>4.</b> | <b>Precision Cooling System In-Row</b>   |     |     |
| 4.1       | 30KW or above Precision In Row Cooling Unit, Standard DX Air-Cooled, 400V/3ph/50Hz. The solution should cover all the aspects of precision cooling including humidification, de-humidification etc.  | No  | 3   |
| 4.2       | Cold/Hot Aisle Containment system with 2xSliding doors for DC Racks and In Row Cooling. (Job) RFID and Biometric access  | Job | 1   |
| 4.3       | Supply and installation of 2 Ton Comfort cooling ceiling mount VRV/VRF Cassettes of DC Invertor technology for Electrical (02), Staging(01), NOC/SOC (02), Manager (01), MMR (02) rooms (Daikin, ACSON, LG or equivalent) bidder to offer the units appropriate for the space. | No  | 8   |
| 4.4       | all other items to complete the solution   |     |     |
| <b>5.</b> | <b>Cabinets &amp; PDU's</b>  |     |     |
| 5.1       | Network Rack 42U 750/800 X 1200, C/W Perforated doors with lock and key ; RFID and Bio Metric, Split side panels ; EIA mounting rails ; levelling feet ; color black ; perforated front/back door end blanking panels for empty U space.                                       | No  | 2   |
| 5.2       | Server Rack 42U 600 X 1060/1070 , 1100/1200 C/W Perforated doors with lock and keys, RFID and Biometric; Split side panels ; EIA mounting rails ; levelling feet ; color black ; perforated front/back door, blanking panels for   | No  | 6   |

|           |  |     |    |
|-----------|--|-----|----|
|           | empty U space.   |     |    |
| 5.3       | Metered PDU: 32A IEC309, 36/20 way C13 + 6 or C13+4 way C19, Digital meter display, Black, 0U  | No  | 20 |
| 5.4       | 1U/2U tool-less blanking panels for racks empty spaces. (Pack of 200pcs ( 100+100))  | No  | 2  |
| 5.5       | Any other requirement identified   |     |    |
| <b>6.</b> | <b>Cabling Solution</b>  |     |    |
| 6.1       | 6 + 6 fiber 10G LC ports to EOR/NW Cabinet   | Job | 1  |
| 6.2       | 24+24 copper ports from each rack to EOR/NW Cabinet with Patch Panels  | Job | 1  |
| 6.3       | Backbone Cabling: 12 ports fiber to each MMR   | Job | 1  |
| 6.5       | Supply & Installation of cable ladder for two paths throughout the data center.  | Job | 1  |
| 6.6       | Laying, termination, tagging and testing etc.  | Job | 1  |
| 6.7       | Any other requirement  | Job | 1  |
| <b>7.</b> | <b>Fire Detection &amp; Suppression System Novec-1230 (European) for DC, UPS-Electrical Rooms only</b>   |     |    |
| 7.1       | Addressable Fire Alarm Control Panel, Fire Alarm Bell, Fire Alarm Sounder, Abort Switch, Gas Cylinder with Actuator and Accessories with Installation open PVC Conduit (3/29) Cable, Sch. 40 Pipe Network, Testing and Commission 3-4 Zones  | No  | 1  |
| 7.2       | VESDA-High Sensitive aspiration system for UPS-Electrical & DC rooms only.   | Job | 4  |
| 7.3       | Additional Miscellaneous job   | Job | 1  |
| <b>8.</b> | <b>Monitoring and Surveillance System</b>  |     |    |
| 8.1       | Data Center Monitoring (Security & Surveillance) , IP Camera - 5MP minimum, POE, Wall / Ceiling Mounted, Water Proof, 8 IP Camera support (1U) with up to 2 SSD Hard Disk connection, Storage of 4TB, 30 Days Storage, Commissioning of IP camera Monitoring system                                | No  | 12 |
| 8.2       | Biometric /Retina 3 in 1 Finger Print/RFID Card/PIN Recognition, EM Lock (600Lbs), ZL Bracket, Exit Push Button, POWER Supply, installation and integration  | No  | 8  |
| <b>9.</b> | <b>Monitoring System for DC &amp; DCIM</b>   |     |    |
| 9.1       | Data Center Infrastructure Management Solution, Server Modules, smoke detectors, temperature, humidity, water, sensors, power/UPS and Cooling monitoring. System should be highly scalable to support future growth of PTA requirements for up to 100 monitoring nodes without any additional cost | Job | 1  |

|            |  |      |      |
|------------|--|------|------|
| <b>10.</b> | <b>Civil &amp; Miscellaneous Works</b>   |      |      |
| 10.1       | Dismantling all Electrical Fixtures, wiring and Air-Conditioning System.   | Job  | 1    |
| 10.2       | Removal of debris from site and dumped outside as per the client requirement.  | Job  | 1    |
| 10.3       | Also take necessary measure to avoid condensation through wall and floor, prevention of seepage for wall and ceiling of DC).   | Job  | 1    |
| 10.4       | Installation / Configuration of overhead cabling pathways, galvanized trays.   | Job  | 1    |
| 10.5       | Providing bricks masonry work wherever required inside the premises.   | Job  | 1    |
| 10.6       | ICI or equivalent fire-retardant paint work on the walls and partitions free from contamination and asbestos (complete in all respects.)   | Job  | 1    |
| 10.7       | Supply and installation of Fire rated doors with glass panels having rating of 2 hrs. double leaf of at least 7 ft height or higher and 4ft wide for Data center Entrance and emergency Exit (UL), Minimum 16 Gauge                        | No   | 2    |
| 10.8       | Supply and installation of Fire rated doors with glass panels having rating of 2 hrs. single leaf door. Made of 16 gauge. Door with frame, door closer, panic lock, mortise lock set. Size 7 x 3.5' ft for Staging/NOC/Electric room. (UL) | No   | 4    |
| 10.9       | Hand held CO <sub>2</sub> Type fire extinguishers 5kg class - C.   | No   | 8    |
| 10.10      | Imported (USA/UK/European Make) Antistatic vinyl flooring, thickness 3mm minimum with complete installation for DC, NOC, Staging and electric room.  | SqFt | 2500 |
| 10.11      | Fire Resistant DAMPA/Gypsum 2' x 2' False Ceiling as per the approved sample for DC, Electrical and NOC Area   | SqFt | 2500 |
| 10.12      | Supply & install new lighting point's c/w light switches and using 2 x 1C/1.5mm sq PVC cable in PVC pipe for DC, NOC and Electric room lighting.   | Job  | 1    |
| 10.13      | Supply, installation and fixing of data center special lights LED (min 500 LUX) antiglare size 2' x 2' or as per the approved sample. Automatic on off light motion sensor bulbs   | No   | 30   |
| 10.14      | Supply & installation of Emergency Light c/w battery pack and accessories.   | No   | 12   |
| 10.15      | Supply and installation of Ultra violet anti rodent mechanism (Repellent) for DC, NOC and Electrical room.   | No   | 12   |
| 10.16      | Telephone point (Wiring for each telephone point in preinstalled floor outlet boxes with 4 pair telephone cable 1071C-giga, UTP, from respective patch panel to telephone point in and including cost of 1" dia. PVC conduit) .(For NOC)   | Job  | 1    |

|            |  |     |   |
|------------|--|-----|---|
| 10.17      | Installation of In Row Cooling Indoor/Outdoor Units covered with Liquid and Hot gas hard copper piping in powder coated trays c/w, nitrogen, refrigerant charging, water tank etc. all accessories and fittings.       | No  | 3 |
| 10.18      | Supply & Installation of Earth pit for Data Center including digging, boring, grounding material, main hole, earth bar (Separate Earth Pit for DC, UPS and Generator). Digging up to 160 to 200 Feet up to water table | Job | 1 |
| 10.19      | Supply and Installation of Single leaf Safety/Security glass door with Handle and dual side opening motor for NOC / Manger / Staging / Communication Rooms, with blast lamination                                      | Job | 4 |
| 10.20      | Supply and Installation of Main Sliding Double leaf Door with Automatic Door Opening Sensor Operated with Access Control Device with Mesh Shutter door Security at the back of Sliding Door.                           | Job | 1 |
| 10.21      | Fire rated Safety/Security Glass wall in between Two pods with door towards future pod (UL)  | Job | 1 |
| 10.22      | Supply and Installation of Automatic Shoe cover Machine to be placed near door of Data Center , with Shoe covers provision of 3 Year   | job | 1 |
| 10.23      | Any other requirement identified at the time of actual commencement of the work  | Job | 1 |
| <b>11.</b> | <b>Professional Services</b>   |     |   |
| 11.1       | Complete design documentation, installation, commissioning, implementation, configuration testing and integration services in the proposal as needed.  | Job | 1 |
| <b>12.</b> | <b>Data Center Migration Services (Physical Migration)</b>   |     |   |
| 12.1       | New data center should include the migration of the existing PTA data center to the new data center including LAN, network, security services, as per the RFP Scope.   | Job | 1 |
| <b>13.</b> | <b>Warranty &amp; Support Services</b>   |     |   |
| 13.1       | All the key active elements should have warranty and back to back support of OEM for minimum 3 years with SLA with Spares inventory & quarterly Maintenance service  | Job | 1 |
| <b>14.</b> | <b>Miscellaneous Items</b>   | Job | 1 |
| 14.1       | UPS for NOC/SOC and Manager room (5 KW) equivalent with necessary backup and cables  | No  | 2 |
| 14.2       | Pre-shipment testing and Inspection by PTA (FOC)   | No  | 2 |
| 14.3       | Anti-Rodent System   | No  | 6 |
| 14.4       | Water Leakage Detection System   | No  | 1 |

|      |   |     |     |
|------|---|-----|-----|
| 14.6 | supply and installation NOC and manager room furniture especially design for command and control center for 6 persons including desk chairs including one team lead etc   | Job | 1   |
| 14.7 | <b>Workstations with dual LED for NOC/SOC and laptops</b>   | No  | 6+4 |
| 15.  | <b>Video Wall</b>   |     |     |
| 15.1 | Video Wall HD/UHD display (3X3) with Controller   | No  | 9+1 |
| 16.  | <b>Trainings and Knowledge transfer (Free Of Cost)</b>  |     |     |
| 16.1 | ATD certified training  | Job | 3   |
| 16.2 | CDCP/CDCS from foreign trainer from authorized training institute etc   | Job | 3   |
| 16.3 | <p>NOC Software, Mange Engine, Solar wind or equivalent.. , (Complete Solution- advance enterprise edition for 230 devices)</p> <p>Minimum Modules to Cover.</p> <ol style="list-style-type: none"> <li>1. Network Performance</li> <li>2. Server &amp; Virtualization</li> <li>3. Network Visualization</li> <li>4. Network Fault Management</li> </ol> <ol style="list-style-type: none"> <li>a. Monitor network, servers, and applications for health and performance.</li> <li>b. Analyze bandwidth and proactively identify bottlenecks.</li> <li>c. Continuously monitor and analyze security threats and attacks.</li> <li>d. Modify network configurations per the business need.</li> <li>e. Pickup faults and troubleshoot quickly to reduce the mean time to repair</li> <li>f. Monitor network performance in real time</li> <li>g. Identify bandwidth hogs</li> <li>h. Manage config changes</li> <li>i. Analyze firewall security and logs</li> <li>j. Monitor application performance</li> <li>k. NOC dashboards and CCTV views etc</li> <li>l. Real-time performance graphs</li> <li>m. Email, SMS, web UI notification of faults</li> </ol> <p>With trouble shooting tools ICMP, Switch port mapper, work flow automation, support for Flo</p> | No  | 1   |

Table 3BoQ

**Any inferior specifications will be rejected**

Multiple options are not allowed, contractor should quote only one option and shall quote for all of the above items.

Note: Any additional/unforeseen requirements should be the responsibility of the contractor.

All quoted items shall be verified as per their data sheet to cater the mentioned load.

**FINANCIAL BID not accompanied with Bid Security will be rejected without any right of appeal.**

**To accommodate multiple principle manufacturer slight changes are allowed after the approval of technical committee.**

Authorized Signature of bidder with seal stamp

**Annex-D**

**Financial Proposal (Bid Format) Data Center (with 3 years' warranty and Support/SLA) Perpetual Software Licenses .**

Date \_\_\_\_\_

Company Name \_\_\_\_\_



| Sr.No                | Required Specification   | Quoted Specification (With Brand Name) | Unit Price<br><i>Inclusive of Applicable Taxes</i> | Qty | Total Price<br><i>Inclusive of Applicable Taxes</i> |
|----------------------|--|--|--|-----|---|
| <b>A</b><br><b>1</b> | <b>Electrical Panel, Power Distribution Boxes, Power Cables complied with requirements. Must Support 6+2 Current 48 KW load and Future Scalability 6+2, 48 KW load Total LOAD OF 96 kw</b> |  |  | 2   |   |
| 2                    | Main Distribution Board, Main Tap off (LT Panel) ,   |  |  | 2   |   |
| 3                    | Phase Reversal Protection Panel  |  |  | 2   |   |
| 4                    | ATS for full Data Center Load including MOR  |  |  | 2   |   |
| 5                    | Data Center Main Distribution  |  |  | 2   |   |
| 6                    | UPS INPUT DB   |  |  | 2   |   |
| 7                    | Power Distribution Module (For UPS Output)   |  |  | 1   |   |
| 8                    | DB Utility for AC's, Lighting, Fire panels, NOC etc  |  |  | 2   |   |
| 9                    | Any Other Requirement  |  |  |     |   |
| <b>B.</b>            | <b>Power cabling (Pakistan/Fast Cables) Must Support 6+2 Current 48 KW load and Future Scalability 6+2, 48 KW load Total LOAD OF 96 kw</b>   |  |  |     |   |
| 10                   | Main Input Cable 1 X 4C X 155mm2 armored XLPE Cable + E On Cable Tray<br>Note: Please make your own assessment for cable lengths these are approximate values.                             |  |  | 350 |   |
| 11                   | UPS input cable, 1 X 4C X 155mm2 PVC insulated Cable + E On Cable Tray/Duct  |  |  | 60  |   |
| 12                   | Main input cable for In Row, 1 X 4C X 16mm2 PVC/PVC Cable + E On Cable Tray.   |  |  | 90  |   |
| 13                   | Main Input cable for outer unit, 1 x 4C x 10mm2 PVC/PVC cable +E on cable tray   |  |  | 300 |   |
| 14                   | 2C x 25mm2 PVC/PVC cable on cable try for UPS out to AC PDPM   |  |  | 90  |   |
| 15                   | Rack mountable STS for Single Power Network devices<br>Bidders to ensure all the relevant items for complete functionality   |  |  | 4   |   |
| 16                   | Any other requirement to complete the solution   |  |  |     |   |
| <b>C.</b>            | <b>2 X 60Kw/Kva Uninterruptable Power Supply (unity power factor) running on unity factor</b>  |  |  |     |   |

|           |  |  |  |    |  |
|-----------|--|--|--|----|--|
| 17        | 48KW capacity UPS, parallel Scalable with batteries, SNMP CARD, Startup and commissioning. Combined Backup time 30 mins at 48KW. With 32Amp power distribution for 8xIT (1-phase) racks and integration with centralized DCIM, complete solution.                              |  |  | 2  |  |
| 18        | Power Distribution Modules Should support 48 KW phase-I  |  |  | 2  |  |
| 19        | Further unforeseen requirements  |  |  |    |  |
| <b>D.</b> | <b>Precision/Comfort Cooling System In-Row</b>   |  |  |    |  |
| 20        | 30KW or above Precision in Row Cooling Unit, Standard DX Air-Cooled, 400V/3ph/50Hz. The solution should cover all the aspects of precision cooling including humidification, de-humidification etc.  |  |  | 3  |  |
| 21        | Cold/Hot Aisle Containment system with 2xSliding doors for DC Racks and In Row Cooling. (Job) RFID and Biometric access  |  |  | 1  |  |
| 22        | Supply and installation of 2 Ton Comfort cooling ceiling mount VRV/VRF Cassettes of DC Inverter technology for Electrical (02), Staging(01), NOC/SOC (02), Manager (01), MMR (02) rooms (Daikin, ACSON, LG or equivalent) bidder to offer the units appropriate for the space. |  |  | 8  |  |
| 24        | Any other item to complete the solution other items to complete the solution.  |  |  |    |  |
| <b>E.</b> | <b>Cabinets &amp; PDU's</b>  |  |  |    |  |
| 25        | Network Rack 42U 750/800 X 1200 C/W Perforated doors with lock and key ; RFID and Bio Metric, Split side panels ; EIA mounting rails ; levelling feet ; color black ; perforated front/back door end blanking panels for empty U space.  |  |  | 2  |  |
| 26        | Server Rack 42U 600 X 1060/1070, 1100/1200 C/W Perforated doors with lock and keys, RFID and Biometric; Split side panels ; EIA mounting rails ; levelling feet ; color black ; perforated front/back door, blanking panels for empty U space.                                 |  |  | 6  |  |
| 27        | Metered PDU: 32A IEC309, 36/20 way C13 + 6 or C13+4 way C19, Digital meter display, Black, 0U  |  |  | 28 |  |
| 28        | 1U/2U tool-less blanking panels for racks empty spaces. (Pack of 200pcs ( 100+100))  |  |  | 2  |  |
| 29        | Any other requirement identified   |  |  | 2  |  |
| <b>F.</b> | <b>Cabling Solution</b>  |  |  |    |  |

|           |  |     |  |    |  |
|-----------|--|-----|--|----|--|
| 30        | 6 + 6 fiber 10G LC ports to EOR/NW Cabinet   |     |  | 1  |  |
| 31        | 24+24 copper ports from each rack to EOR/NW Cabinet with Patch Panels  |     |  | 1  |  |
| 32        | Backbone Cabling: 12 ports fiber to each MMR   |     |  | 1  |  |
| 33        | Supply & Installation of cable ladder for two paths throughout the data center.  |     |  | 1  |  |
| 34        | Laying, termination, tagging and testing etc.  |     |  | 1  |  |
| 35        | Any other requirement  |     |  |    |  |
| <b>G.</b> | <b>Fire Detection &amp; Suppression System Novec-1230 (European) for DC, UPS-Electrical Rooms only</b>   |     |  |    |  |
| 36        | Addressable Fire Alarm Control Panel. Fire Alarm Bell, Fire Alarm Sounder, Abort Switch, Gas Cylinder with Actuator and Accessories with Installation open PVC Conduit (3/29) Cable, Sch. 40 Pipe Network, Testing and Commission 3-4 Zones  |     |  | 1  |  |
| 37        | VESDA-High Sensitive aspiration system for UPS-Electrical & DC rooms only.   |     |  | 4  |  |
| 38        | Additional Miscellaneous job   |     |  | 1  |  |
| <b>H.</b> | <b>Monitoring and Surveillance System</b>  |     |  |    |  |
| 39        | Data Center Monitoring (Security & Surveillance) , IP Camera - 5MP minimum, POE, Wall / Ceiling Mounted, Water Proof, 8 IP Camera support (1U) with up to 2 SSD Hard Disk connection, Storage of 4TB, 30 Days Storage, Commissioning of IP camera Monitoring system                                |     |  | 12 |  |
| 40        | Biometric /Retina 3 in 1 Finger Print/RFID Card/PIN Recognition, EM Lock (600Lbs), ZL Bracket, Exit Push Button, POWER Supply, installation and integration  |     |  | 8  |  |
| <b>I.</b> | <b>Monitoring System for DC &amp; DCIM</b>   |     |  |    |  |
| 41        | Data Center Infrastructure Management Solution, Server Modules, smoke detectors, temperature, humidity, water, sensors, power/UPS and Cooling monitoring. System should be highly scalable to support future growth of PTA requirements for up to 100 monitoring nodes without any additional cost |     |  | 1  |  |
| <b>J.</b> | <b>Civil &amp; Miscellaneous Works</b>   |     |  |    |  |
| 42        | Dismantling all Electrical Fixtures, wiring and Air-Conditioning System.   | Job |  | 1  |  |
| 43        | Removal of debris from site and dumped outside as per the client requirement.  | Job |  | 1  |  |

|    |   |      |  |      |  |
|----|---|------|--|------|--|
| 44 | Also take necessary measure to avoid condensation through wall and floor, prevention of seepage for wall and ceiling of DC).  | Job  |  | 1    |  |
| 45 | Installation / Configuration of overhead cabling pathways, galvanized trays.  | Job  |  | 1    |  |
| 46 | Providing bricks masonry work wherever required inside the premises.  | Job  |  | 1    |  |
| 47 | ICI or equivalent fire retardant paint work on the walls and partitions free from contamination and asbestos (complete in all respects.)  | Job  |  | 1    |  |
| 48 | Supply and installation of Fire rated doors with glass panels having rating of 2 hrs. double leaf of at least 7 ft height or higher and 4ft wide for Data center Entrance and emergency Exit (UL), Minimum 16 Gauge   | No   |  | 2    |  |
| 49 | Supply and installation of Fire rated doors with glass panels having rating of at least 2 hrs. single leaf door. Made of maximum 14gauges. Door with frame, door closer, panic lock, mortise lock set. Size 7 x 3.5' ft for Staging/NOC/MMR/Electric room. (UL) | No   |  | 4    |  |
| 50 | Hand held CO'2 Type fire extinguishers 5kg class - C.   | No   |  | 8    |  |
| 51 | Imported (USA/UK/European Make) Antistatic vinyl flooring, thickness 3mm minimum with complete installation for DC, NOC, Staging and electric room.   | SqFt |  | 2500 |  |
| 52 | Fire Resistant DAMPA/Gypsum 2' x 2' False Ceiling as per the approved sample for DC, Electrical and NOC Area  | SqFt |  | 2500 |  |
| 53 | Supply & install new lighting point's c/w light switches and using 2 x 1C/1.5mm sq PVC cable in PVC pipe for DC, NOC and Electric room lighting.  | Job  |  | 1    |  |
| 54 | Supply, installation and fixing of data center special lights LED (min 500 LUX) antiglare size 2 ' x 2' or as per the approved sample. Automatic on off light motion sensor bulbs   | No   |  | 30   |  |
| 55 | Supply & installation of Emergency Light c/w battery pack and accessories.  | No   |  | 12   |  |
| 56 | Supply and installation of Ultra violet anti rodent mechanism (Repellent) for DC, NOC and Electrical room.  | No   |  | 12   |  |
| 57 | Telephone point (Wiring for each telephone point in preinstalled floor outlet boxes with 4 pair telephone cable 1071C-giga, UTP, from respective patch panel to telephone point in  | Job  |  | 1    |  |

|           |  |     |  |   |  |
|-----------|--|-----|--|---|--|
|           | and including cost of 1" dia. PVC conduit) .(For NOC)  |     |  |   |  |
| 58        | Installation of In Row Cooling Indoor/Outdoor Units covered with Liquid and Hot gas hard copper piping in powder coated trays c/w, nitrogen, refrigerant charging, water tank etc. all accessories and fittings.       | No  |  | 3 |  |
| 59        | Supply & Installation of Earth pit for Data Center including digging, boring, grounding material, main hole, earth bar (Separate Earth Pit for DC, UPS and Generator). Digging up to 160 to 200 Feet up to water table | Job |  | 1 |  |
| 60        | Supply and Installation of Single leaf Safety/Security glass door with Handle and dual side opening motor for NOC / Manger / Staging / Communication Rooms, with blast lamination                                      | Job |  | 4 |  |
| 61        | Supply and Installation of Main Sliding Double leaf Door with Automatic Door Opening Sensor Operated with Access Control Device with Mesh Shutter door Security at the back of Sliding Door.                           | Job |  | 1 |  |
| 62        | Supply and Installation of Automatic Shoe cover Machine to be placed near door of Data Center , with Shoe covers provision of 3 Year   | Job |  | 1 |  |
| 63        | Any other requirement identified at the time of actual commencement of the work  | Job |  | 1 |  |
| <b>K.</b> | <b>Professional Services</b>   |     |  |   |  |
| 64        | Complete design documentation, installation, commissioning, implementation, configuration testing and integration services in the proposal as needed.  | Job |  | 1 |  |
| <b>L.</b> | <b>Data Center Migration Services (Physical Migration)</b>   |     |  |   |  |
| 65        | New data center should include the migration of the existing PTA data center to the new data center including LAN, network, security services, as per the RFP Scope.   | Job |  | 1 |  |
| <b>M.</b> | <b>Warranty &amp; Support Services</b>   |     |  |   |  |
| 66        | All the key active elements should have warranty and back to back support of OEM for minimum 3 years with SLA with Spares inventory & quarterly Maintenance service  | Job |  | 1 |  |
| <b>N.</b> | <b>Miscellaneous Items</b>   | Job |  | 1 |  |
| 67        | UPS for NOC/SOC and Manager room (5 KW) equivalent with necessary backup and cables  | No  |  | 2 |  |

|    |   |     |  |     |  |
|----|---|-----|--|-----|--|
| 68 | Workstations for NOC , Laptops and other items mentioned in BOQ   | No  |  |     |  |
| 69 | Pre-shipment testing and Inspection by PTA (FOC)  | No  |  | 1   |  |
| 70 | Anti-Rodent System  | No  |  | 6   |  |
| 71 | Water Leakage Detection System  | No  |  | 1   |  |
| 72 | Video Wall display (3X3) with Controller 4K   | No  |  | 9+1 |  |
| 73 | supply and installation NOC/SOC and manager room furniture especially design for command and control center for 6 persons including desk chairs and with one team lead, guest executive seating furniture etc | Job |  | 1   |  |
| 74 | NOC Software, Mange Engine, Solar wind or equivalent.   | No  |  | 1   |  |
|    | Total   |     |  |     |  |

Amount in words: (Rupees.....)

**Any inferior specifications will be rejected**

**FINANCIAL PROPOSAL not accompanied with Bid security will be rejected without any right of appeal.**

**Note: please improve upon any other requirement which is not listed and should be the responsibility of the contractor.**

**Contractors are encouraged to improve upon this BOQ**

Authorized Signature of bidder with seal stamp

**Annex-E**

**CONTRACT FOR HIRING OF SERVICES FOR SUPPLY, INSTALLATION, COMMISSIONING, MIGRATION  
AND MAINTAINANCE OF DATACENTER FACILITY FOR PTA**

This Contract (the “Contract”) is made and entered into at **Islamabad** on this \_\_\_\_\_ day of

\_\_\_\_\_

By and between

The Pakistan Telecommunication Authority, a statutory regulatory authority established under Pakistan Telecommunication (Re-Organization) Act, 1996, having its Head Quarter at F-5/1, Islamabad through Director ICT (hereinafter called as the “CLIENT” which expression shall where the context admits, include successors-in-interest and assigns) of the One Part:

AND

The (insert name of company) a company incorporated under the laws of ..... having its registered office at -----through its authorized representative Mr..... (herein after called as “CONTRACTOR”) which expression shall where the context so allows include his/its successors-in-interest, executors, administrators, heirs and permitted assigns) of the Other Part;

(The Party of the One Part and Party of the Other Part shall hereinafter be collectively referred to as ‘Parties’ and individually as ‘Party’ as the context of this Agreement may require).

WHEREAS, the Client desires to acquire the services of Contractor for supply, installation, commissioning, implementing and migration of datacenter facility for PTA (“the Services”) including three (03) years’ warranty, maintenance and support services for the duration of this contract and as per terms and conditions of this Contract and documents attached herewith.

WHEREAS, the contractor represents that it being engaged in the business of providing the Services, has the requisite expertise and resources to provide top quality Services to the Client in accordance with highest industry standards and satisfaction of the Client. The contractor undertakes that the Services shall be provided only through the staff who have the requisite expertise and experience in this regard.

**NOW THEREFORE**, the Parties to this Contract agree as follows:

1. The Contractor hereby covenants with the Client to supply the Goods as defined under RFP and provide the Services and to remedy defects / damage therein, at the time and in the manner, in conformity in all respects with the provisions of the Contract, in consideration of the payments to be made by the Client to the Contractor.
  
2. The Client hereby covenants with the Contractor to pay the Contractor, the Contract Price at the times and in the manner, in conformity in all respects with the provisions of the Contract, in consideration of supply of the Goods and provision of the Services and remedying of defects / damage therein.
  
3. The following shall be deemed to form and be read and construct as integral part of this Contract:
  - a. The Tender Document
  - b. Bidder's Proposal
  - c. Terms and Conditions of the Contract
  - d. The Technical Specifications
  - e. Price Schedule
  - f. Affidavit(s)
  - g. Authorized Dealership / Agency Certificate
  - h. Manufacturer Authorization Letter (MLA)
  - i. Bid Security and Retention Money
  - j. Service Level Agreement (SLA)
  - k. Non-Disclosure Agreement (if required)
  - l. Any Standard Clause acceptable for Client

The terms and conditions of Contract shall prevail over all other documents at the first instance, however, in the event of any conflict, discrepancy and/or inconsistency between the contract and other the documents, the above documents orderly shall prevail only to the extent of the discrepancy / inconsistency within the Contract.

IN WITNESS whereof the Parties hereto have caused this Contract to be executed in accordance with the laws of Pakistan as of the day, month and year first indicated above.

**For [full legal name of the Client]:**

**For [full legal name of the Contractor]:**

Signature \_\_\_\_\_

Signature \_\_\_\_\_

Name \_\_\_\_\_

Name \_\_\_\_\_

Witnessed By: \_\_\_\_\_

Witnessed By: \_\_\_\_\_





## 1. DEFINITIONS

1.1 In this Contract, except otherwise provided, the following words, expressions and/or phrases shall have the meanings as defined herein below. Words importing the singular only include the plural and vice versa where the context so requires.

- a. **Agreement/Contract:** means the present Agreement signed between the Contractor and the Client with all terms and conditions of the agreement along with all Agreement Documents. This Agreement and its attached annexure(s) constitute the exhaustive description of obligations of the Parties.
- b. **Contract Price:** means the price that has been quoted by the Contractor.
- c. **Contract Documents:** includes but is not limited to bid documents, annexure(s), Schedule(s) form of contract, clarifications and responses to the Contractor, Technical Proposal & its clarifications, Financial Proposal & its clarifications, Request for Proposal, Terms of Reference or any instruction or communication regarding the subject matter either through hard copies/forms or in electronic form/means or any amendment hereto.
- d. **Day:** means calendar day of the Gregorian calendar.
- e. **Effective date:** means the date of Signing of the Contract.
- f. **Force Majeure:** means an event which is beyond the reasonable control of a party and which makes a party's performance of its obligations under the Contract impossible or so impractical as to be considered impossible under the circumstances, and includes, but is not limited to, War, Riots, Storm, Flood or other industrial actions (except where such strikes, lockouts or other industrial are within the power of the party invoking Force Majeure), confiscation or any other action by Government agencies.
- g. In all disputes between the parties as to matters arising pursuant to this Contract, the dispute be referred for resolution by arbitration under the Pakistan Arbitration Act, 1940, as amended, by one or more arbitrators selected in accordance with said Law. The place for arbitration shall be Lahore, Pakistan. The award shall be final and -binding on the parties.
- h. **Modularity:** is the degree to which a system's components may be separated and recombined. Modularity refers to the extent to which installed may be divided into smaller modules.
- i. **Month:** means calendar month of the Gregorian calendar.
- j. **Scalability:** is the capability of infrastructure to handle and perform under an increased or expanding workload. A facility that scales well will be able to maintain or even increase its level of performance or efficiency when tested by larger operational demands.

Furthermore, the facility should have capability for expansion without and disruption / dismantling.

- k. **Security:** The defense of against any kind of intrusion and unauthorized use of resources.
- l. **Services:** means the work, activities or described under the scope of work including deliverables attached as Annex-A to this Contract.
- m. **Specifications:** means the specifications for the Product as directed by Client including deliverables, together with any additional specifications or modifications to the specifications that may be agreed to in writing by the parties during the term of this Agreement/contract.
- n. **Migration:** Migrating all the existing infrastructure available in different server room(s) and network access/distribution.
- o. **Software license:** is a legally binding agreement that specifies the terms of use for an application and defines the rights of the software producer and of the end-user. Software must be legally licensed before it may be installed on perpetual basis.
- p. **Time of Completion:** means the time schedule within which Completion and Execution of the Services is desired by Client.
- q. **Acceptance Testing:** means the testing or checking of the delivered solution as per scope of the contract. This testing shall be conducted based on the given TOR, and shall results in the relevant milestone as mentioned in this document, if declared successful by PTA Authorized Representative.
- r. **PTA's Authorized Representative:** means the Director ICT of PTA, or any person formally authorized by PTA.
- s. **Laws of Pakistan:** means the Federal, Provincial and Local laws of Pakistan, and all orders, rules, regulations, statutory regulatory orders, executive orders, decrees, judicial decisions, notifications, or other similar directives made pursuant thereto, issued by any executive, legislative, judicial, or administrative entity, as any of them may be amended from time to time by the Government of Pakistan.
- t. **Loss:** means any or all loss, damage, liability, payment obligation and all related expenses (including reasonable legal fees) and expenses for remedial action/measures.
- u. **Pakistan:** means the Islamic Republic of Pakistan.
- v. **GOP:** means government of Pakistan.
- w. **Contract Duration:** means the term of the contract starting for the date of signing of the contract including the period of three (3) years warranty and support services starting

from the date of issuance of Final Acceptance Certificate (**FAC**) and extendable with the same terms and conditions on mutual consent.

- x. **Standards:** means the good supplied and the service provided under this contract shall conform to the authoritative latest industry standards.

## 1.2 INTERPRETATION

Except where the context requires otherwise, this Contract will be interpreted as follows:

- a. The headings, whether of articles or other parts of the Contract, are for ease of reference only and do not affect the interpretation or construction thereof.
- b. Words in the singular include the plural and vice versa, and words importing any gender include every gender.
- c. A reference to an Article number is a reference to its sub-articles.
- d. Where the context so requires, reference to a person shall be construed as including references to an individual, firm, company, corporation, unincorporated body of persons or any State or agency thereof.
- e. Where any act, matter or thing is required by this Contract to be performed or carried out on a certain day and that day is not a Business Day then that act, matter or thing shall be carried out or performed on the following Business Day; and
- f. References to statutes or statutory provisions include references to any orders, or regulations made there under and references to any statute, provision, order or regulation include references to that statute, provision order or regulation as amended, modified, re-enacted or replaced from time to time whether before or after the date thereof.

No rule of construction applies to the disadvantages of Client for preparing this contract in whole or in part.

## 2. SCOPE OF WORK (SOW)

Contractor shall supply, commission, install, migrate data center facility according to the Client specifications and related information (the “deliverables”), support and maintenance, training of nominate PTA officers on deployment and operation of data center attached hereto as Annex- C (TOR).

## 3. CONTRACT LANGUAGE

The Contract and all documents relating to the Contract, exchanged between the Contractor and the Client, shall be in English. The Contractor shall bear all costs of translation to English and all risks of the accuracy of such translation.

## 4. CONTRACT DOCUMENTS AND INFORMATION

The Contractor shall not, without the Client's prior written consent, make use of the Contract, or any provision thereof, or any document(s), specifications, drawing(s), pattern(s), sample(s) or information furnished by or on behalf of the Client in connection therewith, except for purposes of performing the Contract or disclose the same to any person other than a person employed by the Contractor in the performance of the Contract. Disclosure to any such employed person shall be made in confidence and shall extend only as far as may be necessary for purposes of such performance.

## **5. COMMERCIAL AVAILABILITY**

The Goods supplied under this Contract shall be commercially available at the time of signing of the contract. Commercial availability means that such Goods shall have been sold, installed and operationalized in more than two installations initiated under two separate contracts by manufacturer globally / locally.

## **6. PATENT RIGHT**

The Contractor shall indemnify and hold the Client harmless against all third-party claims of infringement of patent, trademark or industrial design rights arising from use of the Goods / the Service or any part thereof.

## **7. PACKING**

The Contractor shall provide such packing of the Goods as is sufficient to prevent their damage or deterioration during storage / transit to their final destination as indicated in the Contract. Packing case size and weights shall take into consideration, where appropriate, the remoteness of the final destination and withstand, without limitation, rough handling, exposure to extreme temperatures, salt and precipitation at all points in storage / transit. The Contractor shall arrange and pay for the packing of the Goods to the place of destination as specified in the Contract, and the cost thereof shall be included in the Contract Price.

## **8. INSURANCE**

The Contractor may provide such insurance of the Goods as is sufficient to protect against their damage or deterioration during storage / transit to their final destination as indicated in the Contract. The Contractor shall arrange and pay for the insurance of the Goods to the place of destination as specified in the Contract, and the cost thereof shall be included in the Contract Price.

## **9. LABELING**

The Goods supplied under the Contract, shall be clearly labeled so as to correspond with the delivered documentation, with proper labeling scheme provided by the Client. All networking equipment, cables, connectors, ports, boxes shall be clearly labeled.

## **10. DELIVERY**

**10.1.** The Contractor shall indicate his delivery approach clearly specifying the requirements for packing, shipping and unpacking of deliverable hardware with any associated/relevant software and its documentation. The approach shall address shipment of deliverables to the various

designated (installation) sites. The approach shall also specify any special shipping constraints such as custom requirements, security requirements, access arrangement or loading dock requirements. The Contractor shall deliver the Goods as specified by the Client at the time of delivery.

**10.2.** The Goods shall remain at the risk and under the physical custody of the Contractor until the delivery, testing and taking over of the Goods is completed.

**10.3.** The Contractor shall ensure that the Goods shall be delivered complete to enable the testing and training to proceed without interruption. If it shall appear to the Client that the Goods have been or are likely to be delayed by reason of incomplete delivery or for any other reasons, he may require the Contractor at the expense of the Contractor to dispatch the missing items of the Goods or suitable replacements thereof to the site of delivery by the fastest available means including air freight.

**10.4.** The Contractor shall include in the Tender a detailed logistics plan which shall include support details for transportation, mobilization and personnel scheduling during project implementation and the warranty period. The Contractor shall provide maintenance, supply and procurement support necessary for Client to maintain all system, at the contracted performance and reliability level. The Contractor shall arrange and pay for the transport of the Goods to the place of destination as specified by the client.

## 11. EXECUTION SCHEDULE

11.1. Project will be completed in all respect within 225 days after signing of the contract. The 3 years warranty and support services (SLA) are governed under this contract

| S # | Deliverable  | Time-Line                    |
|-----|--|------------------------------|
| 1.  | Day of Signing of Contract   | <u>I</u>                     |
| 2.  | Provision of Project Management Documents  | <u>T + 120 Days</u>          |
| 3.  | Drawings – Certified by PTA Technical committee  |                              |
| 4.  | Completion of Civil Works  |                              |
| 5.  | Training on DC Deployment as mentioned in BOQ  |                              |
| 6.  | Delivery of DC Equipment   |                              |
| 7.  | Successful installation and commissioning of DC Equipment and issuance of Provisional Acceptance Certificate by client | <u>T + 180 Days</u>          |
| 8.  | Training on DC Operations  |                              |
| 9.  | Physical Migration of Existing Server Rooms and network  | <u>T+ 225 Days</u>           |
| 10. | Request for Final Acceptance Test (FAT)  |                              |
| 11. | Issuance of Final Acceptance Certificate by client   |                              |
| 12. | Warranty and support (SLA)   | 3 year after issuance of FAC |

11.2. However, in case of any unavoidable/unforeseen delay (i.e. Force Majeure) incurred either by the Contractor or the Client, necessary timeline extension would be agreed mutually between

both parties, however it has to be communicated to each other at least 10 days but not later than 15 days before expiry of the timeline above otherwise penalty clauses will be invoked.

## **12. INSTALLATION AND IMPLEMENTATION**

12.1. The Contractor shall ensure that the implementation design conforms to an open standard by which new services can be added without disruption to existing services.

12.2. The Contractor shall ensure that the implementation is fault tolerant. This is accomplished by supplying a set of programs and procedures that allow the system recovery or roll back when a fault is detected.

12.3. The Contractor shall provide a document stating step-by-step procedures for installation and disaster recovery to the client.

12.4. The Contractor shall provide all the recent patches and updates for Firmware/Hardware, on a reliable media, with proper labeling, during the installation to the Client.

12.5. The Contractor shall configure the system for high availability and reliability, of all hardware and software. The Contractor shall submit detailed and complete installation, transition and cutover plan for the new system, installation procedures for the new components specifying equipment checkout, installation constraints, operational cutover, maintenance prior to Client acceptance and if special security and/or access arrangements are required.

## **13. SITE PREPARATION**

13.1. The Contractor shall be responsible to survey the site, prepare the site, determine power, air conditioning and floor space requirements, identify and install, if necessary, any special / additional power and air conditioning requirements, for the proposed equipment, if any.

13.2. The Client shall facilitate the Contractor in discharge of the above responsibilities.

## **14. SAFETY**

14.1. The Contractor shall be responsible for the embedding of safety features in the inherent design of the equipment, for elimination of identified hazards, including but not limited to high voltage, electromagnetic radiation, sharp points and edges, etc., and reduction of associated risk to personnel and equipment.

14.2. The Contractor shall be responsible for the addition of bilingual warnings and caution notices, where hazards cannot be eliminated or risks cannot be reduced.

14.3. The Contractor shall be responsible for the protection of the power sources, controls, and critical components of the redundant systems and subsystems by shielding or physical separation when possible.

## **15. TEST EQUIPMENT AND TOOLS**

The Contractor shall evaluate the existing facilities and abilities of the Client to accomplish corrective and preventive maintenance and support and identify additional skills, test equipment and tools required to maintain and support the new equipment. Such test equipment and tools

shall be state of the art in design aimed at providing an efficient, systematic and cost-effective repair operation for all replaceable components.

## **16. SPARE PARTS AND SUPPORT**

16.1. The Contractor shall ensure that the Goods provided by the Contractor, under the Contract are standard and of exact nature, and incorporate all recent improvements in design and materials, unless provided otherwise in the Contract.

16.2. The Contractor shall further ensure that the Goods provided by the Contractor, under the Contract shall have no defect, arising from design, materials, installation, configuration, or from any act or omission of the Contractor that may develop under normal use of the provided Goods.

16.3. The Contractor shall maintain sufficient backup stock of spare parts and tools locally at sites, for the maintenance of the supplied Goods, during the warranty period.

16.4. The Contractor shall ensure availability of spare parts and technical assistance for all components for at least three years, without major changes, after the completion of final acceptance.

16.5. During the validity of the contract/warranty period the Contractor shall give three months' advance notice on any discontinued part(s) with a suggestion for appropriate alternatives failing which will cause forfeiture of retention money.

16.6. The Contractor shall also identify and provide the following:

16.6.1. Items (repairable spares, parts and consumable supplies) that are needed to maintain design performance, reliability and availability standards prescribed in the Technical Specifications. The quantity of spare parts and consumable items provided and kept shall be equal to the requirements for one year of operating stock;

16.6.2. Critical items, whose failure would cause a system failure;

16.6.3. items of high cost and/or long lead time (over thirty working days);

16.6.4. items whose design reliability is such that normal stock replenishment would not justify maintaining a level of the item in stock.

## **17. INSPECTION AND TESTING**

17.1. The Client shall inspect and test the Goods supplied, the Services provided or the Works carried out, under the Contract, to verify their conformity to the Technical Specifications.

17.2. The inspections and tests shall be conducted at the premises of the Contractor or at the final destination before delivery at client premises. Where conducted at the premises of the Contractor, the Contractor shall provide all-reasonable facilities and assistance, including access to drawings, production data and online verification from official web site of the Manufacture, to the inspectors, at no charge to the Client.



17.3. The Client may reject the Goods, the Services or the Works if they fail to conform to the Technical Specifications, in any test(s) or inspection(s) and the Contractor shall either replace the rejected Goods, Services or Works or make all alterations necessary to meet the Technical Specifications, within two (02) weeks, free of cost to the Client.

17.4. The Client's post-delivery right to inspect, test and, where necessary, reject the Goods shall in no way be limited or waived by reason of pre-delivery inspection, testing or passing of the Goods.

17.5. Nothing contained in this document shall, in any way, release the Contractor from any Warranty or other obligations under the Contract.

## **18. TAKING-OVER CERTIFICATE**

18.1. The Contractor shall, by written notice served on the Client, apply for a Taking-Over Certificate with the request of Final Acceptance Test.

18.2. The Client shall, within 10 days of receipt of Contractor's application, either issue the Taking-Over Certificate to the Contractor, stating the date of successful inspection / testing of the Goods or any portion thereof, for their intended purposes; or reject the application giving the reasons and specifying the work required to be done by the Contractor to enable the Taking-Over Certificate to be issued.

18.3. Nothing contained in this document shall, in any way, release the Contractor from any Warranty or other obligations under the Contract.

18.4. Taking-Over Certificate will be issued by Client along the issuance of FAC.

## **19. WARRANTY**

19.1. The Contractor shall warrant to the Client that the Goods supplied by the Contractor, under the Contract are genuine, brand new, non- refurbished, un-altered in any way, of the most recent or current model, imported through proper channel, and incorporate all recent improvements in design and materials, unless provided otherwise in the Contract.

19.2. The Contractor shall further warrant that the Goods/Services supplied by the Contractor, under the Contract shall have no defect, arising from design, materials, workmanship or from any act or omission of the Contractor that may develop under normal use of the supplied Goods/Services.

19.3. The Contractor shall provide Manufacturer's warranty for minimum three (3) year (hereinafter referred as Warranty Period) after the issue of Taking-over Certificate in respect of Goods, the Services and the Works, or any portion thereof, as the case may be, which will include: Free, on site repair / replacement of defective / damaged parts and labor, as specified by contractor in Annex-B (Technical Evaluation);

19.4. The Contractor shall clearly mention Terms and Conditions of service agreement/contract for the Goods supplied after the expiry of initial warranty period. In case of International

Warranties, the local authorized dealers shall mention their service and warranty setup, details of qualified engineers, etc.

19.5. The Client shall, by written notice served on the Contractor or any other mechanism mutually agreed, promptly indicate any claim(s) arising under the warranty.

19.6. The Contractor shall, within the prescribed time period, after receipt of such notice, repair or replace the defective / damaged Goods or parts thereof on site, without any cost to the Client.

19.7. The end user licenses, end user warranties and end user contracting support services shall be in the name of Client, for the Goods supplied, the Services provided and the Works done, under the Contract.

## **20. OWNERSHIP OF GOODS AND REPLACED COMPONENTS**

Goods to be supplied, pursuant to the Contract, shall become the property of the Client when the Goods are taken over after proper process mentioned in clause (8) of the contract. Defective components to be replaced by the Contractor, pursuant to the Contract, shall become the property of the Contractor as and where it lies.

## **21. DEFECTS LIABILITY EXPIRY CERTIFICATE**

21.1. The Contractor shall, after expiry of the warranty period, by written notice served on the Client with a copy to the Client, apply for a Defects Liability Expiry Certificate.

21.2. The Client shall, within seven days of receipt of such notice, either issue the Defects Liability Expiry Certificate to the Contractor with a copy to the Client, stating the date of expiry of the Warranty Period for all the Goods supplied and fulfillment of all obligations by the Contractor, under the Contract; or reject the application giving the reasons and specifying the work required to be done by the Contractor to enable the Defects Liability Expiry Certificate to be issued.

## **22. PAYMENT**

22.1. The Contractor shall provide all necessary supporting documents along with invoice.

22.2. The Contractor shall submit an Application for Payment, to the Client. The Application for Payment shall: be accompanied by such invoices, receipts or other documentary evidence as the Client may require; state the amount claimed; and set forth in detail, in the order of the Price Schedule, particulars of the Goods supplied, the Services provided and the Works done, up to the date of the Application for Payment and subsequent to the period covered by the last preceding Payment, if any.

22.3. The Client shall get verified the details of Goods/equipment delivered against the invoice from the concerned Technical Team of the client and Payment shall be made on complete delivery of Goods/equipment and completion of relevant milestone as mentioned in 6(d) of the RFP, the same are reproduced below.

| Activity | Payment Schedule |
|----------|------------------|
|----------|------------------|

|   |   |
|---|---|
| <b><u>Activity 1:</u></b> <ul style="list-style-type: none"> <li>✓ Site survey, design &amp; drawings</li> <li>✓ Project Management Document/ Other documents</li> <li>✓ Completion of Civil Work</li> <li>✓ Training on DC Deployment</li> <li>✓ Delivery of DC Equipment</li> </ul> | 35 % of the cost of quoted financial bid (Annex-D)  |
| <b><u>Activity 2:</u></b> <ul style="list-style-type: none"> <li>✓ Commissioning of DC Equipment</li> <li>✓ Installation and Configuration</li> <li>✓ Training on DC Operations</li> <li>✓ Issuance of Provision Acceptance Test</li> </ul>   | 35 % of the cost of quoted financial bid (Annex-D)  |
| <b><u>Activity 3:</u></b> <ul style="list-style-type: none"> <li>✓ Physical Migration of Server Room</li> <li>✓ Provision of Network Distribution</li> <li>✓ GO Live</li> <li>✓ Request of Issuance of FAC</li> </ul>   | 30 % of the cost of quoted financial bid (Annex-D)  |
| <b><u>Activity 4:</u></b> <ol style="list-style-type: none"> <li>1. Release of Retention Money</li> </ol>   | Retention money (i.e. 10% of the contract price) will be released after expiry of the contract. |

22.4. All payments shall be subject to any and all taxes, duties and levies applicable under the laws of Pakistan, for the whole period starting from issuance of work/supply order till termination of the signed contract in this regard.

## 23. PENALTY

23.1. If the supplier fails to complete the project with in the given time-lines as per execution schedule. Then a penalty of 1% per day of retention money will be charged up to maximum period of 45 days. Thereafter, the case will be referred to PTA designated committee for final decision of either to granting more time to contractor with 1% penalty per day or the termination of contract after forfeiture of retention money.

23.2. If the penalty amount reaches to 10 % of the contract value and project is still not complete then retention money will be forfeited, contract will be terminated and blacklisting procedure against the contractor will be initiated.

23.3. Delivery of hardware in case event or such circumstance which are beyond the reasonable control of a party and prevents or cause to prevent a Party from complying with any of its obligations shall be deemed and considered as Force Majeure and will be treated accordingly.

23.4. A penalty of 1% of the of the retention money per day will be charged if the faulty hardware replacement time exceeds the time mentioned, in the certificate provided as per Annex-B- part B-(3), during the warranty period.

23.5. In case of failure to perform as per given SLA during the Warranty and support services period, Client shall be entitled to impose penalty @ 2,000/- per hour, which will be deducted from the retention money. The contractor will be informed about imposition of such penalty on monthly basis.

In case of continuous poor performance PTA reserves the right to cancel the contract and forfeit retention money in favor of PTA.

23.6. Contractor on issuance of FAC either adjust the imposed penalties in the 3rd payment or have to re-cope the retention money to 10% before start of warranty and support period.

## **24. CONTRACT AMENDMENT**

24.1. The Client may at any time, by written notice served to the Contractor, alter or amend the contract for any identified need/requirement in the light of prevailing rules and regulations.

24.2. The Contractor shall not execute any Change until and unless the Client has allowed the said Change, by written order served on the Contractor with a copy to the Client.

24.3. The Change, mutually agreed upon, shall constitute part of the obligations under this Contract, and the provisions of the Contract shall apply to the said Change.

24.4. No variation in or modification in the Contract shall be made, except by written amendment signed by both the Parties.

## **25. ASSIGNMENT / SUBCONTRACT**

25.1. The Contractor shall not assign or sub-contract its obligations under the Contract, in whole or in part, except with the Client's prior written consent.

25.2. The Contractor shall guarantee that any and all assignees / subcontractors of the Contractor shall, for performance of any part / whole of the work under the contract, comply fully with the terms and conditions of the Contract applicable to such part / whole of the work under the contract.

## **26. EXTENSIONS IN TIME FOR PERFORMANCE OF OBLIGATIONS UNDER THE CONTRACT**

If the Contractor encounters conditions impeding timely performance of any of the obligations, under the Contract, at any time, the Contractor shall, by written notice served to the Client, promptly indicate the facts of the delay, its likely duration and its cause(s). As soon as practicable after receipt of such notice, the Client shall evaluate the situation and may, at its exclusive discretion, without prejudice to any other remedy it may have, by written order served on the Contractor with a copy to the Client, extend the Contractor's time for performance of its obligations under the Contract.

## **27. BLACKLISTING**

If the Contractor fails / delays in performance of any of the obligations, under the Contract / violates any of the provisions of the Contract / commits breach of any of the terms and conditions of the Contract or found to have engaged in corrupt or fraudulent practices in competing for the award of contract or during the execution of the contract, the Client may without prejudice to any other right of action / remedy it may have, blacklist the Contractor, either indefinitely or for a stated period, for future tenders in public sector, as per provision of Procurement Rules in vogue.

## **28. FORFEITURE OF RETENTION MONEY**

28.1. The Retention Money shall be forfeited by the Client, on occurrence of any / all of the following conditions:

28.1.1.If the Contractor commits a default under the Contract;

28.1.2.If the Contractor fails to fulfill any of the obligations under the Contract;

28.1.3.If the Contractor violates any of the terms and conditions of the Contract.

28.2. If the Contractor fails / delays in performance of any of the obligations, under the Contract / violates any of the provisions of the Contract / commits breach of any of the terms and conditions of the Contract the Client may, without prejudice to any other right of action / remedy it may have, forfeit retention money of the Contractor.

28.3. Failure to supply required items/services within the specified time period will invoke penalty as specified in this document. In addition to that, retention money may be forfeited and the company will not be allowed to participate in future tenders as well.

## **29. TERMINATION**

### **29.1. Termination for Default**

29.1.1. If the Contractor fails / delays in performance of any of the obligations, under the Contract / violates any of the provisions of the Contract / commits breach of any of the terms and conditions of the Contract, the Client may at any time, without prejudice to any other right of action by written notice served on the Contractor indicate the nature of the default(s) and terminate the Contract, in whole or in part, without any compensation to the Contractor. Provided that the termination of the Contract shall be resorted to only if the Contractor does not cure its failure / delay, within fifteen working days (or such longer period as the Client may allow in writing), after receipt of such notice.

29.1.2. If the Client terminates the Contract for default, in whole or in part, the Client may procure, upon such terms and conditions and in such manner as it deems appropriate, Goods / Services / Works, similar to those undelivered, and the Contractor shall be liable to the Client for any excess costs for such similar Goods / Services / Works. However, the Contractor shall continue performance of the Contract to the extent not terminated.

### **29.2. Termination for Insolvency**

If the Contractor becomes bankrupt or otherwise insolvent, the Client may, at any time, without prejudice to any other right of action / remedy it may have, by written notice served on the Contractor indicate the nature of the insolvency and terminate the Contract, in whole or in part, without any compensation to the Contractor.

## **30. FORCE MAJEURE**

30.1. The Contractor shall not be liable for Penalty, forfeiture of its retention money, blacklisting for future tenders, termination for default, if and to the extent his failure / delay in performance /discharge of obligations under the Contract is the result of an event of Force Majeure.

30.2. If a Force Majeure situation arises, The Contractor shall, by written notice served on The Client, indicate such condition and the cause thereof. Unless otherwise directed by The Client in

writing, The Contractor shall continue to perform under the Contract as far as is reasonably practical, and shall seek all reasonable alternative means for performance not prevented by the Force Majeure event.

30.3. Force Majeure shall not include (i) any event which is caused by the negligence or intentional action of a Party or Agents or Employees, nor (ii) any event which a diligent Party could reasonably have been expected to both (A) take into account at the time of the conclusion of this Contract and (B) avoid or overcome in the carrying out of its obligations here under.

30.4. Force Majeure shall not include insufficiency of funds or failure to make any payment required hereunder.

### **31. DISPUTE RESOLUTION**

31.1. All disputes arising under this Contract, whether during the term of this Contractor after the termination or expiry of this Contract shall be referred to (i) Purchase Committee-I (PC-I) of the Client for amicable settlement /resolution of the dispute at first stage. (ii) In case of failure in settlement, at the second stage the case will be referred to the Authority of the Client through Director (ICT). The decision of the Authority to settle the issue amicably will be final and will not be challenged at any forum.iii) In the event of failure of amicable settlement of dispute as above, either party may refer the dispute to Arbitration under the provision of Arbitration Act, 1940 and the rules issued thereunder, at Islamabad, Pakistan.

31.2. No variations, amendments and in or modification to the terms of this Contract shall be made, except in writing and shall be binding only if duly agreed and signed by both the parties or their duly authorized representatives.

### **32. STATUTES AND REGULATIONS**

32.1. The Contract shall be governed by and interpreted in accordance with the laws of Pakistan.

32.2. The Contractor shall, in all matters arising in the performance of the Contract, conform, in all respects, with the provisions of all Central, Provincial and Local Laws, Statutes, Regulations and By-Laws in force in Pakistan, and shall give all notices and pay all fees required to be given or paid and shall keep the Client indemnified against all penalties and liability of any kind for breach of any of the same.

### **33. TRAINING**

33.1. The Contractor shall arrange and undertake a free of cost comprehensive training program from authorized training institute for the (03) staff nominated by the Client who have actively participated in the DC project to ensure that they shall acquire a good working knowledge of the operation, and general maintenance of the Goods to be supplied under the Contract.

33.2. The Contractor shall arrange one training related to Datacenter deployment and datacenter operation as mentioned in execution schedule and BOQ (Annex-????)

### **34. DOCUMENTATION**

The Contractor shall furnish the user documentation, the operation manuals, and service manuals for each appropriate unit of the supplied Goods and other information pertaining to the performance of

the Goods, in hard copy format, in soft copy format and in the form of on-line help, before the Goods are taken over by the Client.

### 35. MAINTENANCE & SUPPORT SERVICES (SLA)

Prospective Contractor will provide service and support during the complete life cycle of the Datacenter by providing one on-site resident engineer on 8 X 5 basis and on call after workhours and on weekends/holidays for routine Maintenance of individual equipment/component to ensure smooth operations of the entire Infrastructure solution i.e. design, product, and integration. Service includes equipment and system enhancements, replacements and upgrades, and migration of equipment and systems in concert with customer growth, technology upgrades and other operational dynamics. Many enhancements are mandated by the Equipment Manufacturers themselves as part of their Quality programs, and Sustaining Engineering efforts. These must be incorporated on site by the contractor without any cost to the customer.

**35.1. Fault Severity Levels Definitions:** International convention for the maintenance and support will be followed where faults are divided into following categories. The response as per mentioned categories is expected by the contractor 24X7 during M&S period of the contract.

**35.1.1. High/Critical: High level fault occurs when:** A critical element or arm of redundancy is affected or compromised, such that the critical equipment is still being supplied power and cooling, but there is only a single path/ source of power or cooling part is available. All of the System redundancy is not available. In such a situation, if another similar failure happens, the operation of the critical equipment could be affected.

A combination of faults, although such occurrence is highly unlikely, as a result of which critical equipment is not being powered or cooled. In such a case, the operation of the critical equipment could be affected. In this situation, urgent actions need to be undertaken to bring back the system back to normal operation as soon as possible.

**35.1.2. Medium: Medium level fault occurs when:** An element or component of the system is affected, but the system continues to operate, and redundant and parallel paths/ sources of power are still available. In this situation, actions need to be taken to bring the system back to its normal condition.

**35.1.3. Low: Low level fault occurs when:** An alarm or warning occurs in the system, and warrants attention, to review the situation and take corrective actions. It is important to take serious notice of a low-level alarm because it may be a precursor to a serious fault, if not taken care of.

35.1.4.

| Faults target Response Times |               |
|------------------------------|---------------|
| Criticality Level            | Response Time |
| High                         | 1 Hour        |
| Medium                       | 4 Hours       |
| Low                          | 24 Hours      |

**35.2. Operation Support Services Scope:** The contractor will be required to provide following services in the referred scope

35.2.1. Routine preventive maintenance (Quarterly basis). The following activities are required to be provided by contractor in RPM on quarterly basis:

- ✓ Cleaning of equipment, and logging of all measurements taken.
- ✓ Checking the mechanical soundness of all components.
- ✓ Simulation of operation and, if necessary, making adjustments to the electronic control circuits etc.
- ✓ Checking and adjustment of all electronic supervisory and alarm.
- ✓ Control checks on all electrical, mechanical and filter elements.
- ✓ Advise of any parts found defective and replace.
- ✓ Checking, replacement and maintenance of internal filters.
- ✓ Compile comprehensive maintenance report and submit one copy to the customer.

35.2.2. Repairs to the equipment in the event of failure: In response to a call/issuance of ticket by the customer help desk to Firm Service Department, their technical personnel will reach at the site of fault for the resolution and further action.

35.2.3. Supply of replacement components with the exception of replacement of parts caused by accidents, short circuits from outside, maltreatment, mal-operation, neglect of outside equipment conditions, such as insufficient cooling air or abnormal pollution, malicious damage, fire, theft, water or other reasons which are not the responsibility of Firm and beyond the control of Firm.

35.2.4. Supply of Replacement Components Firm will keep a good stock of spare parts for the 70% of the predictable faults. These spare parts will be supplied to the customer on Delivery Duty paid (DDP) basis.

**Note:** The consumable items including UPS batteries (not under warranty), NOVAC 1230 Fire suppression Gas will be the responsibility of client. However, the replacement of Air Conditioners & VESDA Filters replacement once in a year would be part of this service contract. In case of second time replacement (if required), cost will be charged separately through proper verification and invoice from the client.

**35.3. Reporting Structure:** Comprehensive reports will be generated as a part of the routine service operation. Following Reports should be submitted to client by contractor at the given frequency.

| Report Name                | Description  | Frequency         |
|----------------------------|--|-------------------|
| Incident Management Report | Number of tickets opened/closed.<br><del>Average resolution time</del> Number of | Monthly/On-demand |
| Problem Management         | Problem and requests tracking.   | Monthly           |
| Change Management          | Priority of changes.   | Monthly           |
|                            | Initiator and approver of changes.   |                   |



|                            |   |           |
|----------------------------|---|-----------|
|                            | Planned vs. emergency identifier.   |           |
| Root-Cause Analysis Report | Details the results of each Root-Cause Analysis (RCA) performed by Supplier       | on-demand |
|                            | Include the nature of the incident and plan to prevent or avoid future incidents. |           |
| Project Status Report      | Report on the status of all open, including actual vs. planned for                | Monthly   |

**35.4. Client's Responsibility:** Access to the Datacenter for the maintenance of equipment supplied by contractor will be the responsibility of Client. Specific Access by each engineer will be defined by ICT directorate.

### **35.5. Escalation Procedures**

**Service Engineer (Level 1):** The Service Engineers are the first person that comes across an issue on site. He will be the main point of contact for the end user regarding any anomaly. The service engineers must routinely involve in the maintenance of the entire datacenter Infrastructure, and have knowledge about the environment and application of the equipment.

**Service Support Experts (Level 2):** Service Support Experts is the next level of escalation. These individuals are active field engineers who have gained expertise with a particular product line and/ or are experienced in service for many years. Key objective is to solve the problem on an urgent basis and keep the end user informed of the progress being made.

**Manufacturer's Technical Support (Level 3):** This group typically reports and operates in the Service Organization of the respective manufacturers. The purpose of this group is to be the central clearinghouse for serious service related issues. The experts who have been identified by their management and have thorough knowledge about their products is available to provide phone and other needed support. In critical situations, they are required to travel to customer sites to resolve issues.

These experts will gather all information on a given product line from the beginning, and conduct important interface with their respective Quality and R&D organizations. They collect vital field data that is later analyzed, and vital Statistics reported to Service Management of the company.

**35.6. Handover/Transition Plan:** The handover of equipment and systems would take place after the systems are in routine operation. Any faulty equipment at the time of handing over will not become liability of Client under SLA. The contractor shall be responsible to provide transition plan in consultation with the client and perform formal transition training session with the client.

**35.7. Tools:** Tools required for services will be provided by contractor

**35.8. Availability of Spares:** Contractor must carry Factory supplied spares parts in their stock to support installed base. The objective is to keep the Mean Time to Repair (MTTR) at a very low level, thereby minimizing the disruption to the critical equipment. The suggested critical

equipment is listed below, however contractor can manage the availability as and when required

| <b>Electrical Power</b>                    | <b>Qty.</b> |
|--|-------------|
| Circuit Breakers for Electrical Panels     | 1           |
| UPS Power Modules                          | 1           |
| Static Modules                             | 1           |
| PDPM Critical Spares                       | 1           |
| <b>Precision Air Conditioners</b>          |             |
| Compressor                                 | 1           |
| Variable Speed Drive                       | 1           |
| Controller Card                            | 1           |
| Indoor Fan                                 | 1           |
| Display Card                               | 1           |
| Condenser Fan                              | 1           |
| <b>Environmental Monitoring</b>            |             |
| Sensors                                    | 1           |
| Sensor Pods                                | 1           |
| <b>Access Control</b>                      |             |
| Controller                                 | 1           |
| RFID Reader                                | 1           |
| 3 in 1 (Biometric + RFID + Key pad) Reader | 1           |
| Magnetic locks                             | 1           |
| <b>Surveillance</b>                        |             |
| Camera                                     | 1           |
| NVR Parts                                  | 1           |
| <b>Fire Detection &amp; Suppression</b>    |             |
| Controller                                 | 1           |
| VESDA Sensors                              | 1           |
| Photo Electric Sensors                     | 1           |

Note: any missing part in SLA shall also include at later part, the contractor is expected to improve upon this SLA.

### 36. INTEGRITY PACT

36.1. The Contractor hereby declares that it has not obtained or induced the procurement of any contract, right, interest, privilege or other obligation or benefit from Government of Pakistan or any administrative subdivision or agency thereof or any other entity owned or controlled by it (GoP) through any corrupt business practice.

36.2. Without limiting the generality of the foregoing [Name of Supplier] represents and warrants that it has fully declared the brokerage, commission, fee etc. paid or payable to anyone and not given or agreed to give and shall not give or agree to give to anyone within or outside Pakistan either directly or indirectly through any natural or juridical person, including its affiliate, agent,

associate, broker, consultant, director, promoter, shareholder, sponsor or subsidiary, any commission, gratification, bribe, finder's fee or kickback, whether described as consultations fee or otherwise, with the object of obtaining or inducing the procurement of a contract, right, interest, privilege or other obligation or benefit in whatsoever form from GoP, except that which has been expressly declared pursuant hereto.

36.3. The contractor certifies that it has made and will make full disclosure of all agreements and arrangements with all persons in respect of or related to the transaction with GoP and has not taken any action or will not take any action to circumvent the above declaration, representative or warranty.

36.4. The contractor accepts full responsibility and strict liability for making and false declaration, not making full disclosure, misrepresenting fact or taking any action likely to defeat the purpose of this declaration, representation and warranty. It agrees that any contract, right interest, privilege or other obligation or benefit obtained or procured as aforesaid shall, without prejudice to any other right and remedies available to GoP under any law, contract or other instrument, be voidable at the option of GoP.

36.5. Notwithstanding any rights and remedies exercised by GoP in this regard, [Name of Supplier] agrees to indemnify GoP for any loss or damage incurred by it on account of its corrupt business practices and further pay compensation to GoP in an amount equivalent to ten times the sum of any commission, gratification, bribe, finder's fee or kickback given by [Name of Supplier] as aforesaid for the purpose of obtaining or inducing the procurement of any contract, right, interest, privilege or other obligation or benefit in whatsoever form from GoP.

### **37. INDEMNIFICATION**

37.1. The contractor shall be liable for and shall indemnify, defend and hold harmless its, members, officers, directors, employees from and against all claims, damages, liabilities, losses, and expenses, whether direct or indirect, or personal injury or death to persons or damage to property arising out of (i) any negligence or intentional act or omission by the Contractor or its employees, personnel, agents or other authorized representatives in connection with the Contract or any other agreement/contract with the Client, (ii) arising out of or in connection with the performance of its obligations under this Contract or any other agreement, if any, with the Client; or (iii) arising out of the breach by the Contractor of any Intellectual Property Rights of third Party.

37.2. The Contractor shall further indemnify and hold harmless the Client in respect of any loss or damage caused to it on account of any representation made by the Contractor proving incorrect, in particular on account of any requisite permission not having been obtained or for breach of any warranty or otherwise.

### **38. RELATIONSHIP OF PARTIES.**

This Contract shall not be interpreted or construed to create an employer-employee relationship, an appointment to the service of the Client or even a promise to be so appointed, an association,

joint venture, partnership or special agency between the parties or to impose any partnership obligation or liability upon either party. The Contractor shall have no right, power, or authority to enter into any agreement or undertaking for, to act on behalf of, to act or be and agent or representative of, or to otherwise bind, the Client except when so expressly authorized by Client.

### **39. MISCELLANEOUS**

39.1. Any failure and/or delay by a Party to exercise or enforce any rights conferred under the contract shall not be deemed to be a waiver of any such right nor operate so as to bar the exercise or enforcement thereof at any time or times thereafter.

39.2. Any waiver must be given in writing and signed by the Party waiving its rights. Any waiver of a Party's rights, powers or remedies under the Contract must be in writing and must be dated and signed by an authorized representative of the Party granting such waiver and must specify the right and the extent to which it is being waived.

39.3. If any one or more of the provisions of this Contract/Agreement should be ruled wholly or partly invalid or unenforceable by a court or other government body of competent jurisdiction, then, the validity and enforceability of all provisions of this Contract/Agreement not ruled to be invalid or unenforceable shall be unaffected; However, the Parties shall promptly agree upon an alternative provision having an effect as similar as possible to the effect of the prohibited or invalid provision.

39.4. All additional amendments and variations to this contract shall be binding only if in writing and signed by the Parties or their duly authorized representatives.

39.5. All Annexures and contract Documents form an integral part of this contract and has to be read and construed as such.

39.6. This contract is intended by the parties as the final expression of their Agreement and is intended also as a complete and exclusive statement of the terms of their Agreement with respect to their relationship and all related matters.

**NON-DISCLOSURE AGREEMENT**

THIS NON-DISCLOSURE AGREEMENT (“NDA”) is made and entered into at **Islamabad, Pakistan** on the \_\_\_ day of -----2020

**BY AND BETWEEN**

Pakistan Telecommunication Authority, a statutory regulatory authority established under Pakistan Telecommunication (Re-Organization) Act, 1996, having its Head Quarter at F-5/1, Islamabad through Director Type Approval (hereinafter called as the “**CLIENT**” which expression shall where the context admits, include successors-in-interest and assigns) of the One Part:

**AND**

(insert name of Client) a Client incorporated under the laws of ..... having its registered office at----- through its authorized representative Mr..... (herein after called as “**Contractor**”) which expression shall where the context so allows include his/its successors-in-interest, executors, administrators, heirs and permitted assigns) of the **Other Part**;

(The Party of the One Part and Party of the Other Part shall hereinafter be collectively referred to as ‘Parties’ and individually as ‘Party’ as the context of this NDA requires).

WHEREAS,

1. The parties have entered into Agreement dated ....., (the “Agreement”) whereby, the Client may have to disclose certain nonpublic and proprietary information in result of execution and subsequent operation of the Agreement to the Contractor, which may fairly be considered to be of confidential nature including, but not limited to, methods, practices and procedures with which the Parties conduct their respective businesses, Internal working, decisions or Standard operating Procedures (SOPs) which are not Public documents, strategies in dealing with the Operators, Licensees, licensee lists, contract terms, methods of operation, software specifications, software codes, functionality, know how, and financial information etc. the Know-How, information pertaining to its principles, pricing policy, commercial relationship, negotiations or parties’ projects, affairs, finances or any information in respect of which the parties are bound by an obligation of confidentiality to any third party.
2. The Parties are desirous to set the terms and conditions hereunder and sign this NDA.

**NOW, THEREFORE THIS AGREEMENT WITNESSETH**, for good and valuable consideration, it is hereby agreed between the parties as under;

1. Under this Agreement the Contractor is under an obligation to keep all such information that is disclosed in the course of the contract with PTA, confidential and not to use it to the detriment of the Authority. In particular, the Contractor shall not use it for, or disclose it to, any of its new employer or client.

2. Any unauthorized disclosure or use of the Authority's confidential information could lead to litigation against the Contractor and any new employer.
3. **Definition of Confidentiality.** In addition to the definition used in the Agreement, "Confidential Information" refers to any information which has commercial value and is either (i) technical information, including patent, copyright, trade secret and other proprietary information, techniques, sketches, drawings, models, inventions, know-how, processes, apparatus, equipment, algorithms, software programs, software source documents, and formulae related to the current, future and proposed products and functions of the Client, or (ii) non-technical information relating to Client's functions, responsibilities, operations including, without limitation, plans and strategies, finances, financial and accounting data and information, suppliers, stakeholders, purchasing data, strategic plans and any other information which is proprietary and confidential to Client.
4. **Nondisclosure and Non-use Obligations.** Subject to confidentiality clause under the Agreement, the Contractor will maintain in confidence and will not disclose, disseminate or use any Confidential Information belonging to Client, whether or not in written form. Contractor agrees that Contractor shall treat all Confidential Information of Client with at least the same degree of care as Contractor accords its own Confidential Information. Contractor further represents that Contractor exercises at least reasonable care to protect its own Confidential Information. the Contractor agrees that Contractor shall disclose Confidential Information only to those of its employees who need to know such information and certifies that such employees have previously signed a copy of this Agreement.
5. **Survival.** This Agreement shall govern all communications between the Parties. Contractor understands that its obligations under Paragraph 4 ("Nondisclosure and Non-use Obligations") shall survive for two years after the termination or expiry of the Agreement. Upon termination of any relationship between the Parties, Contractor will promptly deliver to Client, without retaining any copies, all documents and other materials furnished to Contractor by Client.
6. **Governing Law.** This NDA shall be governed in all respects in accordance with the laws of Pakistan.
7. The Contractor agrees and undertakes that upon termination of the Agreement by the Client.
- shall return to Client all documents and property of Client, even if not marked "confidential" or "proprietary," including but not necessarily limited to drawings, reports, manuals, correspondence, customer lists, computer programs, and all other materials and all copies thereof relating in any way to Client, or in any way obtained by the Contractor during the course of the Agreement and shall not retain copies, notes or abstracts of the foregoing.
  - The Client y may notify any future or prospective employer or third party of the existence of this Agreement.
  - Injunctive Relief.** A breach of any of the promises or agreements contained herein will result in irreparable and continuing damage to Client for which there will be no adequate

remedy at law, and Client shall be entitled to injunctive relief and/or a decree for specific performance and such other relief as may be proper (including monetary damages if appropriate).

IN WITNESS WHEREOF, the Parties have executed this Agreement as of the dates written below.

| For and on Behalf of Client | For and on behalf of Contractor |
|-----------------------------|---------------------------------|
| Signed by_____              | Signed by_____                  |
| Seal-----                   | Seal_____                       |
| Witness_____                | Witness_____                    |

## **SEPARATE SOFTWARE REQUIRMENT**





*Government of Pakistan*  
**PAKISTAN TELECOMMUNICATION AUTHORITY**

**HEADQUARTERS F-5/1, ISLAMABAD.**

[http // www.pta.gov.pk](http://www.pta.gov.pk)

**TENDER DOCUMENTS**

| S. No. | Description of the Security Operation Center with managed Support Services from principle manufactures.   |
|--------|---|
|        | <i>Perpetual Software Licenses Requirement, Virtual Machines based, Supporting High Available Clustered Environment.</i>  |
| A.     | Establishment of <b>Unified (integrated)</b> Security Operation Center (SOC), through Software tools including SIEM, DLP, UEBA and SOAR, EDR etc (Complete Solution), 3 years support/SLA/Maintenance and Software updates. (Perpetual License) for 10000 EPS.<br><i>Components shall be covered.</i><br>(1) Security Information and Event Management (SIEM)<br>(2) Data Leak Prevention (DLP)<br>(3) Security Orchestration, Automation and Response (SOAR)<br>(4) User and Entity Behavior analytics. (UEBA)<br>(5) End point detection and response (EDR).<br>(6) Managed Support Service from principle manufacturers (01 year). |

**Scope of Work**

Pakistan Telecommunication Authority (PTA), (hereinafter referred to as “the Client”) invites / requests for proposals (RFP)/bids (hereinafter referred to as “the Tender”) from firms or companies for the award of contract for establishment of Security Operation Center (SOC), with three (03) years of after sale support, software updates (24X7), perpetual Software licenses and managed security support contract services with principle manufacturers for a period of 1 year. One of the main goals of the SOC should be to integrate Security data, operations and analytics under one platform and In this regard PTA may asked for Demonstration if necessary.

The Software will be delivered and deployed at PTA HQ, Islamabad.

The bidder shall bear all costs / expenses associated with the preparation and submission of the Tender(s) and the Client shall in no case be responsible / liable for those costs / expenses.

Detailed specifications of above-mentioned items are provided at Annex-C of this document. Notice of the bids issued on PTA’s/PPRA’s websites is an integral part of the bidding document.

**Clarification of the Tender Document**

The bidders can seek further information or clarification regarding the Tender Document, within 07 (Seven) calendar days of issuance/publication of tender. The clarification and its replies will be shared with all prospective bidders on PTA Website and will also be communicated at the pre-bid meeting.

Bidders should note that during the period from the receipt of the bid and until further notice from the Primary Contact given herein this document, all queries should be communicated via the Primary Contact and in writing (e.g. e-mail & letter) only.

Primary Contact

Director (ICT)

+92-51-9214123

+92-51-2878134

[salmanzafar@pta.gov.pk](mailto:salmanzafar@pta.gov.pk)

anwar@pta.gov.pk

# **Key Terms and Conditions for Integrated Security Operation Center (SOC)**

## **1. GENERAL INFORMATION**

- a. Tender documents duly completed in all respect will be received on or before July 2020 up to 1030 AM. The submission and evaluation of bids will be carried out under the "Single Stage Two Envelop Procedure". Technical bids will be opened by Technical Evaluation Committee, at PTA HQs on the same day at 1100 AM, in presence of bidder's representative, who may choose to attend.  
Bids should be addressed to Director (ICT) Pakistan Telecommunication Authority (PTA), Headquarters F-5/1, Islamabad.
- b. A bidder will be selected after an open, competitive and transparent bidding process in accordance with Public Procurement Regulatory Authority (PPRA) Ordinance, 2002, and Rules, Regulations and Guidelines made thereunder.
- c. Bid will comprise of single package containing two separate sealed envelopes. One envelop will contain the "Technical Proposal" and the second envelop will contain the "Financial Proposal". After technical evaluation, technically qualified bidders will be informed the date, time and venue for the opening of financial bids. Financial bids of technically disqualified bidders will be returned un-opened.
- d. Bidder shall quote for turnkey solution for Security Operation Center (all the software as per mentioned specifications in BOQ and compliance to the design requirements).
- e. The Bidders name must be on Active Taxpayers List (ATL) of FBR for Income tax and sales tax as on the date of bid submission and onward throughout the period of contract in compliance of the Eligible Bidders (Tax Compliance) Regulations, 2015.
- f. The Bidder shall provide an undertaking on stamp paper that the Bidder itself or its principle manufacturer have not been declared black listed by any Government/Semi-Government institutions.
- g. **PTA** shall not entertain incomplete or partial bids.
- h. Proposals shall be submitted in English language
- i. All prices mentioned in the Financial Proposal shall be in Pak Rupees (PKR).
- j. Each page of the Technical and Financial Proposal shall be signed by an authorized representative of the Bidder. The representative's authorization shall be confirmed by power of attorney accompanying the proposal.
- k. Bidder should be able to integrate all of the SOC components in unified (integrated) fashion (Solution) seamless integration, to avoid constantly pivoting between multiple security products. (SIEM, SOAR, EDR, UEBA).

1. Annex-A, Annex-B, Annex-C, Annex-D, Annex-E and Annex-F are integral part of technical and financial proposals, which shall be read/filled carefully, signed and stamped by the bidders. Further, details of the annexures are mentioned below:
  - i. Annex-A consists of mandatory requirements for bidder(s)
  - ii. Annex-B consists of technical capabilities of bidder(s), which has total 100 marks, whereas minimum qualifying marks are 70%
  - iii. Annex-C consists of technical evaluation of the product and bidder(s) may quote higher specs, however, quoting lower specs shall disqualify the bidder.
  - iv. Annex-D, comprises of financial bid format, to be followed by all bidders, the bidder should quote its rates clearly for each item, in the financial proposal in both figures and words without any ambiguity.
  - v. Annex-E is comprised of Agreement/Contract.
  - vi. Annex-F is Non-Disclosure Agreement.

## 2. BIDDER's INFORMATION

Bidders shall submit of following documents /information with relevant authorities;

|   |   |
|---|---|
| In case of Company                            | 1. Incorporation certificate from Securities and Exchange Commission of Pakistan (SECP).<br>2. Valid NTN and STN Certificates |
| Address<br>_____<br>_____                     |   |
| Telephone No                                  |   |
| Fax No  |   |
| Primary contact person<br>Name, phone, email: |   |

## 3. EVALUATION CRITERIA

- a. Technical bids shall be opened and evaluated by technical evaluation committee in view of Annex-A (mandatory requirement), Annex-B (Bidder Capability) and Annex-C (Technical Specification). Proposals complete as per Annex-A shall be evaluated and thereafter subject to obtaining at least 70% in Annex-B and fully compliant with Annex-C, shall be eligible for the participation in financial bid opening.
- b. Financial bids shall be opened and evaluated by procurement committee of PTA i.e. PC-I as the case may be, on the basis of criteria given in Annex-D.
- c. Work will be awarded to financially lowest bidder.

- d. If two or more bidders quote equal lowest price in financial proposals, then the work will be awarded to the one having higher technical marks, in technical evaluation.
- e. In case of refusal by successful bidder to sign contract, the client may award the contract to second financially lowest bidder subject to willingness of the 2nd lowest bidder to match the lowest bid of the first lowest bidder, availability of budget and availability of time and subject to submission of retention money as specified in tender document. In such case bid security will be forfeited by PTA.
- f. The bidder should quote its rates clearly against each item including all taxes, duties etc, in the financial proposal in both figures and words. However, the total aggregate amount of bid will be considered for evaluation/competition.
- g. Technically qualified/successful bidder(s) shall be notified in advance and invited for opening of the Financial Proposal(s). The Financial Proposals will be opened at the time and venue indicated by the Client (i.e. PTA) in the presence of the Bidders or their authorized representatives if they choose to attend.
- h. Financial Proposal evaluation will be conducted under the Rules in vogue. The Price evaluation will include all duties, taxes and expenses etc.
  - i. In cases of discrepancy between the cost/price quoted in Words and in Figures of a bid, actual quoted cost of all items will be calculated and aggregated by the PTA purchase committee I (PCI ) and will be taken as the total bid price inclusive of all applicable taxes. This evaluated price will be shared with all participants.
  - ii. In evaluation of the price of an imported item, the price will be determined and considered inclusive of the customs and other import duties etc.
  - iii. The Client will not be responsible for any erroneous calculation of taxes and all differences arising out as above shall be fully borne by the Successful Bidder. However, any subsequent changes in rates or structure of applicable taxes by the Government of Pakistan at any time during execution/evaluation period should be followed.
- i. Bidder should quote its rates clearly in the **financial proposal both in figures and words against each item** separately in financial proposals Annex-D.
- j. Definition of the terms set forth below for the purposes of this RFP, shall be as follows:
  - I. “corrupt practice” is the offering, giving, receiving or soliciting, directly or indirectly, of anything of value to influence improperly the actions of another party;
  - II. “fraudulent practice” is any act or omission, including a misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain a financial or other benefit or to avoid an obligation;
  - III. “collusive practice” is an arrangement between two or more parties designed to achieve an improper purpose, including to influence improperly the actions of another party;

- IV. “coercive practice” is impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party;
- V. “obstructive practice” is deliberately destroying, falsifying, altering or concealing of evidence material to the investigation or making false statements to investigators in order to materially impede PTA investigation into allegations of a corrupt, fraudulent, coercive or collusive practice; and/or threatening, harassing or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation.

#### **4. BID SECURITY/RETENTION MONEY**

- a. Bid security will be equal to 4% of the total bid amount and will be in the shape of pay order / demand draft in favor of Pakistan Telecommunication Authority, Headquarters, Sector F-5/1, Islamabad. Bid security shall only be attached with the financial proposal otherwise proposal will not be accepted.
- b. Bids without Bid security will be rejected without any right of appeal.
- c. Bid security of unsuccessful bidders will be returned after award of contract to successful bidder. Bid Security of successful bidder will be adjusted in retention money as mentioned in clause 4(e).
- d. Retention money equal to 10% of total contract value will be submitted before the signing the Contract, Retention money will be kept against warranty and support period i.e. (3 years) and will only be released after completion of warranty period and on issuance of performance acceptance certificate from two ICT officers, one of whom should be the responsible Officer for SOC and the other should be officer in charge.
- e. In case of cancelation of Supply Order due to default of the successful bidder the Bid security shall be forfeited in favor of PTA.
- f. Bid security will be forfeited if successful lowest bidder is unable to sign the Contract and was not able to deliver the SOC components after issuance of supply/work order and unable to submit the retention money.
- g. Retention money shall be submitted in shape of pay order/demand draft in favor of Pakistan Telecommunication Authority, Headquarters, Sector F-5/1, Islamabad.
- h. If selected bidder is not able to commission the systems as per industrial best practices or have provided the under rated or under quality product, support or services, retention money will be forfeited and supply order will be rejected, further to add the following conditions shall also apply to forfeit of retention money.
  - i. If the Contractor commits a default under the Contract;
  - ii. If the Contractor fails to fulfill the obligations under the Contract;
  - iii. If the Contractor violates any of the terms and conditions of the Contract.

iv. If Blacklisting procedure by the client is being initiated against the contractor.

## **5. PRICES**

- a. The bidder should quote its rates clearly in Pak Rupees inclusive of all applicable taxes, duties etc i.e. GST etc. in the financial proposal and amount in both figures and words as per format attached at Annex-D
- b. The rates quoted shall remain valid for 120 days from the date of opening of Technical Proposal.
- c. PTA will not bear transportation/carriage charges.

## **6. PAYMENT PROCEDURE**

- a. No advance payment shall be made against the supply of software mentioned in the tender document.
- b. Payment shall be made on provision of invoice/bill as per the schedule mentioned in 6(d).
- c. Payment shall be subject to withholding of applicable taxes as per government rules and after successful completion of milestones mentioned in 6(d) and subject to Performance Certificate from ICT directorate.

## **7. SOFTWARE**

- a. All the Software and Software tools required in under this RFP should be new, not used or and shall be issued in the name of POTA. The Software shall be verifiable by the manufacturer.
- b. Security operation Center Software, should be arranged through the legal channels by clearing all customs/duties/taxes (if any) levied by Govt.
- c. Verification of originality from principal manufacturer will be completed through email or in written letters or through principal manufacturer's website if deemed necessary.
- d. Configuration, installation and maintenance for 3 years will be the responsibility of the contractor after successful deployment as per FAC.
- e. All SOC tools and its rating will be checked against the Data Sheets on Principal manufacturer's website and any anomaly/issues found will be communicated to the contractor and its principle. Both will be asked to update the under rated tools, failing to replace the under rated tools within 4 weeks will lead to the termination of the contract and the Software will become the property of PTA, and retention money will be forfeited in favor of PTA, and the process of Blacklisting will also be initiated as per PPRA rules.
- f. A resident Engineer (1) shall be available at PTA SOC for a period of 1 year to train PTA resource and make the SOC operational with the help of vendor and principle manufacturer. (8 X 5).

## **8. DELIVERY PERIOD**

- a. Delivery of Software items shall be as per serial No.6 (d).
- b. Successful bidder will be responsible for the safe supply of Software at PTA HQs, Islamabad with the provision of warranty / support as mentioned in the bidding agreement.

## **9. AUTHORIZED DEALER/PARTNER**

Bidder shall be an authorized dealer/partner/distributor of the quoted brand. Current Certificate of dealership / partnership from principle manufacturers with Manufacturer Authorization letter in favor of PTA is required in the name of the authorized dealer / partner of the manufacturer.

## **10. PTA'S RIGHTS**

PTA may reject all bids or proposals at any time prior to the acceptance of a bid or proposal. PTA 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.

## **11. PENALTY**

- a. If the successful bidder fails to complete the project within the given time-lines as per execution schedule at Sr. 6(d) above, then a penalty of 1% per day of retention money will be charged up to maximum period of 45 days and the contract shall be terminated. however, if Force majeure situation occurs, then case will be referred to PTA designated committee for final decision of either granting more time to contractor with 1% penalty per day or the termination of contract after forfeiture of retention money.
- b. If the penalty amount reaches to 10 % of the contract value and project is still not complete then retention money will be forfeited, contract will be terminated and blacklisting procedure against the contractor will be initiated.
- c. Delivery of Software tools in case of events or such circumstances which are beyond the reasonable control of a party and prevents or cause to prevent a Party from complying with any of its obligations shall be deemed and considered as Force Majeure and will be treated accordingly.
- d. A penalty of 1% of the retention money per day will be charged if the under rated and under specification Software replacement time exceeds the time mentioned, in the certificate provided as per Annex-B- part B-(3), during the warranty period.
- e. If the Contractor fails to deliver the Software within due time mentioned in the work order, then a penalty of 01% per week of the total value of work Order will be charged up to a maximum of Eight (08) weeks (Days less than six will be considered as one week). Thereafter, supply order will stand cancelled and Bid security will be forfeited.
- f. In case of failure to perform as per given SLA during the Warranty and support services period, Client shall be entitled to impose penalty @ 2,000/- per hour, which will be deducted from the retention money. The contractor will be informed about imposition of such penalty on monthly basis.
- g. Contractor on issuance of FAC either adjust the imposed penalties in the 3<sup>rd</sup> payment or have to recoup the retention money to 10% before start of warranty and support period.
- h. In case of failure to perform as per PTA requirements during the maintenance and support services period, PTA reserves the right to cancel the contract and forfeit retention money in favor of PTA.

## **12. 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. Financial bid is submitted without the required Bid Security.
- b. Offers are received after specified date and time.
- c. Specification and other requirements are not properly adhered to or different from those given in the tender documents.
- d. GST and NTN certificates are not attached.
- e. Contractor is not in Active Taxpayer List (ATL) of FBR.
- f. Relevant experience is less than Three years.
- g. Sales and support Service Centers not in Islamabad / Rawalpindi.
- h. contractor is not an authorized dealer/partner and warranty provider of the principal manufacturer for Pakistan as per section 9 of this document.
- i. Any inferior product / spec / requirement that mentioned at Annex-C.
- j. Non-quoting International Branded items for any of the above hardware item will lead to disqualification.
- k. Non-production of Current principle manufacturer certificates with authorization letter.
- l. Ex-Stock Software tools are not allowed; new verifiable order shall be placed for the all Software tools.
- m. Non-production of Manufacturer Authorization letter as a Partner.
- n. Quoting under rated Software i.e. noncompliance the specifications etc.

### **13. PRE-PROPOSAL BIDDERS' QUERIES**

The bidder requiring any clarification(s) regarding queries related to tender documents may notify to Primary Contact in writing. The concerned officer will respond to any request for clarification, which are received well before (minimum 03 working days or more) the deadline for the submission of bids. PTA responses to queries will be published at PTA's Official website (<https://www.pta.gov.pk>) for the information to all prospective bidders (if not already clarified in the tender or deemed necessary for the bidder). PTA reserves the right to request additional information and/or clarifications from any or all bidders to this tender document and their proposals. A pre-bid query session will be arranged in PTA and notification of the pre-bid meeting will be published on PTA web-site.

### **14. AFFIDAVIT**

Affidavit on Judicial Paper to the effect that the firm has not been blacklisted by any government/semi government/autonomous body or company.

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

- a. PTA 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 bidder feeling aggrieved by any act of PTA after the submission of his bid may lodge a written complaint concerning his grievances not later than ten (10) days after the announcement of the bid evaluation report.
- c. The committee shall investigate and decide upon the complaint within fifteen (15) days of the receipt of the complaint.
- d. Mere fact of lodging of a complaint shall not warrant suspension of the procurement process.
- e. Any bidder not satisfied with the decision of the grievance committee may lodge an appeal to the PTA Authority, whereas, the decision of the Authority shall be final.

**16. TRAINING**

Successful bidder Shall be responsible for training of (3) ICT Officers from principle manufacturer authorized training center Free of Cost (FOC).

**20. CHECKLIST**

- a. Bid Security attached with financial bid in shape of bank draft/pay order.  
(Yes/No)
- b. Relevant documents for Annex A-C (Yes/No)
- c. List of such projects handled with copies of supply order. (Yes/No)
- d. List of clients with telephone numbers and addresses. (Yes/No)
- e. List of employees including technical staff for this project. (Yes/No)
- f. Affidavit on legal paper for not being black listed. (Yes/No)
- g. Copies of authorized dealership/partnership etc. of the principal manufacturers for Pakistan. (Yes/No)
- h. Specification and other requirements are met (Compliance) (Yes/No)
- i. Sales and support Service center is at Islamabad / Rawalpindi (Yes/No)

**Director (ICT)**

**Mandatory Requirements**

| S.#. | Requirement/ Document to be attached   | Compliance?<br>Yes/ No |
|------|--|------------------------|
| 1    | Bidder has to produce Sales Tax and Income Tax Registration.   |                        |
| 2    | Bidder also should be an Active Tax Payer of FBR.  |                        |
| 3    | Sales and support Service center at Islamabad/Rawalpindi   |                        |
| 4    | The undertaking is to be submitted that Bid Security has been attached in the Financial Proposal in the form of Demand Draft or Pay Order in favor of Pakistan Telecommunication Authority, Islamabad.   |                        |
| 5    | Manufacturer Authorization Letter is required for all participating contractors certifying that Fresh order shall be placed for the Software tools and no ex-tock Software shall be provided.  |                        |
| 6    | Minimum Three years of relevant local / international experience of the bidder is required.  |                        |
| 7    | Bidder must have at least three (03) Cyber security/information Security/Network Security certified resource. Annex-B part 4 referred.   |                        |
| 8    | Submission of affidavit on Stamp Paper to the effect that the firm has not been black-listed by any Government / Semi Government / Autonomous body or Company.   |                        |
| 9    | Bidder has successfully completed at least one (03) project and its corresponding Principal had carried out deployment of at least one (01) projects of establishment Security Operation Center (SOC) / (SIEM) at Pakistan/International (Proof of PO/Contract & allied documents is mandatory). |                        |
| 10   | All Software Licenses offered should be perpetual i.e. Software functionality shall work after the completion of 3 years support and warranty (Certificate has to be attached)   |                        |
| 11   | Certificate must to be provided stating that no part of Hardware and Software has been manufacturer/assembled or developed in India and Israel.  |                        |

**Annex-A is Mandatory.**

Note: All supporting documents to be attached with technical proposal.  
Non-fulfilling any of the above requirement will result into disqualification of bid.

**Please attach all Supporting Documents Serial wise**

**Technical Capabilities of Bidder**

| <b>Part B) General Evaluation*</b>   |  |                   |                      |  |
|--|--|-------------------|----------------------|--|
| <b>Sr. #</b>   | <b>Attributes</b>  | <b>Max. Score</b> | <b>Points Earned</b> | <b>Criteria</b>  |
| 1  | Detail of Offices  | 10                |                      | Firm has sales and services offices at Islamabad/Rwp (4 marks), Lahore (3marks) and Karachi (3 marks)  |
| 2  | Contractor must have deployed at-least one (01) SOC /SIEM project of similar scope in last three (3) years of above configuration. (documentary proof be provided i.e. Supply Orders etc.) | 20                | 10+10                | 10 Marks for each successfully completed project.  |
| 3  | Replacement time under rated Software / tools , under rated specifications After the or with in deployment phase <b>(Certificate has to be produced)</b>                                   | 15                | 15                   | 15 marks for Next Business Day (NBD), otherwise no marks   |
| 4  | Certified Technical staff CCSP/CEH/CISSP, CISM etc. technical staff /bidder organization, valid in the last three years  | 20                |                      | Relevant technical certified staff in Pakistan available and deputed for this project. (4 marks per technical staff) , SOC Engineers with relevant experience and skills of SOC deployment |
| 5  | Firm Experience (minimum 3 years' experience required - National)  | 15                | 15                   | (5 marks per year, beyond 3 years' Experience), up to maximum of three years.  |
| 6  | Solution Presentation, understanding of the requirement and Software compliance to the RFP rated as Excellent, Very Good and Good, vendors may be asked for demonstration if necessary     | 20                | 20                   | Solution Presentation to the committee for proof of concept.   |
| <b>Sub Total</b>   |  | <b>100</b>        |                      |  |
| <i>Minimum qualifying marks are 70% in above table whereas Annex "C" shall be compulsory. All supporting Documents to be attached for all relevant pages of Annex-B.</i> |  |                   |                      |  |

TECHNICAL EVALUATION-

(Data Center Facility)  
(To be included in Technical Proposal)

Security Operation Center (SOC)  
Scope of Work

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(To be included in Technical Proposal-Mandatory Requirements)

## 1. Security Operation Center General Requirements

| General Specifications of Security Operation Center (SOC) Overall requirements of the complete solution-All components |  |            |
|--|--|------------|
| Sr.No  | Mandatory System Performance and scaling requirements:   | Compliance |
| 1  | Should support advance Threat Intelligence and Behavioral Analytics and should aggregate, takes correlate measures, and isolate reports.   |            |
| 2.   | Should support input of data be from a diverse real-time parameters i.e. Flow analysis, system events, security events, audit logs, application logs etc   |            |
| 3.   | Should support Real Time Network and end point monitoring.   |            |
| 4.   | Must support real time contexts both internal users and hosts and external threat intelligence   | .          |
| 5.   | Should support DPI,IPS, IDS,SPI, Packet capture, File and registry monitoring and process activity.  |            |
| 6.   | The proposed solution must have analytics capability including time normalization, Meta data extraction, threat and risk contextualization.  |            |
| 7.   | Should support machine analytics capabilities including Behavioral profiling, AI & Machine learning, statistical analysis, advance correlation, black and white lists etc  |            |
| 8.   | Must support search advance search analytics, including unrestricted search, visualization, contextual search, log analysis, contextual lookups etc  |            |
| 9.   | Should support actionable output intelligence, including risk prioritization, real time dash boards, reports, incident tracking and metrics.   |            |
| 10.  | The proposed solution is expected to have an Advance Threat Intelligence & Behavioral Analytics platform which can be used to detect threats & shall be able to integrate with SIEM.   |            |
| 11.  | Must Support AI base incident and event investigation techniques. Must contain all AI algos and steps according to standards   |            |
| 12.  | Should support global threat intelligence as well as Local threat intelligence arising from internal LAN threats.  |            |
| 13.  | Solution Integrator Vendor should support integration of machine readable threat intelligence from different open and commercial sources. It should support providing weightage against sources and support algorithms to reduce false positives in threat intelligence feeds.   |            |
| 14.  | Vendor should apply threat intelligence received from different sources against the data received from different type of assets, network traffic, DB, security events & users to determine likelihood of threats & impact & suggest preventive measures.   |            |
| 15   | Solution provider should track status of assets against IoCs, Common remediation. As an example, CVEs related to shadow broker release should be used to identify potentially affected assets. Workflow should enable tracking the CVEs to closure through patching/other activities.  |            |
| 16.  | The lowest selected vendor should support an asset tracking mechanism wherein knowledge about assets in the Network is maintained which can help in Threat Anticipation by mapping threat intelligence/Vulnerability data to applicable assets. The OEM is expected to have a Threat Intelligence & Analytics platform which can be used to detect threats & should be able integrate with SIEM. |            |

|     |   |  |
|-----|---|--|
| 17. | <b>Should be able to launch Advance Threat Hunting techniques.</b> Clustering/Cluster Analysis, Searching, Grouping, Stack Counting   |  |
| 18. | Solution should support all four categories of threat hunting including Network Threat Hunting, User Behavior Anomaly Hunting, End Point Threat Hunting, and Application Threat Hunting.  |  |
| 19. | The proposed solution should have custom and prebuilt dashboards for threat hunting   |  |
| 20. | Network threat hunting should use AI (Artificial Intelligence) & Machine Learning abilities on network sources and enable hunting for attacks including but not limited to:(a) Lateral Movements b) Malware Beaconing (c) Data Exfiltration (d) Watering Hole attacks (e) Targeted network attacks (f) Dynamic DNS attacks  |  |
| 21. | The proposed solution should have capabilities to detect access anomalies e.g. Detection of deviation in the interaction of one server with another to detect attacks such as lateral movements.  |  |
| 22. | Network Threat hunting should utilize existing logs from security controls such as firewalls (at different layers such as Three Tier Architecture, Internet Edge, Partner Network), IPS devices, Web Security Firewall (Proxy), Load balancers , Anti APT solutions to detect targeted attacks.   |  |
| 23. | Must support Advanced Alert Analytics & Attack Detection Capabilities   |  |
| 24. | The proposed solution should have capabilities to detect any compromises by linking related alerts collected together over a period of time.  |  |
| 25. | The proposed Solution should have capabilities to correlate alerts between sources & destination IPs to find similar or colluding threat signals.   |  |
| 26. | The proposed Solution should have a knowledge base on methods used by attackers in various past breaches globally to create models to detect such attacks   |  |
| 27. | The proposed Solution should utilize data science techniques to identify kill chains for attacks such as lateral movements e.g. If a destination IP of one alert later becomes a source IP of another alert this suggests existence of a sequence.  |  |
| 28. | The proposed Solution should have detection models to find out threats sources are linked to the same attacker by grouping alerts with common characteristics like time, day location , target asset profiles etc.  |  |
| 29. | Should support Rule Based Detection of SIEM Capabilities  |  |
| 30. | In addition to the advanced analytics capabilities like MDR, solution should have capabilities to define rules on event logs captured from various sources to detect suspicious activities Examples ,Failed login attempts , Login attempts from suspicious locations ,Authorization attempts outside of approved list , Vendor logins from unauthorized subnets , Vertical & Horizontal port scans ,Traffic from blacklisted IPs , Login attempts at unusual timings |  |
| 32. | The proposed Solution should support auto-triaging of alerts from a number of security products including Firewalls, PIM, DLP, IPS, WAF, Anti-APT,HIPS ,AV etc.   |  |
| 33. | The proposed Solution should have advanced techniques such as machine learning that considers contextual parameters, historical behavior& external threat intelligence to score an alert based on criticality in real time.   |  |

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| 34. | The proposed solution should provide automated incident analysis features/service for analysis of alerts received to answer the following<br>(a) Impact on the assets. (b) Attributes of an attacker. (c) Determine other assets which may have been compromised.(d) Determine how long the attack campaign was & where was first compromise.(e) Maintain artifacts& IOCs of an incident. |  |
| 35. | The lowest selected Bidder to describe how it performs a strong Incident Response Mechanism in providing a comprehensive information about a potential incident, assemble the appropriate context, investigate as make recommendations so that containment & remediation activities shall be started asap.  |  |

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| 36. | The lowest selected bidder shall help ICT team in performing the post incident analysis & RCAs which shall help in improvising the Incident Management process & learning.   |  |
| 37. | The lowest selected bidder should maintain an Incident Management Plan with at least. the following:-<br>(a) Incident Management Plan &Governance. (b)Incident Response Plan Governance<br>(c) Workflows for Incident Management & Response (d) Communications & escalations Plan, Process & Metrics (e)Incident Management & Response Case Management |  |
| 38. | The proposed solution should support collection of events through customization of connectors or similar integration for the assets that are not natively supported. Solution should adhere to industry standards for event collection : syslog, OPSEC, WMI, SDEE,ODBC, JDBC, FTP,SCP, HTTP, text file, CSV,XML file etc.                              |  |
| 39. | The proposed solution should be able to collect data from new devices added into the environment, without any disruption to the ongoing data collection.   |  |
| 40. | The proposed solution should have connectors to support listed devices/ applications, wherever required the vendor should develop customized connectors.   |  |
| 41. | Should support authenticated, encrypted and compressed logs transfer between different medium for security of the data.  |  |
| 42. | The proposed solution provides options to load balance incoming logs to multiple collector instances.  |  |
| 43. | The proposed solution should support log collection from all major operating systems and their versions but not limited to Windows, Linux, AIX etc.  |  |
| 44. | The collectors should be able to store/retain both normalized & raw data for forensic purposes.  |  |
| 45. | In case of the connectivity issues, the data collector should be able to store the data for a period of 3 hours at its own repository. The retention, deletion, synchronization with SIEM database should be automatic but it should be possible to control the same manually.   |  |
| 46. | The proposed solution should support WAN optimization techniques ensure that the overall load on the network bandwidth at DC, WAN level is minimal.  |  |
| 47. | The proposed solution should have capabilities to store the event data in its original format in the central log storage.  |  |
| 48. | The proposed system shall be able to capture all details in raw log, events and alerts and normalize them into a standard format for easy comprehension.   |  |
| 49. | The proposed solution should support the following log collection protocols: Sys log over UDP / TCP, Syslog NG, SDEE, SNMP Version 2 & 3, ODBC, FTP, Windows Event Logging Protocol, Opsec,S Flow Netflow at a minimum.  |  |
| 50. | The proposed solution should prevent tampering of any type of logs and log any attempts to tamper logs. It must provide encrypted transmission of log data to the log management   |  |



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| 51. | The proposed solution should be able to perform the following correlations (but not limited to): Rule based, Vulnerability based, Statistical based, Historical based, Heuristics based, Behavioral based etc. across potentially disparate devices   |  |
| 52. | The dashboard be in the form of a unified portal that can show correlated alerts/ events from multiple disparate sources such as security devices, network devices, enterprise management systems, servers, applications, databases, etc.             |  |
| 53. | Events should be presented in a manner that is independent of device specific syntax and easy to understand for all users.  |  |
| 54. | Any failures of the event collection infrastructure must be detected and operations personnel must be notified.   |  |
| 55. | The proposed solution should display all real time events. The proposed solution should have drill down functionality to view individual events from the dashboard.   |  |
| 56. | The Dashboard should support reporting for consolidated relevant compliance across all major standards and regulatory requirements. This includes ISO 27001, RBI regulations, IT ACT, PCI DSS standards etc.  |  |
| 57. | The proposed solution should support creation of automated incident management workflows to track incident from creation to closure, provide reports on pending incidents. It should also permit upload of related evidences such as screenshots etc. |  |
| 58. | The proposed solution should support creation of automated Incident management workflows to track incident from creation to closure, provide reports on pending incidents. It should also permit upload of related evidences such as screenshots etc. |  |
| 59. | The proposed solution should have purpose-built network sensors to recognition of thousands of applications at Layer 7 with advanced analytics performed at wire speed  |  |
| 60. | The proposed solution must corroborate high-risk network activities at both the network and application level to minimize false positives.  |  |
| 61. | Must Incorporate additional sources of data(e.g., log and machine data, open source, and commercial threat intelligence feeds.  |  |
| 62. | Must support searchable rich Layer 2-7 network traffic metadata Visualizations from categorized application traffic.  |  |
| 63. | Full and selective intelligent packet capture for times when complete detail is needed- Replay captured data for additional analysis.   |  |
| 64. | Must Generate irrefutable network-based evidence for threat analysis, policy enforcement, audit support, and legal action   |  |
| 65. | Should integrated SOAR capabilities minimize response time, increase efficiency, and ensure high-quality incident response.   |  |
| 66. | Support Guided, customizable playbooks for tracking, documentation, and enforcement of defined workflows  |  |
| 67. | Should support for case management for end-to-end collaboration and management of alerts, evidence, and escalations.  |  |
| 68. | Shall support for Metrics for measuring and improving SOC responsiveness.   |  |

## 2. Security Information and Event Manager (SIEM)

| Sr.No  | Mandatory System Performance and scaling requirements:  | Compliance |
|--|---|------------|
| <b>Architecture and Deployment requirements.</b> |   |            |
| 1.   | Solution Should support High availability and distributed environment that can show multiple sites threats in one GUI |            |
| 2.   | Solution should support multiple deployment options (on-premises, all-in-one appliances, virtual appliances)          |            |

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| 3.  | The solution architecture support heavy load from disparate IT assets for logs collection with no major performance degradation                          | . |
| 4.  | The solution must provide a mechanism for offline updates of software, signatures' and configuration information with minimal user intervention          |   |
| 5.  | Ensure the integrity of the information collected from sources.  |   |
| 6.  | Integrated Threat Intelligence for events analyzing and correlation  |   |
| 7.  | Provision of flexible and ease of integration, filtering, searching, correlation and analysis of events, logs or data across all distributed components. |   |
| 8.  | The solution must supports file integrity monitoring for endpoints   |   |
| 9.  | The solution must have capability of vulnerability scanning.   |   |
| 10. | The solution must have ability to identify network intrusions.   |   |
| 11. | Solution Should support High availability and distributed environment that can show multiple sites threats in one GUI                                    |   |
| 12. | Solution should support multiple deployment options (on-premises, all-in-one appliances, virtual appliances)   |   |

### **Operational Requirements (Administration and Configurations)**

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| 13 | Log collection that supports both short-term (online) and long-term (offline) event storage.   |  |
| 14 | The solution must support Industry log collection methods  |  |
| 15 | The solution provides agent-less collection of event logs whenever possible.   |  |
| 16 | The solution must normalize common event fields (i.e. username, IP addresses, hostnames, and log source device, etc.) from disparate devices across a multi-vendor network.  |  |
| 17 | The solution supports built-in use cases as per threat detection, network & application behavioral analysis, incident etc.   |  |
| 18 | The solution must provide long term trend analysis of events   |  |
| 19 | The solution normalizes common event fields (i.e. usernames, IP addresses, hostnames, log source device, commands, time and date stamping etc.) from disparate devices across a multi-OEM network. Specialized parsing/normalization requirements also be supported. |  |
| 20 | The solution provides GUIs and wizards for to support the integration of unsupported data sources.   |  |
| 21 | The solution provides common taxonomy /categories of events.   |  |
| 22 | The solution provides the ability to store/retain both normalized and the original raw format of the event log for forensic purposes.  |  |
| 23 | The solution provides the ability to normalize and aggregate event fields.   |  |
| 24 | The solution supports the collector/agent send the log over TCP and encrypted from remote locations or secure zone.  |  |

### **Security Intelligence (Real time monitoring, Correlation, Analytics, Alerting and Alarms)**

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| 25 | The solution support and provide real-time monitoring of users and data access, intrusion, threats and attacks detection, behavioral profiling, suspicious/malicious activities, malware/virus proliferation, affected/compromised hosts, use cases |  |
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|   | anomalies, monitored assets anomalies, IPs and hostnames reputation, geo locations sessions, advanced persistent threats etc.  |  |
| 26  | The solution provides alerting based on observed security events, threats, indicators of compromise from monitored devices.  |  |
| 27  | The solution provides the ability to correlate information across potentially disparate devices.   |  |
| 28  | The solution should support a distributed database for event and network activity collection such that all information can be accessed from a single UI  |  |
| <b>Advance Threat Exchange</b>                              |  |  |
| 32  | The solution supports and provides threat exchange feeds   |  |
| 33  | The solution allows integration with the threat exchange feeds and provide real time visibility of global threat landscape automatically as per critical and severity ratings of threat.   |  |
| 34  | The solution must support the ability to correlate against 3rd party security data feeds (geographic mapping, known botnet channels, known hostile networks, etc.). These 3rd party data feeds should be updated automatically by the solution.            |  |
| 35  | The solution supports IP and domain reputation, geo-location monitoring.   |  |
| <b>Database Security, Events and Application monitoring</b> |  |  |
| 37  | User based activity analysis support   |  |
| 38  | Support for auditing / monitoring of DBMS including session monitoring/analysis; the solution should be able to capture DB audit trail without enabling it on DB (bidder can offer SIEM solution along with some additional tool to meet this requirement) |  |
| 39  | Support for Parsing of DBMS for security analysis  |  |
| 40  | Database audit trail's performance hit must be less than 6%  |  |
| 41  | Database audit logs should contain all information which is available in the standard audit trail logs of database   |  |
| 42  | Customized monitoring and analysis on DB   |  |
| 43  | Solution should be able to integrate with customized business critical systems (Logs parsing and reports configuration should be possible)   |  |
| 44  | GUI base event logs parsing for custom/non supported devices.  |  |
| 45  | Alert or block against rule violation on DB  |  |
| 46  | Device/system access monitoring and analysis   |  |
| 47  | Data monitoring (for access and other defined operations) and analysis   |  |
| 48  | Ability to detect access and leakage of sensitive data   |  |
| 49  | Ability to detect policy violations as per defined rules   |  |
| 50  | Database audit logs should contain all information which is available in the standard audit trail logs of database   |  |

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| 51               | Customized monitoring and analysis on DB  |  |
| 52               | Solution should be able to integrate with customized business critical systems (Logs parsing and reports configuration should be possible)                            |  |
| 53               | GUI base event logs parsing for custom/non supported devices.   |  |
| 54               | Alert or block against rule violation on DB   |  |
| 55               | Device/system access monitoring and analysis  |  |
| 56               | Data monitoring (for access and other defined operations) and analysis  |  |
| 57               | Ability to detect access and leakage of sensitive data  |  |
| 58               | Ability to detect policy violations as per defined rules  |  |
| <b>Reporting</b> |   |  |
| 59               | The solution must support the ability to schedule reports.  |  |
| 60               | The solution must provide templates for the easy creation and delivery of reports at multiple levels ranging from operations to business issues.                      |  |
| 61               | The solution should provide 'canned' out-of-the-box reports for typical business and operational Issues   |  |
| 62               | The solution should provide tanned' out-of-the-box reports for specific compliance regulations (PCI, SOX, FISMA) and control frameworks including (NIST, COBIT, ISO). |  |
| 63               | The solution must support the automated distribution of reports.  |  |
| 64               | The solution must support the capability to provide historical trend reports.   |  |

### 3. Data Loss Prevention (DLP)

| Sr.No | Mandatory System Performance and scaling requirements:  | Compliance |
|-------|---|------------|
| 1     | DLP component should include an entire set of context controls together with event logging and data shadowing for all local data channels on protected computers. |            |
| 2     | Network component should provide contextual control functions over network communications with port-independent protocol/application detection.                   |            |
| 3     | Content component should implement content monitoring and filtering of files transferred to and from  |            |
| 4     | Active Directory Group Policy Integration.  |            |
| 5     | Network Communications Control  |            |
| 6     | Device Whitelisting   |            |
| 7     | Network Communications Control  |            |

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| 8   | Content Filtering   |  |
| 9   | True File Type Control  |  |
| 10  | Clipboard Control   |  |
| 11  | Mobile Device Local Sync Control  |  |
| 12  | Printing Security   |  |
| 13  | Removable Media Encryption Integration  |  |
| 14  | Anti-Keylogger  |  |
| 15  | Network Awareness   |  |
| 16  | Tamper Protection   |  |
| 17  | Report Plug-n-Play Devices  |  |
| 18  | Audit Logging   |  |
| 19  | Data Shadowing  |  |
| 20  | Data Search   |  |
| 21  | RSoP Support  |  |
| 22  | The proposed product can be Hardware Appliance, VM, or Software installed on centralized server.  |  |
| <b>The proposed solution must have capability to control the below Device Types</b> |   |  |
| 23  | <b>Windows:</b> removable storage (flash drives, memory cards, PC Cards, eSATA, etc.), CD-ROM/DVD/BD, floppies, hard drives, tapes, Wi-Fi and Bluetooth adapters, Apple iPhone/iPod touch/ iPad, Windows Mobile, Palm OS, BlackBerry, MTP-enabled devices (such as Android and Windows Phone), printers (local, network and virtual), modems, scanners, cameras |  |
| 24  | <b>Mac:</b> removable storage, hard drives, CD/DVD/BD, Wi-Fi and Bluetooth adapters   |  |
| 25  | <b>Session terminal/BYOD:</b> mapped drives (removable, optical, hard), USB devices   |  |
| <b>The proposed solution should minimum secure the below Ports:</b>                 |   |  |
| 26  | <b>Windows:</b> USB, FireWire, Infrared, Serial, Parallel   |  |
| 27  | <b>Mac:</b> USB, FireWire, Serial   |  |
| 28  | <b>Session terminal/BYOD:</b> USB, Serial   |  |
| <b>The proposed solution should control/monitor below Network Communications:</b>   |   |  |
| 29  | <b>Email:</b> SMTP/SMTPS, Microsoft Outlook (MAPI), IBM Notes   |  |
| 30  | <b>Webmail:</b> AOL Mail, Gmail, Hotmail/Outlook.com, GMX.de, Web.de, T-online.de, freenet.de, Yahoo! Mail, Mail.ru, Rambler Mail, Yandex Mail, Outlook Web App/ Access (OWA), NAVER, ABV Mail  |  |
| 31  | <b>Social Networking:</b> Facebook, Twitter, Google+, LinkedIn, Tumblr, Instagram, Pinterest, MySpace, Vkontakte, XING.com, LiveJournal, MeinVZ.de, StudiVZ.de, Disqus, LiveInternet.ru, Odnoklassniki.ru   |  |
| 32  | <b>Instant Messengers:</b> Skype/Skype for Web/Skype for Business/Microsoft Lync 2013, ICQ Messenger, Zoom, Viber, IRC, Jabber, Windows Messenger, Mail.ru Agent, WhatsApp, Telegram  |  |

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| 33  | <b>Cloud File Sharing Web Services:</b> Amazon S3, Dropbox, Box, Google Docs/Google Drive, OneDrive, iCloud, GMX.de, Web.de, MagentaCLOUD, freenet.de, Cloud Mail.ru, Yandex.Disk, Sendspace, MediaFire, WeTransfer, 4shared, GitHub, MEGA   |  |
| 34  | <b>Web Search:</b> Google, Yandex, Bing, Baidu, Yahoo, Mail.Ru, Ask.com, AOL Search, Rambler, Wolfram Alpha, DuckDuckGo, WebCrawler, Search.com, Wayback Machine, Dogpile, StartPage, Excite, NAVER, Web.de  |  |
| 35  | <b>Career Search:</b> CareerBuilder, College Recruiter, craigslist, Dice, Glassdoor, GovernmentJobs, HeadHunter.com, Hired, Indeed, JobisJob, Mediabistro, Monster, Simply Hired, Ladders, us.jobs, USAJOBS, ZipRecruiter, Rabota.ru, Yandex.Rabota, SuperJob.ru, hh.ru  |  |
| 36  | <b>Internet Protocols:</b> HTTP/HTTPS, FTP/FTPS, Telnet  |  |
| 39  | <b>Other:</b> SMB shares, Skype Private Conversations, Skype media calls, Torrent, Tor Browser traffic   |  |
| <b>The proposed product must have Clipboard Control in below areas:</b>               |  |  |
| 40  | Inter-application clipboard copy/paste operations  |  |
| 41  | Data types independently controlled: files, textual data, images, audio, unidentified data with text content filtering   |  |
| 42  | Copy operations between host and guest OS clipboards   |  |
| 43  | Screenshot operations (PrintScreen and 3rd-party applications)   |  |
| <b>Data Types Controlled:</b>   |  |  |
| 44  | The product should recognize files dangerous, confidential files regardless of the file extension  |  |
| 45  | The proposed production should have parsable file formats, including Microsoft Office, Adobe PDF, AutoCAD, OpenOffice, Lotus 1-2-3, WordPerfect, WordStar, Quattro Pro, emails archives, CSV, DBF, XML, Unicode, etc.  |  |
| 46  | <p>The proposed product should identified all archives formats, including GZIP, RAR, ZIP, etc.</p> <p>File/document properties</p> <p>Embedded image properties</p> <p>Clipboard data types (files, textual data, images, audio, unidentified)</p> <p>Sync protocol objects (Microsoft ActiveSync®, WMDC, Apple iTunes®, Palm® HotSync)</p> <p>Oracle IRM-sealed documents (security contexts)</p> <p>Data objects classified by Boldon James Classifier</p> |  |
| <b>The proposed solution should have Content Filtering Technologies capabilities:</b> |  |  |
| 47  | Data fingerprints (partial/exact document matching) within Data Classifications  |  |
| 48  | keyword matching templates with 'whole word', 'case' options, morphological analysis for words in English, French, Italian, German, Spanish/Catalan, Russian, Portuguese, Polish and support for Russian transliterated words  |  |
| 49  | pre-built Regular Expression (RegExp) pattern templates with numerical threshold conditions & Boolean (and/or/not/...) rule connectors (Ex. SSN, passport, other government issued numbers, credit cards, banking industry numbers, etc.)  |  |

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| 50  | File and extended document properties (name, size, if password protected, if contains text, last modified date/time, title, subject, tags, categories, comments, authors, Oracle IRM security contexts, Boldon James classifications, etc.)   |  |
| 51  | Content contingent shadowing of removable media, Plug-n-Play storage devices, printing, network protocols, PDA local synchronizations and clipboard operations for all parsed file formats and data types   |  |
| 52  | Optical Character Recognition (OCR) for the common languages like Arabic, English, Urdu   |  |
| <b>The proposed product must have capability of Virtualized Environment Control:</b>    |   |  |
| 53  | The proposed DLP should control redirected removable drives, network shares, USB devices, printers, clipboard, and serial ports via desktop and session remoting protocols (RDP, ICA, PCoIP, HTML5/WebSockets) as well as network communications of Virtual Desktop & Terminal Session clients. Provides Virtual DLP for BYOD devices restricted to only accessing corporate applications/ data in this way |  |
| 54  | The proposed DLP must have Supported environments at minimum MS RDP/RDS (including MS RemoteFX), Citrix XenApp, Citrix XenDesktop, Citrix XenServer, VMware View, Windows Virtual PC, and Oracle VM VirtualBox  |  |
| <b>The proposed Solution must have capability of below Encryption Integration:</b>      |   |  |
| 55  | Windows BitLocker To Go, Apple OS X FileVault, PGP® Whole Disk Encryption, TrueCrypt®, Lexar® Media SAFE S1100 & S3000 Series, SafeDisk®, SecurStar® DriveCrypt® (DCPPE), Sophos SafeGuard Easy, SafeToGo, Rutoken Disk   |  |
| <b>The proposed Solution must have capability of Content Discovery:</b>                 |   |  |
| 56  | The proposed DLD should have capability to cover Windows endpoint computers and servers (file systems, email repositories, mounted peripherals), network shares, storage systems  |  |
| 57  | The proposed DLD should have capability to discover Local synchronization folders of cloud-based file hosting applications: Amazon Cloud Drive, Box, Cloud Mail.ru, Copy, Dropbox, Google Drive, iCloud, MediaFire, OneDrive, SpiderOak, SugarSync, Yandex.Disk   |  |
| 58  | The discovery Mode can be agentless, agent-based, mixed   |  |
| 59  | The proposed DLP should have Manual and scheduled automatic task execution  |  |
| 60  | The DLP should perform Actions: Delete, Safe Delete, Delete Container, Set Permissions (for NTFS files), Log, Alert, Notify User, Encrypt (using EFS for NTFS files)  |  |
| 61  | The DLP should perform Static & dynamic target list configuration, discovery reports, automatic on-demand Discovery Agent installation/removal  |  |
| <b>The proposed DLP should have “Full-Text Audit &amp; Shadow Repository Searching”</b> |   |  |
| 62  | All parsed file formats and data types  |  |
| 63  | PCL, Postscript, and other printout formats   |  |
| 64  | Indexing and search based on: log record parameters, word, phrase, number   |  |

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| 65 | Search logic: “all words” (AND), default “hit count” weighting, configurable term and field weighting               |  |
| 66 | Stemming and noise-word filtering for Arabic, English, French, German, Italian, Japanese, Russian, Urdu and Spanish |  |
| 67 | Synonym text search for English and any other languages   |  |
| 68 | Optical Character Recognition (OCR) allows the extraction of text from images for further indexing                  |  |
| 69 | Running searches by schedule and automatic emailing of search results   |  |

#### 4. Security Orchestration, Automation and Response(SOAR)

| Security Orchestration, Automation and Response. (SOAR) |   |            |
|---|---|------------|
| Sr.No   | Mandatory System Performance and scaling requirements:  | Compliance |
| 1   | <b>Integration:</b><br>The SOAR technology shall converge security orchestration and automation (SOA), security incident response (SIR) and threat intelligence platform (TIP) capabilities into single solutions.  |            |
| 2.  | <b>Limited Human resource:</b><br>Should support to automate repeatable tasks, streamline workflows and orchestrate security tasks resulting in operational scale. SOAR should provide ICT team more reach –  |            |
| 3.  | <b>Improving alert triage quality and speed:</b> Security monitoring systems (such as SIEMs) generate a high number of alerts, including many found to be “false positives” or simply not relevant after additional investigation. Security and risk management leaders then treat alert triage in a very manual way, which is subject to mistakes by the analysts. This leaves real incidents ignored. SOAR should help improve the signal-to-noise ratio by automating the repeatable, mundane aspects of incident investigation. This creates a positive situation where analysts can spend more time investigating and responding to an event instead of spending most of their time collecting all the data required to perform the investigation. |            |
| 4.  | <b>Should support for a centralized view of threat intelligence:</b> Should support a large number of security controls on the market should be able to take benefits from native threat intelligence or external threat intelligence engine. SOAR tools allow for the centralized collection, aggregation, deduplication, enrichment of existing data with threat intelligence and, importantly, conversion of intelligence into action.   | .          |
| 5.  | <b>Reduce time to respond, contain and remediate:</b> Must be able to deal with increasingly aggressive threats, such as ransomware, where rapid response of only minutes at at best is required in order to stand a chance of containing the threat that is spread laterally in Network. Reducing the response time, including incident containment and remediation’ should be most effective ways to control the impact of security incidents. the sooner it can get to it, the smaller it is, and therefore the easier it is to put out.   |            |
| 6.  | <b>Reducing unnecessary, routine work for ICT Staff:</b> SOC teams are often working with multiple tools. They are looking at a stream of row and column SIEM console alerts, threat intelligence (TI) service portals for information about the entities involved, and endpoint detection and response (EDR) for context on what is happening on the affected endpoint. They may even be using workflow tools to control the triage and investigation processes.   |            |
| 7.  | SOAR should unifies case management, automation, real-time collaboration, and native Threat Intel Management in its portfolio support security orchestration, automation, and response (SOAR) .ICT team should manage alerts across all sources,  |            |



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|   | standardize processes with playbooks, take action on threat intelligence, and automate response for any security use case.   |  |
| <b>Standardize and Automate Processes for Any Security Use Case</b> |  |  |
| 8   | <b>Scalable, consistent incident response: Should support</b><br>Hundreds of out-of-the-box playbooks covering a wide range of security use cases (e.g., phishing, IOC enrichment, vulnerability management, cloud security) speed up deployment. A powerful SDK allows to build our own integrations.   |  |
| 9.  | <b>Support for Modular, customizable playbooks.</b><br>Should support a visual drag-and-drop playbook editor with thousands of executable actions addresses simple use cases and complex, custom workflows. Playbook blocks/tasks should be nested and reused across playbooks. Real-time editing, a playground for testing playbooks, and YAML-based sharing make playbook creation quick and easy support. |  |
| 10.   | <b>Should support balance of automation and human response;</b><br>Maintain control over automated processes with manual approval tasks available as part of any playbook.   |  |
| 11.   | <b>Orchestration across the product stack</b><br>Automate incident enrichment and response across hundreds of products, integrations with data enrichment tools, threat intelligence feeds, SIEMs, firewalls, EDRs, sandboxes, forensic tools, messaging systems, etc  |  |
| <b>Case Management-Real time Collaboration</b>                      |  |  |
| 12.   | <b>Real-time investigation and collaboration</b><br>Should support for Each incident has a virtual War Room with built-in ChatOps and command line interface (CLI) so analysts can collaborate and run security actions in real time   |  |
| 13.   | <b>Machine learning assistance</b><br>Support for an ML-driven virtual assistant learns from actions taken in the platform and offers guidance on analyst assignments and commands to execute actions.   |  |
| 14.   | <b>Continuous learning</b><br>Support for Auto-documentation of all investigation actions aids analyst learning and development  |  |
| 15.   | <b>Streamlined, automated reporting</b><br>Flexible, widget-driven dashboards and reports eliminate manual reporting and can be fully customized to your organization's needs.   |  |
| <b>Security Orchestration</b>                                       |  |  |
| 16.   | <b>Custom views for security incident types</b><br>Shall support for Fully customize incident views, layouts, and flows with access control specific to security personas/roles  |  |
| 17.   | <b>Indicator and incident correlation</b><br>A central indicator repository enables searches and automated indicator   |  |
| 18.   | <b>Flexible reports customizable to the needs of your organization</b><br>Support for Widget-driven dashboards and reports offering full visibility into metrics.  |  |
| 19.   | <b>On-the-go incident monitoring</b><br>Must support mobile applications provides dashboards, task lists, and incident actions on the go.  |  |
| 20.   | <b>Automated ticketing process</b><br>Out-of-the-box integrations with case management platforms such as ServiceNow, Jira, Zendesk, Remedy, Slack, and more enable full automation of the ticketing process  |  |
| <b>Threat Intel Management</b>                                      |  |  |
| 21.   | <b>Automated multi-source feed aggregation</b><br>Should support to Eliminate manual tasks with automated playbooks to aggregate, parse, deduplicate, and manage millions of daily indicators across dozens of supported sources   |  |

|                     |  |  |
|---------------------|--|--|
| 22.                 | <b>Granular indicator scoring and management</b><br>Take charge of your threat intelligence with playbook-based indicator lifecycle management and transparent scoring that can be extended and customized with ease.  |  |
| 23.                 | <b>Operational efficiency</b><br>Shall Boost collaboration and reveal critical threats by layering third-party threat intelligence with internal incidents to prioritize alerts and make smarter response decisions.   |  |
| 24.                 | <b>Native threat intelligence</b><br>Shall support for contextual threat intelligence service.   |  |
| 25.                 | <b>Hands-free, automated playbooks with extensible integrations</b><br>Take automated action to shut down threats multiple third-party products with purpose-built playbooks based on SOAR capabilities  |  |
| 26.                 | <b>Common Use Cases</b><br>Phishing, Security Operations, Incident alert handling, vulnerability management, threat hunting, cloud security orchestration etc  |  |
| 27.                 | <b>Alert Sources.</b><br>SIEM and analytics, XDR or EDR, vulnerability scanner, email, ticketing, threat intelligence feeds, cloud security alerts etc.  |  |
| 28.                 | <b>Respond.</b><br>Threat intelligence, malware analysis, email, web gateways, ticketing.  |  |
| <b>Integration</b>  |  |  |
| 29.                 | <b>Analytics and SIEM.</b><br>Should support Leading SIEM vendors.   |  |
| 30.                 | <b>Threat Intelligence.</b><br>Should support leading threat intelligence vendors.   |  |
| 31.                 | <b>Malware Analysis.</b><br>Should support leading threat intelligence vendors.  |  |
| <b>MSSP Support</b> |  |  |
| 32.                 | <b>Privacy.</b><br>Must support of data isolation with master-tenant separation and execution isolation with each tenant running as a separate process, as well as network isolation with engine (proxy) for segmented networks without firewall changes.                    |  |
| 33.                 | <b>Role Based Visibility and Control.</b><br>Update playbooks, reports, automation, and more for all tenants from the master (MSSP) account. Customers can be granted access to their environments only. Third-party integrations can be done at the master or tenant level. |  |
| 34.                 | <b>Joint Investigation.</b><br>Should support to collaborate with customers in real time via War Room for joint investigations. Support quick customer onboarding and scalability.   |  |
| 35.                 | <b>Flexible deployment support</b><br>Support for Integrate with cloud-based services, MSSP systems, and customers' on-premises systems  |  |

## 5. User Entity and Behavioral Analysis (UEBA)

| General Specifications of UEBA |   |            |
|--------------------------------|---|------------|
| Sr.No                          | Mandatory System Performance and scaling requirements:                            | Compliance |
| 1                              | Support for creation of Watch Lists for suspicious users<br>On-premise deployment |            |

|                          |   |   |
|--------------------------|---|---|
|                          | <p>UEBA should be intelligent and should automatically tweak itself through automated learning, and also support creation of custom models</p> <p>Said UEBA tool should be able to integrate with popular SOAR &amp; SIEM solution for monitoring user endpoints and reporting anomalies</p> <p>The solution should be able to highlight risky and potentially abnormal user activity</p> <p>The solution must be able to adjust itself in DHCP environment and yet uniquely identify machines with high accuracy despite change of IP Address.</p> |   |
| <b>Administration</b>    |   |   |
| 2.                       | Taking input from solutions such as SIEM, SOAR and DLP for Risk Intelligence  |   |
| 3.                       | The solution should have permission for device admin, subnet admin, audit log, edit model and advanced search, etc.   |   |
| 4.                       | The solution should allow administrators to manage subnet by different admin accounts   | . |
| 5.                       | The solution should allow administrators to modify model formula  |   |
| 6.                       | Should be able to show us RAW packet headers, or relevant data basis on which anomalous behaviour was observed  |   |
| 7.                       | The solution should allow administrators to setup of device label, device priority, alert by priority, alert by score   |   |
| 8.                       | The solution should allow administrators to define new models/new rules for threat scenario specific to organization  |   |
| 9.                       | Integration with enterprise authentication / SSO platform for simplifies access   |   |
| 10.                      | Ability to monitor, report and alert on application processes and tasks, system resources utilization thresholds and overall system availability  |   |
| 11.                      | Ability to monitor, report and alert on the data streaming in and out of the system   |   |
| <b>Anomaly Detection</b> |   |   |
| 12.                      | Identity based threat plane behavior analysis for account hijacking and abuse   |   |
| 13.                      | Proactive and actionable alerting for anomalous behavior and risk scores  |   |
| 14.                      | High privilege access anomaly detection for misuse, sharing, or takeover  |   |
| 15.                      | Session Tracking of user in case of IP switch   |   |
| 16.                      | Identifying Trusted Host and Entity Compromise instances  |   |
| 17.                      | Uses self-learning behavioral analysis to dynamically model each device, probabilistically identifying any anomalous activity that falls outside of the device's normal pattern of life.  |   |
| 18.                      | Collection of models/rules to catch transfers in unusual device/direction combinations. This models/rules is likely to require tuning in organization environment   |   |
| 19.                      | Unusual Credential use - models the times and devices normally used by each username, and alerts when there is an unusual combination   |   |
| 20.                      | Should allow administrators to upload PCAPs for analysis  |   |
| 21.                      | Use of unsupervised and supervised machine learning algorithms  |   |
| 22.                      | Ability to define custom peer groups and perform behavior analysis  |   |
| 23.                      | Ability to support fine-tuning of various meta-data attributes of behavior models   |   |
| 24.                      | Ability to provide feedback on the security analytics results and retrain the models  |   |
| 25.                      | Flexibility to configure rolling window of period for behaviour profiling   |   |
| 26.                      | Ability to build custom behaviour models without requiring any development effort   |   |
| <b>Dash Boards</b>       |   |   |

|   |  |  |
|---|--|--|
| 27.                                       | Dashboards for different roles and access levels   |  |
| 28.                                       | Customizable dashboards, configurable policies and risk model optimization   |  |
| 29.                                       | Provide various visualization options for deep-dive investigation, compliance and reporting  |  |
| 30.                                       | Ability to perform detailed search on raw and enriched data  |  |
| 31.                                       | Support pivoting of search results based on various data elements including identity, entity, HR attributes, resource, event, threat, etc.   |  |
| 32.                                       | Intelligent search providing auto-complete, auto-suggest capabilities based on contextual data   |  |
| 33.                                       | Provide a "Single-pane-of-glass" view into high risk user / entity showing behaviour pattern with respect to activities, locations, devices, sessions, usage and risk trends   |  |
| <b>Deployment</b>                         |  |  |
| 34.                                       | The solution has self-learning algorithms (supervised and unsupervised machine learning) to identify patterns of normal and malicious user and entity behaviour with advanced mathematics, without any connection to cloud or third party platform |  |
| 35.                                       | The solution is a network-centric approach and allow network data ingestion including Layer 2 SPAN, Layer 3 SPAN and Network taps  |  |
| 36.                                       | The solution should be installed passively into infrastructure   |  |
| 37.                                       | The solution is able to automatically identify and classify users and entities (i.e. devices, applications, servers, data, or anything with an IP address)   |  |
| 38.                                       | The solution should be able to analyse DHCP traffic to resolve and model devices, users and IP changes over time.  |  |
| 39.                                       | All relevant data including machine learning and alerts, flow data (history of connections), Advanced Search data, and PCAPs (Packet Capture) should be stored in the appliance.   |  |
| 40.                                       | Support highly available component architecture ensuring no single point of failure  |  |
| 41.                                       | Support DR failover / fallback setup   |  |
| <b>Reports and additional requirement</b> |  |  |
| 42.                                       | Exporting (PCAPs) and report generation capabilities (Excel, PDF, XML)   |  |
| 43.                                       | Availability of out of the box reports for analysts to make investigation decisions  |  |
| 44.                                       | Availability of out of the box reports for administration and management   |  |
| 45.                                       | Availability of out of the box reports for audit and compliance  |  |
| 46.                                       | Ability to create custom reports and schedule the same   |  |
| 47.                                       | Ability to schedule reports with periodic intervals  |  |
| 48.                                       | The solution should provide coverage into virtual environment  |  |
| 49.                                       | The solution should provide coverage into Cloud environment via Connectors or Sensors  |  |
| <b>Use Cases.</b>                         |  |  |
| 50.                                       | Access high-value assets: User starts accessing and downloading highvalue assets with increased frequency.   |  |
| 51.                                       | Usage changes over time: User activity deviates from normal over a short period of time or a gradual change over an extended period of time.   |  |
| 52.                                       | Assess frequency of assets: User's volume of activity suddenly spikes or access to number of assets increases rapidly  |  |
| 53.                                       | Usage deviates from peer group: User pattern of activity starts deviating from the peer group  |  |

|                       |  |  |
|-----------------------|--|--|
| 54.                   | Change in account privileges: User attempts to change privileges on existing account or open new accounts on other systems   |  |
| 55.                   | Application misuse by sequence of actions: User performs a sequence of actions which no other user is performing   |  |
| 56.                   | Sensitive data leakage: User manipulates http request / response parameter to download sensitive data  |  |
| 57.                   | Application misuse by malware or bots such as A bot or malware attacks an application or access sensitive data   |  |
| 58.                   | Dynamic adjustment of risk scores: Dynamically adjust the risk score of rules when triggered against particular user or users  |  |
| 59.                   | UEBA should activate a rules for a set of users until a specified condition or specified time window.  |  |
| 60.                   | Account accessing more high value assets than normal   |  |
| 61.                   | More data being transferred then a normal to and from servers and/ or external locations   |  |
| 62.                   | Privileged account accessing high-value servers from a new location for the first time   |  |
| 63.                   | Account used for the first time in a long time   |  |
| 64.                   | Rare privilege escalation  |  |
| 65.                   | Accounts being used from peculiar locations  |  |
| 66.                   | User involved in previously malicious or threatening behaviour   |  |
| 67.                   | User an outlier within their peer group  |  |
| 68.                   | Detect insider threats, account hijacking and abuse, plus data exfiltration  |  |
| 69.                   | Risk-scored time line to predict, detect and deter insider and advanced threats  |  |
| <b>User Interface</b> |  |  |
| 70.                   | Work-centric UI with case management, or input to third-party solutions  |  |
| 71.                   | The solution should consist of a powerful visualization platform that enables threats being analysed and investigated intuitively  |  |
| 72.                   | The solution should be able to administer from a web browser   |  |
| 73.                   | The solution's UI should be able to provide a real-time, operational overview of an organization's entire network and the threat level it faces at any given time  |  |
| 74.                   | The solution's UI should allow displaying threat by user, device and model with sorting and selected period  |  |
| 75.                   | The solution's UI should allow zooming to the device and breach time period with graphical view, event log and breach log  |  |
| 76.                   | The solution's UI should be able to play-back particular events in a graphical way   |  |
| 77.                   | The solution's UI should allow checking the device summary and similar device behavior   |  |
| 78.                   | The solution's UI should allow using advanced search for detail connection information. Certain application-layer protocols are further decoded during this process.   |  |
| 79.                   | The solution's UI should provide a Google-like search bar to search a device by Hostname, Mac Address, Username of user logged into that device, IP Address, Nickname.   |  |
| 80.                   | Generate a threat Report which will look over a specified time period and produce a PDF based on the statistics generated.   |  |
| 81.                   | Allow analysts to be able to label device or groups of devices within the platform. Eg: This feature will allow us to enable monitoring of high-risk users or devices such as departing employees or key assets. |  |

|     |   |  |
|-----|---|--|
| 82. | Allows us to create Incidents out of Events/alerts onto which analysts will collaborate inputs and for which, reports can be exported |  |
| 83. | Multiple UI elements can be dragged into an incident, from metric graphs to device log entries.                                       |  |
| 84. | System and application logs show who did what, at what time, within the UEBA application  |  |

## ***6.End point detection and Response with Server Security (EDR)***

| <b>General Specifications of EDR</b> |   |                   |
|--------------------------------------|---|-------------------|
| <b>Sr.No</b>                         | <b>Mandatory System Performance and scaling requirements:</b>   | <b>Compliance</b> |
| 1                                    | Shall be able to monitor any suspicious activity on the Network   |                   |
| 2.                                   | Shall be able to support behavior analytics and machine learning  |                   |
| 3.                                   | Must be able to pin point indicator of compromise (IoC)   |                   |
| 4.                                   | Must be able to quickly investigate, isolate, remediate, and recover from threats in minutes.   | .                 |
| 5.                                   | Must be able to investigate and work in integrated fashion to isolate and remediate threats with or without scripts.  |                   |
| 6.                                   | Should be able to roll back the ransomware up to a period of 70 hours.  |                   |
| 7.                                   | Must support Network isolation and limits device communications so attackers are locked out and malware cannot establish C & C " In addition, network isolation limits the malware's lateral movement.            |                   |
| 8.                                   | Must support Process isolation and restricts malware from creating/spawning new processes, limiting its impact. Users are also restricted from initiating new applications that may complicate a response effort. |                   |
| 9.                                   | Should be able to support Server isolation and allows administrators to lock out the machine. In addition, the server isolation can be leveraged to prevent insider threats.                                      |                   |
| 10.                                  | Must support both Server and Workstation EDR.   |                   |

### **Any inferior Specifications will be rejected**

Multiple options are not allowed; vendor should Quote only one option. Quoting multiple option will lead to disqualification.

**To accommodate multiple principle manufacturer slight changes are allowed after the approval of technical committee.**

**Note: please improve upon any other requirement which is not listed and should be the responsibility of the contractor.**

**Contractors are encouraged to improve upon this Technical RFP**

**Annex-D**

**Financial Proposal (Bid Format) SOC (with 3 years Software updates and SLA/Support 24X7)**

Date \_\_\_\_\_

Company Name \_\_\_\_\_

| Sr.No | Required Specification   | Quoted Specification<br>(With Brand Name) | Unit Price<br>Inclusive of<br>Applicable<br>Taxes | Qty | Total Price<br>Inclusive of<br>Applicable<br>Taxes |
|-------|--|---|---|-----|--|
| 1     | Establishment of Security Operation Center (SOC), 3 years support/SLA/Maintenance and Software updates. (Perpetual License) for 10000 EPS.<br><b>Security Information and Event Manager (SIEM)</b> |   |   | 1   |  |
| 2     | <b>Data Leak Prevention (DLP)</b>  |   |   | 1   |  |
| 3     | <b>Security Orchestration, Automation and Response (SOAR)</b>  |   |   | 1   |  |
| 4     | <b>User Entity and Behavior Analysis (UEBA)</b>  |   |   | 1   |  |
| 5     | <b>EDR with Server Security</b>  |   |   | 1   |  |
| 6     | <b>Managed Security Support services</b>   |   |   | 1   |  |

Note: please add more rows, if principle manufacturer is more than one.

Amount in words: (Rupees.....)

Note: All of the above SOC components shall be quoted for 3 years Support/SLA/Maintenance and Managed Services from Principle manufacturer with perpetual software licenses.

**Any inferior specifications will be rejected**

**FINANCIAL PROPOSAL not accompanied with Bid security will be rejected without any right of appeal.**

**Multiple options are not allowed, quoting multiple options will lead to disqualification.**

Authorized Signature of bidder with seal stamp

## Hardware, Databases and application Servers detail.

| Sr.No | Item   | Quantity                                   |
|-------|--|--|
| 1     | Physical Windows Servers                                     | 30   |
| 2.    | Active directory Domain Controllers with windows DNS Service | 4  |
| 3.    | DHCP Servers Windows   | 4  |
| 4.    | Oracle Database Servers running on windows servers           | 8  |
| 5.    | Ms Sql Servers   | 8  |
| 6.    | Windows Application Servers                                  | 10   |
| 7.    | Windows Web Servers  | 12   |
| 8.    | Email Servers  | 4  |
| 9.    | Redhat Linux Servers   | 4  |
| 10.   | Ubuntu Linux Servers   | 24   |
| 11.   | Postgres Sql Running on Ubuntu Linux                         | 12   |
| 12.   | Linux Web Servers  | 8  |
| 13.   | Hardware Based Firewalls Fortinet                            | 12   |
| 14.   | Hardware Based Firewalls PAN                                 | 2  |
| 15.   | Manageable Switches  | 20   |
| 16.   | Kaspersky anti-virus business advance                        | 300 users license.                         |
| 17.   | Juniper Firewalls  | 2  |
| 18.   | Vmware Virtualization  | 100 VMs                                    |
| 19    | Containers   | 64 Containerized Servers based on HP chase |
| 20.   | Load Balancers   | 4  |

Note: Please conduct a survey for any other infrastructure related hardware/Software.



**AGREEMENT***(To be executed on Rs.100/- Judicial paper)*

This Supply & Service Agreement (the "Agreement") is made on this day \_\_\_\_\_ 2020;

By and Between

**Pakistan Telecommunication Authority**, a statutory body established under Pakistan Telecommunication (Re-organization) Act, 1996, having its principle office at PTA H/Q, F-5/1, Islamabad (hereinafter referred to as "**Client**" which expression shall where the context admits include its administrators and assigns) of the One Part

And

M/s \_\_\_\_\_

through Mr. ....

bearing CNIC.....

having place of business at.....

(hereinafter referred to as "**the Contractor**," which expression shall where the context so allows include his/its successors-in-interest, executors, administrators, heirs and permitted assigns) of the **Other Part**

(If when and where applicable the Party of the One Part and Party of Other Part shall hereinafter be collectively referred to as 'Parties' and individually as 'Party' as the context of this Agreement requires).

**WHEREAS;**

- A. Client is desirous of procuring & deployment of **Security Operation Center** Software (hereinafter referred to as "**SOC**") for its HQs Building at F-5/1, Islamabad and have them **delivered/supplied and installed/configured and subsequently maintained** by the Contractor in accordance with the terms of this Agreement;
- B. The Contractor is a \_\_\_\_\_ (*details of incorporation*) being engaged in the business of supplying electrical, electronic equipment including but not limited to integrated security technologies, and has agreed to **supply, deliver, install/configure and thereafter provide maintenance services (hereinafter referred as Services)** of the SOC at Client HQs Building on the terms and subject to the conditions as set forth hereunder.
- C. The Contractor represents that;
  - i. It has the relevant expertise and holds valid and subsisting licenses/permissions, authorizations/approvals required from the Government of Pakistan and;
  - ii It has the requisite expertise and resources to provide top quality of requisite Services of SOC as per Bill of Quantity ("BoQ") to the Client in accordance with highest industry standards and satisfaction of the Client. The Contractor undertakes that the Services shall be provided only through the staff/labour/workforce that has the requisite expertise and experience in this regard.
- D. Upon the basis of the representations and warranties of the Contractor contained herein, the Client wishes to appoint the Contractor to Supply and provide the Services at HQ Building premises under this Agreement;

**NOW THEREFORE**, for the consideration provided herein the representation and warranties, covenants, conditions and promises contained herein below and intending to be legally bound, the Client and Contractor hereby agree as follows:

## 1. Scope of Agreement

Subject to the terms and conditions of this Agreement the Contractor agrees to provide Services as per requirements prescribed under **Bidding Documents and its attached Annexure-A, B, C, D;**

## 2. Agreement Documents

2.1 The following documents shall be deemed to form, and be read and construed as, an integral part of this Agreement:

- a) Invitation to bid
- b) Bidding documents along with its Annexures
- c) Bill of Quantity (BoQ)
- d) Special Stipulations (if any).
- e) Addenda and Corrigenda, if any, issue by the Clients and duly accepted by the Contractor at the signing of the Contract.
- f) Bid security/ Tender Guarantee
- g) Form of Agreement/ Contract Agreement
- h) Clients order to commence the work.
- i) Limit of Bid security.
- j) Any Correspondence by the Clients/Contractor mutually accepted by the Client and the Contractor.

## 3. Term

- 3.1 Upon signing of this Agreement, the Contractor shall be obligated to start the work on specified location by Client as per clause 6d.
- 3.2 However, in case of any unavoidable/unforeseen delay (i.e Force Majeure) incurred either by the Contractor or the Client, necessary timeline extension would be agreed mutually between both parties, however, it has to be communicated to each other during the occurrence of Force Majeure as per clause 11.

## 4. Termination

- 4.1 Notwithstanding anything herein contained the Client shall be exclusively entitled to terminate this Agreement.
- a. without advance notice, in case the Contractor is in breach of any of the terms of this Agreement, or in case the Client is not satisfied with the Services.
  - b. Without cause, by giving three (03) days advance written notice to the Contractor.
  - c. If the Services do not meet the specifications, terms & conditions mentioned in the **Annexure-A, B, C, D of Bidding documents**.
- 4.2 In case of such termination, the Contractor shall not be paid for any Services actually rendered up to the date of termination and any advance payment by the Client in respect of the Services not performed or in respect of period falling after the effective date of termination shall be refunded by the Contractor, to the Client. The Client, shall not, because of expiration or termination of this Agreement, be liable to the Contractor for any compensation, reimbursement, or damages because of the loss or prospective profit or because of expenditures or commitments incurred in connection with the business of the Contractor.

## 5. Deliverables

d. Deliverables & Payment Milestone for Security Operation Center is mentioned as under:

| Activity   | Payment Schedule   | Timeline<br>(calendar days)   |
|--|--|-------------------------------|
| <b>Activity 1:</b> <ul style="list-style-type: none"> <li>✓ Site survey, design &amp; drawings</li> <li>✓ Project Management Document/ Other documents</li> <li>✓ Delivery of Software tools</li> </ul>  | 10 % of the quoted financial bid (Annex-D)   | 30 Days                       |
| <b>Activity 2:</b> <ul style="list-style-type: none"> <li>✓ Training on SOC Deployment</li> <li>✓ Commissioning of Security Operation Center</li> <li>✓ Installation and Configurations</li> <li>✓ Issuance of Provision Acceptance Certificate</li> </ul> | 70 % of the quoted financial bid (Annex-D)   | 45 Days                       |
| <b>Activity 3:</b> <ul style="list-style-type: none"> <li>✓ Managed Security Services from Principles through lowest bidder</li> <li>✓ Request of Issuance of FAC</li> </ul>   | 20 % of the cost of quoted financial bid (Annex-D)   | 30 days                       |
| <b>Activity 4:</b> <ul style="list-style-type: none"> <li>✓ Release of Retention Money</li> </ul>  | Retention money (i.e. 10% of the contract price) will be released after expiry of the contract | 3 years after issuance of FAC |

**Note:** Trainings may be rescheduled on mutual consent with contractor.

## 6. Charges

- 6.1 In consideration of rendition of Services, all amounts paid to the Contractor shall be inclusive of all taxes, levies, duties, and any other deduction related thereto etc.
- 6.2 All payments to be made by the Client to the Contractor shall be subject to such deductions and withholding as are required by prevailing laws which shall be to the account of the Contractor.

## 7. Invoice

- 7.1 The Contractor shall submit its Invoice in accordance with the rates/charges specified in **Annexure-D** of Bidding document.
- 7.2 The Contractor shall be solely responsible for all payments, liabilities and all other obligations of whatsoever nature pertaining to its staff/workers who shall be deputed for the Services at the Client's Building.

## 8. Indemnification

The Contractor shall indemnify and hold harmless the Client, its Employees and other Personnel against any and all claims, damages, liabilities, losses, and expenses, whether direct or indirect, or personal injury or death to persons or damage to property arising out of (i) any negligence or intentional act or omission by the Contractor or his employees, personal , agents, etc. in connection with the Agreement, or (ii) arising out of or in connection with the performance of his obligations under this Agreement.

The Contractor and its staff /employees shall be bound to obey safety rules and other regulations prescribed by the Client on its premises. Any losses/damages suffered by the Client due to omission on the part of the Contractor, its staff/employees to abide by this condition shall be the sole liability of the Contractor and it may result in termination of the Agreement by the Client at its sole discretion.

## **9. Resolution of Disputes**

9.1 All disputes arising under this Agreement, whether during the term of this Agreement or after the termination or expiry of this Agreement shall be referred to (i) Purchase Committee-I (PC-I) of the Client for amicable settlement /resolution of the dispute at first stage. (ii) In case of failure in settlement, at the second stage the case will be referred to the Authority of the Client through Director (Administration). The decision of the Authority to settle the issue amicably will be final and binding on both parties (iii) In the event of failure of amicable settlement of dispute as above, either party may refer the dispute to Arbitration under the provision of Arbitration Act, 1940 and the rules issued thereunder, at Islamabad, Pakistan.

## **10. Force Majeure Event**

10.1 . Neither Party shall be held responsible for any loss or damage or failure to perform all or any of its obligations hereunder resulting from a Force Majeure event.

10.2 For the purpose of this Agreement a “Force Majeure Event” shall mean any cause(s) which render(s) a Party wholly or partly unable to perform its obligations under this Agreement and which are neither reasonably within the control of such Party nor the result of the fault or negligence of such Party, and which occur despite all reasonable attempts to avoid, mitigate or remedy, and shall include acts of God, war, riots, civil insurrections, cyclones, hurricanes, floods, fires, explosions, earthquakes, lightning, storms, chemical contamination, epidemics or plagues, acts or campaigns of terrorism or sabotage, blockades or acts of Governmental Authority after the date of this Agreement.

10.3 The Party initially affected by a Force Majeure shall promptly but not later than seven (07) days following the Force Majeure event notify the other of the estimated extent and duration of its inability to perform or delay in performing its obligations (“**Force Majeure Notification**”). Failure to notify within the afore-said period shall disentitle the Party suffering the Force Majeure from being excused for non-performance for the period for which the delay in notification persists.

10.4 Upon cessation of the effects of the Force Majeure the Party initially affected by a Force Majeure shall promptly notify the other of such cessation.

## **11. Governing Law**

The provisions of this Agreement and the rights and obligations hereunder shall be governed by and construed in accordance with the prevailing laws of Pakistan.

## **12. Waiver**

A party's failure to exercise or delay in exercising any right, power or privilege under this Agreement shall not operate as a waiver; nor shall any single or partial exercise of any right, power or privilege preclude any other or further exercise thereof.

### **13. Severability**

The invalidity or unenforceability of any provisions of this Agreement shall not affect the validity or enforceability of any other provision of this Agreement, which shall remain in full force and effect.

### **14. Amendment**

All addition amendments and variations to this agreement shall be binding only if in writing and signed by the Parties or their duly authorized representatives.

### **15. WARRANTY/ SUPPORT**

- a. Contractor will be responsible for the provision of free at least 3 Year onsite warranty / support (24x7) with labor for all items including Security Operation Center.
- b. Configuration, installation and maintenance for three years will be the responsibility of the successful bidder.
- c. Managed Security Services and Support from principle manufacturers are required for (1) year, starting from Final Acceptance Certificate (FAC). The warranty period will be considered from the date of issuance of FAC.

### **16. ARBITRATION**

In case of any dispute or conflict between bidder and client (PTA) the case will be referred to the Grievances Committee of PTA. If the decision of committee is not acceptable by the contractor, the case shall be referred to Authority, whose decision will be final.

### **17. INTEGRITY PACT**

INTEGRITY PACT DECLARATION OF FEES, COMMISSION AND BROKERAGE ETC.  
PAYABLE BY THE CONTRACTORS OF GOODS, SERVICES & WORKS IN CONTRACTS  
WORTH RS.10.00 MILLION OR MORE

Contract Number: \_\_\_\_\_

Dated: \_\_\_\_\_

Contract Value: \_\_\_\_\_

Contract Title: \_\_\_\_\_

[Name of Contractor] hereby declares that it has not obtained or induced the procurement of any contract, right, interest, privilege or other obligation or benefit from Government of Pakistan or any administrative subdivision or agency thereof or any other entity owned or controlled by it (GoP) through any corrupt business practice.

Without limiting the generality of the foregoing [Name of Contractor] represents and warrants that it has fully declared the brokerage, commission, fee etc. paid or payable to anyone and not given or agreed to give and shall not give or agree to give to anyone within or outside Pakistan either directly or indirectly through any natural or juridical person, including its affiliate, agent,

associate, broker, consultant, director, promoter, shareholder, sponsor or subsidiary, any commission, gratification, bribe, finder's fee or kickback, whether described as consultations fee or otherwise, with the object of obtaining or inducing the procurement of a contract, right, interest, privilege or other obligation or benefit in whatsoever form from GoP, except that which has been expressly declared pursuant hereto.

[Name of Contractor] certifies that it has made and will make full disclosure of all agreements and arrangements with all persons in respect of or related to the transaction with GoP and has not taken any action or will not take any action to circumvent the above declaration, representative or warranty.

[Name of Contractor] accepts full responsibility and strict liability for making and false declaration, not making full disclosure, misrepresenting fact or taking any action likely to defeat the purpose of this declaration, representation and warranty. It agrees that any contract, right interest, privilege or other obligation or benefit obtained or procured as aforesaid shall, without prejudice to any other right and remedies available to GoP under any law, contract or other instrument, be voidable at the option of GoP.

Notwithstanding any rights and remedies exercised by GoP in this regard, [Name of Contractor] agrees to indemnify GoP for any loss or damage incurred by it on account of its corrupt business practices and further pay compensation to GoP an amount equivalent to ten times the sum of any commission, gratification, bribe, finder's fee or kickback given by [Name of Contractor] as aforesaid for the purpose of obtaining or inducing the procurement of any contract, right, interest, privilege or other obligation or benefit in whatsoever form from GoP.

\_\_\_\_\_  
[ Buyer ]

\_\_\_\_\_  
[Contractor]

## 18. Assignment

This Agreement may not be assigned by either party to other than by mutual agreement between the Parties in writing.

IN WITNESS WHEREOF, the parties hereto set their hands the day, month and year first above written.

For and Behalf of Client.

For and on Behalf of: Contractor

By: \_\_\_\_\_  
Name: \_\_\_\_\_  
Title : \_\_\_\_\_  
Signature: \_\_\_\_\_  
Date : \_\_\_\_\_

By: \_\_\_\_\_  
Title: \_\_\_\_\_  
Name: \_\_\_\_\_  
Signature: \_\_\_\_\_  
Date : \_\_\_\_\_

Witnesses

1. \_\_\_\_\_  
Name: \_\_\_\_\_  
CNIC: \_\_\_\_\_

2. \_\_\_\_\_  
Name: \_\_\_\_\_  
CNIC: \_\_\_\_\_

**NON-DISCLOSURE AGREEMENT**

THIS NON-DISCLOSURE AGREEMENT ("NDA") is made and entered into at **Islamabad, Pakistan** on the \_\_ day of -----2020

**BY AND BETWEEN**

Pakistan Telecommunication Authority, a statutory regulatory authority established under Pakistan Telecommunication (Re-Organization) Act, 1996, having its Head Quarter at F-5/1, Islamabad through Director Type Approval (hereinafter called as the "**CLIENT**" which expression shall where the context admits, include successors-in-interest and assigns) of the One Part:

**AND**

(insert name of Client) a Client incorporated under the laws of ..... having its registered office at----- through its authorized representative Mr..... (herein after called as "**Contractor**") which expression shall where the context so allows include his/its successors-in-interest, executors, administrators, heirs and permitted assigns) of the **Other Part**;

(The Party of the One Part and Party of the Other Part shall hereinafter be collectively referred to as 'Parties' and individually as 'Party' as the context of this NDA requires).

**WHEREAS,**

1. The parties have entered into Agreement dated ....., (the "Agreement") whereby, the Client may have to disclose certain nonpublic and proprietary information in result of execution and subsequent operation of the Agreement to the Contractor, which may fairly be considered to be of confidential nature including, but not limited to, methods, practices and procedures with which the Parties conduct their respective businesses, Internal working, decisions or Standard operating Procedures (SOPs) which are not Public documents, strategies in dealing with the Operators, Licensees, licensee lists, contract terms, methods of operation, software specifications, software codes, functionality, know how, and financial information etc. the Know-How, information pertaining to its principles, pricing policy, commercial relationship, negotiations or parties' projects, affairs, finances or any information in respect of which the parties are bound by an obligation of confidentiality to any third party.
2. The Parties are desirous to set the terms and conditions hereunder and sign this NDA.

**NOW, THEREFORE THIS AGREEMENT WITNESSETH,** for good and valuable consideration, it is hereby agreed between the parties as under;

1. Under this Agreement the Contractor is under an obligation to keep all such information that is disclosed in the course of the contract and after completion of the term with PTA, confidential and not to use it to the detriment of the Authority. In particular, the Contractor shall not use it for, or disclose it to, any of its new employer or client.
2. Any unauthorized disclosure or use of the Authority's confidential information could lead to litigation against the Contractor and any new employer.
3. **Definition of Confidentiality.** In addition to the definition used in the Agreement, "Confidential Information" refers to any information which has commercial value and is either (i) technical information, including patent, copyright, trade secret and other proprietary information, techniques, sketches, drawings, models, inventions, know-how, processes, apparatus, equipment, algorithms, software programs, software source documents, and formulae related to the current, future and proposed products and functions of the Client, or (ii) non-technical information relating to Client's functions, responsibilities, operations including, without limitation, plans and strategies, finances, financial and accounting data and information, suppliers, stakeholders, purchasing data, strategical plans and any other information which is proprietary and confidential to Client.
4. **Nondisclosure and Non-use Obligations.** Subject to confidentiality clause under the Agreement, the Contractor will maintain in confidence and will not disclose, disseminate or use any Confidential Information belonging to Client, whether or not in written form. Contractor agrees that Contractor shall treat all Confidential Information of Client with at least the same degree of care as Contractor accords its own Confidential Information. Contractor further represents that Contractor exercises at least reasonable care to protect its own Confidential Information. the Contractor agrees that Contractor shall disclose Confidential Information only to those of its employees who need to know such information and certifies that such employees have previously signed a copy of this Agreement.
5. **Survival.** This Agreement shall govern all communications between the Parties. Contractor understands that its obligations under Paragraph 4 ("Nondisclosure and Non-use Obligations") shall survive for two years after the termination or expiry of the Agreement. Upon termination of any relationship between the Parties, Contractor will promptly deliver to Client, without retaining any copies, all documents and other materials furnished to Contractor by Client.
6. **Governing Law.** This NDA shall be governed in all respects in accordance with the laws of Pakistan.
7. The Contractor agrees and undertakes that upon termination of the Agreement by the Client.
  - a. shall return to Client all documents and property of Client, even if not marked "confidential" or "proprietary," including but not necessarily limited to drawings, reports, manuals, correspondence, customer lists, computer programs, and all other materials and all copies thereof relating in any way to Client, or in any way obtained by the Contractor during the course of the Agreement and shall not retain copies, notes or abstracts of the foregoing.
  - b. The Client y may notify any future or prospective employer or third party of the existence of this Agreement.
  - c. **Injunctive Relief.** A breach of any of the promises or agreements contained herein will result in irreparable and continuing damage to Client for which there will be no adequate



remedy at law, and Client shall be entitled to injunctive relief and/or a decree for specific performance and such other relief as may be proper (including monetary damages if appropriate).

IN WITNESS WHEREOF, the Parties have executed this Agreement as of the dates written below.

| For and on Behalf of Client | For and on behalf of Contractor |
|-----------------------------|---------------------------------|
| Signed by_____              | Signed by_____                  |
| Seal-----                   | Seal_____                       |
| Witness_____                | Witness_____                    |

## **SEPARATE HARDWARE REQUIRMENT**



*Government of Pakistan*  
**PAKISTAN TELECOMMUNICATION AUTHORITY**  
HEADQUARTERS F-5/1, ISLAMABAD.  
[http:// www.pta.gov.pk](http://www.pta.gov.pk)

**BIDDING DOCUMENTS**

|    |  |
|----|--|
| A. | <p style="text-align: center;"><b>Hardware requirement, Distribution/ Aggregation Switches</b></p> <p><b>2 X 48 ports Distribution Switches with 48 X 1G/10G/25G SFP 28 ports for Servers Connectivity and minimum 6 X 10Gb/25GB/40GB/50GB/100GB QSFP28 ports for Switch to Switch connectivity with Advance operating system supporting advance routing features.</b></p> <ul style="list-style-type: none"><li>(1) 38 x Dual rate 10G/25G transceiver module.</li><li>(2) 4 X QSFP+ Transceivers</li><li>(3) 4 X QSFP28 (100GB) Active optical cable 20m</li><li>(4) 20 X Optical cables for Server to Switch connectivity (10 Meter) (LC-LC)</li><li>(5) 10 X 25G (Dual port) Server Fiber Cards for Dell R730 servers</li><li>(6) Warranty, Support and Software updates for the period of three (03) years.</li></ul> |
|----|--|

**Scope of Work**

Pakistan Telecommunication Authority (PTA), (hereinafter referred to as “the Client”) invites / requests for proposals (RFP)/bids (hereinafter referred to as “the Tender”) from firms or companies for the award of contract for the procurement, configuration, deployment and maintenance of distributed Switches, with three (03) years of after sale support, software updates (24X7), perpetual Software licenses and with three Warranty both from principle and participating vendor.

The Hardware will be delivered and deployed at PTA HQ, Islamabad.

The bidder shall bear all costs / expenses associated with the preparation and submission of the Tender(s) and the Client shall in no case be responsible / liable for those costs / expenses.

Detailed specifications of above-mentioned items are provided at Annex-C of this document. Notice of the bids issued on PTA’s/PPRA’s websites is an integral part of the bidding document.

**Clarification of the Tender Document**

The bidders can seek further information or clarification regarding the Tender Document, within 07 (Seven) calendar days of issuance/publication of tender. The clarification and its replies will be shared with all prospective bidders on PTA Website and will also be communicated at the pre-bid meeting.

Bidders should note that during the period from the receipt of the bid and until further notice from the Primary Contact given herein this document, all queries should be communicated via the Primary Contact and in writing (e.g. e-mail & letter) only.

Primary Contact

Director (ICT)

+92-51-9214123

+92-51-2878134

[salmanzafar@pta.gov.pk](mailto:salmanzafar@pta.gov.pk)

[anwar@pta.gov.pk](mailto:anwar@pta.gov.pk)

## **Terms and Conditions**

### **1. GENERAL INFORMATION:**

- a. Bidding documents, duly completed in all respects, will be received on or before **20th July 2020** up to **1030 AM**.
- b. Technical bids will be opened by Technical Evaluation Committee, at PTA HQs on the same day at 1100 AM, in presence of bidder's representative, who may choose to attend.
- c. Bids should be sent at the address of Director (ICT) Pakistan Telecommunication Authority (PTA), Headquarters F-5/1, Islamabad.
- d. A bidder will be selected after an open, competitive and transparent bidding process in accordance with Public Procurement Regulatory Authority (PPRA) Ordinance, 2002, and Rules, Regulations and Guidelines made thereunder.
- e. Save as otherwise provided, a Single Stage, Two Envelopes procedure as per Rule 36 (b) read with Rule 37 (a) of the Public Procurement Rules, 2004, as amended in 2006 (the "Rules") shall be opted.
- f. Bid will comprise of single package containing two separate sealed envelopes. Each envelope shall contain separately the "Financial Proposal" and the "Technical Proposal"
- g. The envelopes shall be marked as "FINANCIAL PROPOSAL" and "TECHNICAL PROPOSAL" in bold and legible letters to avoid confusion.
- h. Initially, only the envelope marked "TECHNICAL PROPOSAL" shall be opened;
- i. The envelope marked as "FINANCIAL PROPOSAL" shall be retained in the custody of PTA without being opened.
- j. The technical proposals shall be evaluated as per clause 3 of this document without reference to the price and reject any proposal which does not conform to the specified requirements.
- k. The financial proposals of bidders found technically nonresponsive shall be returned un-opened to the respective bidders;
- l. After the evaluation and approval of the technical proposals, the financial proposals of the technically accepted bids / technically qualified bidders will be opened at a time, date and venue announced and communicated to bidders in advance.
- m. Bidder shall quote only single option, bids with multiple options will be rejected without any right of appeal.
- n. Bidder must be registered with FBR for Income and Sales tax and will provide NTN and Sales Tax registration certificates, as per the applicable government regulation, in the proposal.

- o. The Bidders name must be on Active Taxpayers List (ATL) of FBR for Income tax and sales tax as on the date of bid submission and onward throughout the period of contract in compliance of the Eligible Bidders (Tax Compliance) Regulations, 2015.
- p. The Bidder shall provide an undertaking on Rs. 100/- stamp paper that the Bidder itself or its principle manufacturer have not been declared black listed by any Government/Semi-Government institutions.
- q. **PTA** shall not entertain incomplete or partial bids.
- r. Proposals shall be submitted in English language as per Rule 6 of the Rules
- s. All prices mentioned in the Financial Proposal shall be in Pak Rupees (PKR).
- t. Each page of the Technical and Financial Proposal shall be signed by an authorized representative of the Bidder. The representative's authorization shall be confirmed by power of attorney accompanying the proposal.
- u. The interested Bidder must get registered with PTA before the proposal submission date.
- v. For clarification on any item of this document, the bidder may send a written request, up till seven (07) days before the proposal submission date and all clarifications will be communicated to the registered Bidders through e-mail
- w. PTA may reject all bids or proposals at any time prior to the acceptance of a bid or proposal. PTA 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 as per Rule 33 of the Rules.
- x. Annex-A, Annex-B, Annex-C, Annex-D, Annex-E and Annex-F are integral part of technical and financial proposals, which may be read/filled carefully, signed and stamped by the bidders. Further, details of the annexures are mentioned below:
  - i. Annex-A consists of mandatory requirements for bidder(s)
  - ii. Annex-B consists of technical capabilities of bidder(s), which has total 100 marks, whereas minimum qualifying marks are 70%
  - iii. Annex-C consists of technical evaluation of the product and bidder(s) may quote higher specs, however, quoting lower specs shall disqualify the bidder
  - iv. Annex-D, comprises of financial bid format, to be followed by all bidders, the bidder should quote its rates clearly, in the financial proposal in both figures and words without any ambiguity.
  - v. The bidder must be current dealers/Contractors/distributors/partners of the principal manufacturer.
  - vi. License renewals including SLA/Support, Warranty and Software updates of Switch may be renewed on same terms and conditions as mentioned in the tender document for next three years (After the expiry of three years' warranty, support/SLA etc.).

Commented [--1]: Please confirm, if it is acceptable.

- vii. Draft agreement (Annex-E), Integrity Pact (Annex-F) and Non-Disclosure Agreement (NDA) (Annex-G) is also part of the Bid documents.

2. **BIDDER's INFORMATION**

Bidders shall submit of following documents / information with relevant authorities;

|   |   |
|---|---|
| In case of Company                            | 1. Incorporation certificate from Securities and Exchange Commission of Pakistan (SECP).<br>2. Valid NTN and STN Certificates |
| Address<br>_____<br>_____                     |   |
| Telephone No                                  |   |
| Fax No  |   |
| Primary contact person<br>Name, phone, email: |   |

3. **EVALUATION CRITERIA**

- a. The bidder should quote its rates clearly in the Financial Proposal in both figures and words.
- b. Technical bids shall be opened and evaluated by technical evaluation committee in view of Annex-A, Annex- B and Annex-C. Bidder, obtaining at least 70%, shall be eligible for the participation in financial bid opening.
- c. Financial bids of technically qualified bidders (bidders compliant of Annex-A, Annex-B and Annex-C) shall be opened and evaluated by procurement committee of PTA i.e. PC-I.
- d. Work will be awarded to **financially lowest evaluated bidder**. If two or more bidders quote equal lowest price in financial proposals, then the work will be awarded to the one having higher technical marks, in technical evaluation.
- e. In the event that there is more than one qualified bidder i.e. they have equal number in technical bids and quoted equal prices in financial bid, the tied qualified bidders shall be notified by PTA and they will submit revised financial proposals in compliance with the RFP. The revised bid amount must be either equal to the original submitted bid or smaller than previous bid amount. The revised financial proposal shall be submitted in a sealed envelope that is securely closed and it is not possible to be opened without visual evidence thereof.

- f. Definition of the terms set forth below for the purposes of this Request for Proposal (RFP), shall be as follows:
- I. "corrupt practice" is the offering, giving, receiving or soliciting, directly or indirectly, of anything of value to influence improperly the actions of another party;
  - II. "fraudulent practice" is any act or omission, including a misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain a financial or other benefit or to avoid an obligation;
  - III. "collusive practice" is an arrangement between two or more parties designed to achieve an improper purpose, including to influence improperly the actions of another party;
  - IV. "coercive practice" is impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party;
  - V. "obstructive practice" is deliberately destroying, falsifying, altering or concealing of evidence material to the investigation or making false statements to investigators in order to materially impede PTA investigation into allegations of a corrupt, fraudulent, coercive or collusive practice; and/or threatening, harassing or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation.

**4. Bid Security**

- a. Bid security equal to 2% of the bid amount in the shape of pay order / demand draft in favor of Pakistan Telecommunication Authority, Headquarters, Sector F-5/1, Islamabad must be attached in a **separate envelope**, with the technical proposal otherwise the unopened proposals shall be returned and bid will be rejected without any right of appeal... .
- b. Bid security will be forfeited if successful lowest bidder refuse to sign contract and to deliver the Hardware with in stipulated time frame.
- c. Bid security of successful bidder will be adjusted against the 10% of retention money till warranty period. However, bid security of unsuccessful bidders will be returned after award of contract to successful bidder.
- d. In case of cancelation of Supply Order due to default of the Contractor, the Bid security shall be forfeited in favor of PTA.
- e. **Retention money** equal to 10% of total contract value will be submitted by the successful Bidder at the time of signing the contract, which is mandatory. Retention money will be kept for a period of warranty and support period and will only be released after completion of warranty period and on issuance of performance acceptance certificate by two ICT officers one of which should be the responsible IT Officer and the other should be officer in charge.



- f. Retention Money will be forfeited in favor of PTA if the above-mentioned officers showed dissatisfaction with hardware/software/warranty/ or reported any support issue related to the Switches.
- g. Retention money shall be submitted in shape of pay order / demand draft in favor of Pakistan Telecommunication Authority, Headquarters, Sector F-5/1, Islamabad.

**5. PRICES**

- a. **The bidder should quote its rates clearly in Pak Rupees in the Financial Proposal in both figures and words as per format attached at Annex-D.**
- b. The rates quoted shall remain valid for 90 days from the date of bid opening.
- c. No currency exchange rate will be applicable and bids with a condition of currency exchange rate applicability will be rejected without any right of appeal.
- d. Bid(s) shall be inclusive of all applicable taxes i.e. GST etc.
- e. PTA will bear no transportation/carriage charges.

**6. PAYMENT PROCEDURE**

- a. No advance payment shall be made against the supply of software and Hardware mentioned in this bidding document.
- b. Payment is subject to successful installation, configuration, testing and commissioning of the DS Switches and payment shall be made on provision of invoice/bill, after delivery of the equipment /software at PTA Headquarters and issuance of satisfactory performance certificate by ICT directorate and physical inspection verification certificate issued by PC-I.
- c. Payment shall be subject to withholding of applicable taxes as per government rules.
- d. Payment will be linked with active taxpayer status of the bidder and no payment will be made until the bidder appears on ATL (Active Taxpayer List) of FBR (Federal Board of Revenue).
- e. Payment will be released after verification of Hardware its warranty details from the principle manufacturer via official website, email or letter etc., if deemed necessary.

**7. HARDWARE/SOFTWARE**

- a. The supply of hardware should be arranged through legal channels by clearing all duties/taxes (if any) levied by the Govt.

**8. DELIVERY/COMPLETION PERIOD**

- a. All components of the hardware/equipment shall be delivered within (10) weeks' time after issuance of work order.
- b. Configuration, installation and implementation will be the responsibility of the vendor, however technical engineers from ICT directorate will be available to make the process rational.
- c. Completion time of the projects shall be four (04) weeks after delivery at H/Qs F-5/1, Islamabad with provision of support mentioned in **section 10**.

**9. DEALER/CONTRACTOR/PARTNER**

- a. Bidder shall be a dealer/Contractor/distributor/partner of their respective Switch Hardware manufacturer.
- b. Both Principal Manufacturer and Vendor are equally responsible for the successful execution of the project and design shall be validated by principal manufacturer.

**10. PENALTY**

- a) If the bidder fails to deliver within due time mentioned in the work order, then a penalty of 01% per week of the total value of work Order will be charged up to a maximum of Eight (08) weeks (Days less than six will be considered as one week). Thereafter, supply order will stand cancelled and Bid security will be forfeited.
- b) If the Contractor fails to install/configure provided hardware/software within due time mentioned in clause 8 (b,C) of the is document, then a penalty of 01% per week of the bid amount will be charged up to a maximum of four (04) weeks (Days less than six will be considered as one week). Thereafter, retention money will be forfeited in favor of PTA, supply will be rejected, and the project will be closed.
- c) If the Contractor fails to provide warranty / support as per certificate provided as per Annex-B (clause 3) of the bidding document, then a penalty of 01% per day of the retention money will be charged.
- d) In case of non-satisfactory performance by the Contractor during the warranty period, PTA reserve the right to forfeit the retention money in favor of PTA.

**11. 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. Financial bid is submitted without the required Bid security.
- b. Offers are received after specified date and time.

- c. Specification and other requirements are not properly adhered to or different from those given in the bidding documents.
- d. GST and NTN certificates are not attached and bidder is not is Active payer List of FBR.
- e. Service centre of the quoted brand is not in Islamabad/Rawalpindi.
- f. Bidder do not have “Valid” certificate from manufacturer.
- g. Bidder quoted multiple options, referring **section 1 (d)**.
- h. Affidavit on **Judicial Paper** to the effect that the company/ firm has not been black listed by any government/semi government/autonomous body or company isn’t submitted with technical proposal.
- i. Warranty/Replacement certificate both on Judicial Paper and vendor letter head for three years.

**12. RIGHTS RESERVED**

Pakistan Telecommunication Authority Islamabad reserves the rights to cancel the bid, accept or reject any bid as per PPRA rules.

**CHECKLIST**

- |   |          |
|---|----------|
| a. Bid security in shape of bank draft/pay order.<br>(cheques are not acceptable) | (Yes/No) |
| b. Relevant documents are attached as per Annexures                               | (Yes/No) |
| c. List of such projects handled with copies of supply order.                     | (Yes/No) |
| d. Affidavit on judicial paper for not been black listed.                         | (Yes/No) |
| e. Specification and other requirements are met.                                  | (Yes/No) |
| f. Service Centre of the quoted brand is in Islamabad/Rawalpindi                  | (Yes/No) |

Muhammad Salman Zafar  
Director (ICT)

## General Evaluation Criteria

### Annex-A

| Part A) Mandatory Requirements * |  |
|----------------------------------|--|
| 1                                | Firm has to produce Sales Tax and Income Tax Registration. |

|    |  |
|----|--|
| 2  | Minimum Five years of relevant experience.   |
| 3  | Sales and Service Center of the vendor must be in Islamabad / Rawalpindi.  |
| 4  | Vendor status should be "Active" in Tax Payers List  |
| 5  | Affidavit on Judicial Paper to the effect that the firm has not been black listed by any government/semi government/autonomous body or company |
| 6. | Non-quoting International Branded items for any of the above hardware item will lead to disqualification.                                      |
| 7. | Firm has to produce valid Authorization Letter and partner Certificate of the principal/manufacture for Pakistan                               |
| 8. | Minimum three supply orders for Distribution Switches.   |

**Bidders not fulfilling the above mentioned Mandatory requirements will stand disqualified**

**Technical Capabilities of Bidder- Part-B****Annex-B**

| Part B) General Evaluation*   |  |            |               |   |
|---|--|------------|---------------|---|
| Sr. #   | Attributes   | Max. Score | Points Earned | Criteria  |
| 1   | Detail of Offices  | 10         |               | Firm has sales and services offices at four (4) provincial headquarters. Two and half (2.5) points for each p.h.q.  |
| 2   | Spare Parts Availability   | 10         |               | Firm has Spare Parts of the quoted model Depot/facility at Islamabad / Rawalpindi.  |
| 3   | Replacement time for faulty parts under warranty equipment/parts<br>(Certificate has to be produced)<br>(Clause 11(c) referred)                                    | 15         | 15            | 15 marks for Next Business Day (NBD), otherwise no marks  |
| 4   | Total strength of relevant Technical Staff at <b>Rawalpindi / Islamabad</b> (List shall be attached with name, designation, qualification and related experience). | 20         | 20            | Firm has ten (10) or more relevant technical staff in Islamabad / Rawalpindi.   |
|   |  |            | 15            | Firm has more than seven (7) or more up to nine (9) relevant technical staff in Islamabad / Rawalpindi  |
|   |  |            | 5             | Firm has five (5) or more up to six (6) relevant technical staff in Islamabad / Rawalpindi  |
| 5   | Firm Experience (minimum Five years' experience required)  | 20         |               | (4) points will be given for each year of experience, beyond 5 years of mandatory requirement.  |
| 6   | Projects completed of similar nature (documentary proof be provided i.e. Supply Orders etc.)   | 25         |               | Five points will be awarded for each project of same nature on provision of supply order/certificate<br>i. Supply of (2) or above DS Switches in Single Supply Order. Max Five Supply orders, Minimum (3) |
| Sub Total   |  | 100        |               |   |
| Minimum qualifying marks are 70% in above table whereas Annex "C" shall be compulsory. All supporting Documents to be attached for all relevant pages of Annex-B. |  |            |               |   |

**TECHNICAL EVALUATION-PART-C****Annex-C**

(To be included in Technical Proposal-Mandatory Requirements)

Page.1/3

| Detailed Specifications of Distribution/Aggregation Switches Qty =2 |  |            |
|---|--|------------|
|   | Mandatory System Performance and scaling requirements:                                       | Compliance |
| S.No  | General requirements   |            |
| 1   | The switch must be equipped with 48 x Multigigabit Optical ports supporting 1G/10G/25G speed |            |
| 2   | Min of 6 x QSFP28 40Gb/100Gb uplink ports  |            |
| 3   | Switch Must support dual rate 10G./25G SFP module  |            |
| 3   | The switch must be equipped with out-of-band 10/100/1000BASE-T Ethernet port for management. |            |

|                    |  |  |
|--------------------|--|--|
| 4                  | The Switch must have redundant AC power supplies   |  |
| 5                  | The switches must have Fans in N + 1 redundancy  |  |
| 6                  | The switch must have 8 GB system memory and 4 GB Flash or Higher   |  |
| 7                  | The switch should support min of 30MB buffer size  |  |
| 8                  | The switch should work using a modular operating system with the ability to restart an individual process without a full reset switch. |  |
| 9                  | Switch must support L2 multipathing and must not have any STP limitation   |  |
| 10                 | Must be 1 RU Chassis   |  |
| <b>Performance</b> |  |  |
| 1                  | Throughput / Bandwidth Min of 3Tbps  |  |
| 2                  | The switch Max Forwarding Rate must be not less than 2.5Bpps   |  |
| 3                  | The switch should have non-blocking architecture. All ports must operate on highest possible speed simultaneously                      |  |
| 4                  | The maximum number of stored MAC addresses in the switching table the switch shall be not less than 256K                               |  |
| 5                  | Minimum of IP v4 unicast routes 128K & 160K host routes  |  |
| 6                  | Min multicast routes 32K   |  |
| 7                  | Must support IPv6 unicast routes 20K   |  |
| 9                  | ARP entries 48K  |  |
| 10                 | Should support VXLAN   |  |
| 11                 | VTEP 200 or higher   |  |
| 12                 | Proposed Switches must support SDN Feature set and should be able to managed and provisioned by SDN Controller (Support only)          |  |
| 13                 | Proposed switches must support Spine & Leaf Network Architecture   |  |
| 14                 | Must support 1GE SFP<br>Must support 10GE SFP+<br>Must support 25GE SFP  |  |
| 16                 | Traffic mirroring must be supported Port-based, VLAN-based, on LAG port  |  |
| 17                 | Proposed Switches must be a wire-speed Layer 2/3   |  |

| <b>Mandatory Protocol Requirement</b> |  |  |
|---------------------------------------|--|--|
| 1                                     | 802.1D – Spanning Tree Protocol (STP)<br>802.1w – Rapid Spanning Tree Protocol (RSTP)<br>802.1s – Multiple Spanning Tree Protocol (MSTP)<br>Per VLAN Spanning Tree Protocol (PVSTP)<br>802.1AB Link Layer Discovery Protocol (LLDP)<br>VLAN Registration Protocol<br>802.3ad – Link Aggregation Control Protocol (LACP)<br>Multi-chassis Link Aggregation (MC-LAG) |  |
| 2                                     | Static Routing, RIP v1/v2 , OSPF v1/v2/v3<br>Policy Based Routing, Virtual Router Redundancy Protocol (VRRP)   |  |

|                          |  |  |
|--------------------------|--|--|
| 3                        | Bidirectional Forwarding Detection (BFD)<br>Virtual Routing and Forwarding<br>Unicast Reverse Path Forwarding (uRPF)   |  |
| 4                        | BGP, DHCP v4/v6 Relay<br>VRF-Aware DHCP<br>Internet Group Management Protocol (IGMP) v1/v2/v3<br>Multicast Listener Discovery (MLD) v1/v2<br>IGMP Snooping<br>Quality of Service (QoS) – |  |
| <b>Ethernet L2</b>       |  |  |
| 1                        | The switch must be able to support the IEEE family protocols: 802.3: 802.3, 802.3ae, 802.3ab, 802.3z.  |  |
| 2                        | The switch must support 802.1ad (Q-in-Q) and Selective Q-in-Q protocols  |  |
| 3                        | The switch must support High Availability Network Protocols  |  |
| 4                        | The switch must support data center switching features   |  |
| 5                        | The switch must support 802.1w, 802.1s, PVST+ protocols  |  |
| 6                        | The switch must support LAG and MLAG   |  |
| <b>Routing IPv4/IPv6</b> |  |  |
| 1                        | The switch must be able to support following IPv4 routing protocols: BGP4, OSPF, RIP v1/v2, PIM, MSDP  |  |
| 2                        | The switch must support Policy-based Routing   |  |
| 3                        | The switch must be able support BFD for static routing and dynamic routing protocols OSPFv2/OSPFv3, BGP  |  |
| <b>L2/L3 Multicast</b>   |  |  |
| 1                        | The switch must support IGMPv1 / v2 / v3 protocols;  |  |
| 2                        | The switch must support protocols: IGMPv1 / v2 / v3 snooping (IGMPv1 / v2 / v3 snooping);  |  |
| 3                        | The switch must support the protocol PIM Snooping;   |  |

|                                   |   |  |
|-----------------------------------|---|--|
| <b>User authorization and QoS</b> |   |  |
| 1                                 | Each interface for connecting user devices must support at least 8-x hardware queues.   |  |
| 2                                 | Access control lists that are configured on the switch port must operate at line speed available on port.   |  |
| 3                                 | The switch must support the IEEE 802.1x protocol.   |  |
| 4                                 | The switch should provide dynamic assignment of user access policies L2-L4 on ports   |  |
| 5                                 | Supports IP security framework which protects the network infrastructure, network services such as DHCP and DNS and host computers from spoofing and man-in-the middle attacks. |  |
| <b>Data Center</b>                |   |  |
| 1                                 | The switch must support VxLAN Tunneling End Point (VTEP)  |  |
| 2                                 | The switch must support Data Center Bridging protocols,   |  |
| 3                                 | The switch must support Flow Control  |  |
| <b>Management</b>                 |   |  |

|   |  |  |
|---|--|--|
| 1 | The switch must support standard SNMP versions 2c and 3, Syslog.   |  |
| 2 | Industry leading integrations for leading devops configuration management applications – Ansible, Chef, Puppet, SALT. Extensive Native YANG and industry standard Openconfig model support through RESTCONF/NETCONF.   |  |
| 3 | The switch must support the XML language for a simple embedding procedure for the management switch into external systems  |  |
| 4 | The switch must support the change of configuration parameters upon the occurrence of events such as authentication devices, authenticating users, the occurrence certain time, the establishment and breakage of connection on a port and all other events, |  |
|   | Brand should exist in magic quadrant Leader for datacenter networking in Gartner report July 2019  |  |

**Any inferior Specifications will be rejected**

Multiple options are not allowed; vendor should quote only one option. Quoting multiple option will lead to disqualification.



**Annex-D**

**Financial Proposal (Bid Format)**

**Distribution Switches (with 3 years' hardware warranty, Software updates and SLA/Support 24X7)**

Date \_\_\_\_\_

Company Name \_\_\_\_\_

| Sr.no | Required Specification  | Quoted Specification (With Brand Name) | Unit Price Inclusive of Applicable Taxes | Qty   | Total Price Inclusive of Applicable Taxes |
|-------|---|--|--|-------|---|
| 1     | 2 X 48 ports Distribution Switches with 48 X 1G/10G/25G SFP 28 ports for Servers Connectivity and minimum 8 X 10Gb/25GB/40GB/50GB/100GB QSFP28 ports for Switch to Switch connectivity. |  |  | 2     |   |
| 2     | 38 x Dual rate 10G/25G transceiver module.  |  |  | 38    |   |
| 3     | 25G (Dual port) Server Fiber Cards  |  |  | 10    |   |
| 4     | QSFP+ Transceivers  |  |  | 4     |   |
| 5     | QSFP28 (100GB) Active optical cable 20m   |  |  | 4     |   |
| 6     | 25 G Optical cables for Server to Switch connectivity (10 Meter)  |  |  | 20    |   |
| 7     | Warranty, Support and Software updates for the period of three (03) years.  |  |  | 1 job |   |

Amount in words: (Rupees.....)

**Any inferior specifications will be rejected**

**FINANCIAL PROPOSAL not accompanied with Bid security will be rejected without any right of appeal.**

Annex-E

Draft Agreement: Distribution/Aggregation Switches

AGREEMENT

*(To be executed on Rs.100/- Judicial paper)*

THIS Supply & Service Agreement (the "Agreement") is made on this day \_\_\_\_\_ 2020;

By and Between

Pakistan Telecommunication Authority, a statutory body established under Pakistan Telecommunication (Re-organization) Act, 1996, having its principle office at PTA H/Q, F-5/1, Islamabad (hereinafter referred to as "**Client**" which expression shall where the context admits include its administrators and assigns) of the One Part

And

M/s \_\_\_\_\_ through

Mr. ....

bearing CNIC.....

having place of business at..... (hereinafter referred to as "**the Contractor**," which expression shall where the context so allows include his/its successors-in-interest, executors, administrators, heirs and permitted assigns) of the **Other Part**

(If when and where applicable the Party of the One Part and Party of Other Part shall hereinafter be collectively referred to as 'Parties' and individually as 'Party' as the context of this Agreement requires).

WHEREAS;

- A. Client is desirous of procuring & deployment of **Distribution/Aggregation Switches** (hereinafter referred to as "**DS Switch**") for its HQs Building at F-5/1, Islamabad and have them **delivered/supplied and installed and subsequently maintained** by the Contractor in accordance with the terms of this Agreement;
- B. The Contractor is a \_\_\_\_\_ (*details of incorporation*) being engaged in the business of supplying electrical, electronic equipment including but not limited to integrated security technologies, and has agreed to **supply, deliver, install/configure and thereafter provide maintenance services (hereinafter referred as Services)** of the **DS Switch** at Client HQs Building on the terms and subject to the conditions as set forth hereunder.
- C. The Contractor represent that;
  - i. It has the relevant expertise and holds valid and subsisting licenses/permissions, authorizations/approvals required from the Government of Pakistan and;
  - ii It has the requisite expertise and resources to provide top quality of requisite Services of **DS Switch** as per Bill of Quantity ("BoQ") to the Client in accordance with highest industry standards and satisfaction of the Client. The Contractor undertakes that the

Services shall be provided only through the staff/labour/workforce that has the requisite expertise and experience in this regard.

D. Upon the basis of the representations and warranties of the Contractor contained herein, the Client wishes to appoint the Contractor to Supply and provide the Services at HQ Building premises under this Agreement;

**NOW THEREFORE**, for the consideration provided herein the representation and warranties, covenants, conditions and promises contained herein below and intending to be legally bound, the Client and Contractor hereby agree as follows:

### **1. Scope of Agreement**

Subject to the terms and conditions of this Agreement the Contractor agrees to provide Services as per requirements prescribed under **Bidding Documents and its attached Annexure-A, B, C, D**;

### **2. Agreement Documents**

2.1 The following documents shall be deemed to form, and be read and construed as, integral part of this Agreement:

- a) Invitation to bid
- b) Bidding documents along with its Annexures
- c) Bill of Quantity (BoQ)
- d) Special Stipulations (if any).
- e) Addenda and Corrigenda, if any, issue by the Clients and duly accepted by the Contractor at the signing of the Contract.
- f) Bid security/ Tender Guarantee
- g) Form of Agreement/ Contract Agreement
- h) Clients order to commence the work.
- i) Limit of Bid security.
- j) Any Correspondence by the Clients/Contractor mutually accepted by the Client and the Contractor.

### **3. Term**

3.1 Upon signing of this Agreement, the Contractor shall be obligated to start the work on specified location by Client within \_\_\_\_\_and complete it within projected time \_\_\_\_\_calendar days.

3.2 However, in case of any unavoidable/unforeseen delay (i.e Force Majeure) incurred either by the Contractor or the Client, necessary timeline extension would be agreed mutually between both parties, however, it has to be communicated to each other during the occurrence of Force Majeure as per clause 11.

### **4. Termination**

4.1 Notwithstanding anything herein contained the Client shall be exclusively entitled to terminate this Agreement

- a. without advance notice, in case the Contractor is in breach of any of the terms of this Agreement, or in case the Client is not satisfied with the Services.
- b. Without cause, by giving three (03) days advance written notice to the Contractor.
- c. If the Services do not meet the specifications, terms & conditions mentioned in the **Annexure-A, B, C, D of Bidding documents**.

4.2 In case of such termination, the Contractor shall not be paid for any Services actually rendered up to the date of termination and any advance payment by the Client in respect of the Services not performed or in respect of period falling after the effective date of termination shall be refunded by the Contractor, to the Client. The Client, shall not, because of expiration or termination of this Agreement, be liable to the Contractor for any compensation, reimbursement, or damages because of the loss or prospective profit or because of expenditures or commitments incurred in connection with the business of the Contractor.

## **5. Deliverables**

5.1 The work should be of best quality and as per technical specifications mentioned in the Annexure C and D of Bidding documents.

## **6. Charges**

6.1 In consideration of rendition of Services, all amounts paid to the Contractor are inclusive of all taxes, levies, duties, and any other deduction related thereto etc. and are acknowledged by the Contractor to be adequate and sufficient consideration for the rendition of Services.

6.2 All payments to be made by the Client to the Contractor shall be subject to such deductions and withholding as are required by prevailing laws which shall be to the account of the Contractor.

## **7. Invoice**

7.1 The Contractor shall submit its Invoice in accordance with the rates/charges specified in **Annexure-D** of Bidding document.

7.2 The Contractor shall be solely responsible for all payments, liabilities and all other obligations of whatsoever nature pertaining to its staff/workers who shall be deputed for the Services at the Client's Building.

7.3 The Contractor undertakes to fully indemnify and hold harmless the Client against any claims, losses, damages, or expenses in relation to injury or death to any persons or loss or damage to property arising out of the performance of supply and installation Services.

7.4 The Contractor and its staff /employees shall be bound to obey safety rules and other regulations prescribed by the Client on its premises. Any losses/damages suffered by the Client due to omission on the part of the Contractor, its staff/employees to abide by this condition shall be the sole liability of the Contractor and it may result in termination of the Agreement by the Client at its sole discretion.

## **8. Confidentiality**

The Contractor, its/his staff, workers, employees, personnel, agents or any other person acting for him and/or on his behalf shall hold in confidence and complete confidentiality and all documents and other information supplied to the Contractor and his Employees personnel, agents etc. by or behalf of the Client or which otherwise came/come into its/his/their knowledge and relates to the Client or any of its project.

## **9. Indemnification**

The Contractor shall indemnify and hold harmless the Client, its Chairman, Directors, Member Offices, Employees and other Personnel against any and all claims, damages, liabilities, losses, and expenses, whether direct or indirect, or personal injury or death to persons or damage to property arising out of (i) any negligence or intentional act or omission by the Contractor or his employees, personal , agents, etc. in connection with the Agreement, or (ii) arising out of or in connection with the performance of his obligations under this Agreement.

## **10. Resolution of Disputes**

10.1 All disputes arising under this Agreement, whether during the term of this Agreement or after the termination or expiry of this Agreement shall be referred to (i) Purchase Committee-I (PC-I) of the Client for amicable settlement /resolution of the dispute at first stage. (ii) In case of failure in settlement at first stage, the case will be referred to the Authority of the Client at the second stage through Director (Administration). The decision of the Authority to settle the issue amicably will be final and will not be challenged at any forum including court of Law. (iii) In the event of failure of amicable settlement of dispute as above, either party may refer the dispute to Arbitration under the provision of Arbitration Act, 1940 and the rules issued thereunder, at Islamabad, Pakistan.

10.2 No All variations amendments and in or modification to the terms of this Agreement shall be made, except in writing and shall be binding only if duly agreed and signed by both the parties or their duly authorized representatives.

## **11. Force Majeure Event**

11.1. Neither Party shall be held responsible for any loss or damage or failure to perform all or any of its obligations hereunder resulting from a Force Majeure event.

11.2 For the purpose of this Agreement a "Force Majeure Event" shall mean any cause(s) which render(s) a Party wholly or partly unable to perform its obligations under this Agreement and which are neither reasonably within the control of such Party nor the result of the fault or negligence of such Party, and which occur despite all reasonable attempts to avoid, mitigate or remedy, and shall include acts of God, war, riots, civil insurrections, cyclones, hurricanes, floods, fires, explosions, earthquakes, lightning, storms, chemical contamination, epidemics or plagues, acts or campaigns of terrorism or sabotage, blockades or acts of Governmental Authority after the date of this Agreement.

- 11.3 The Party initially affected by a Force Majeure shall promptly but not later than seven (07) days following the Force Majeure event notify the other of the estimated extent and duration of its inability to perform or delay in performing its obligations ("**Force Majeure Notification**"). Failure to notify within the afore-said period shall disentitle the Party suffering the Force Majeure from being excused for non-performance for the period for which the delay in notification persists.
- 11.4 Upon cessation of the effects of the Force Majeure the Party initially affected by a Force Majeure shall promptly notify the other of such cessation.

## **12. Governing Law**

The provisions of this Agreement and the rights and obligations hereunder shall be governed by and construed in accordance with the prevailing laws of Pakistan.

## **13. Waiver**

A party's failure to exercise or delay in exercising any right, power or privilege under this Agreement shall not operate as a waiver; nor shall any single or partial exercise of any right, power or privilege preclude any other or further exercise thereof.

## **14. Severability**

The invalidity or unenforceability of any provisions of this Agreement shall not affect the validity or enforceability of any other provision of this Agreement, which shall remain in full force and effect.

## **15. Amendment**

All addition amendments and variations to this agreement shall be binding only if in writing and signed by the Parties or their duly authorized representatives.

## **16. WARRANTY/SUPPORT/TRAINING**

For Supply and Installation of DS Switches and all other components: Successful bidder will be responsible for three years' warranty and onsite support for three years (24X7-Support/SLA).

The bidder will be responsible for local onsite Training of two ICT officers Free of Cost. The successful bidder shall provide the necessary trainings prior to product delivery and will give both the participants complete overview of the solution, help them become familiar with its capabilities, and allow them to practice using the solution with day to day operations.

## **17. ARBITRATION**

In case of any dispute or conflict between bidder and client (PTA) the case will be referred to the Grievances Committee of PTA. If the decision of committee is not acceptable by the contractor, the case shall be referred to Authority, whose decision will be final.

## 18. INTEGRITY PACT

INTEGRITY PACT DECLARATION OF FEES, COMMISSION AND BROKERAGE ETC.  
PAYABLE BY THE CONTRACTORS OF GOODS, SERVICES & WORKS IN CONTRACTS  
WORTH RS.10.00 MILLION OR MORE

Contract Number: \_\_\_\_\_

Dated: \_\_\_\_\_

Contract Value: \_\_\_\_\_

Contract Title: \_\_\_\_\_

[Name of Contractor] hereby declares that it has not obtained or induced the procurement of any contract, right, interest, privilege or other obligation or benefit from Government of Pakistan or any administrative subdivision or agency thereof or any other entity owned or controlled by it (GoP) through any corrupt business practice.

Without limiting the generality of the foregoing [Name of Contractor] represents and warrants that it has fully declared the brokerage, commission, fee etc. paid or payable to anyone and not given or agreed to give and shall not give or agree to give to anyone within or outside Pakistan either directly or indirectly through any natural or juridical person, including its affiliate, agent, associate, broker, consultant, director, promoter, shareholder, sponsor or subsidiary, any commission, gratification, bribe, finder's fee or kickback, whether described as consultations fee or otherwise, with the object of obtaining or inducing the procurement of a contract, right, interest, privilege or other obligation or benefit in whatsoever form from GoP, except that which has been expressly declared pursuant hereto.

[Name of Contractor] certifies that it has made and will make full disclosure of all agreements and arrangements with all persons in respect of or related to the transaction with GoP and has not taken any action or will not take any action to circumvent the above declaration, representative or warranty.

[Name of Contractor] accepts full responsibility and strict liability for making and false declaration, not making full disclosure, misrepresenting fact or taking any action likely to defeat the purpose of this declaration, representation and warranty. It agrees that any contract, right interest, privilege or other obligation or benefit obtained or procured as aforesaid shall, without prejudice to any other right and remedies available to GoP under any law, contract or other instrument, be voidable at the option of GoP.

Notwithstanding any rights and remedies exercised by GoP in this regard, [Name of Contractor] agrees to indemnify GoP for any loss or damage incurred by it on account of its corrupt business practices and further pay compensation to GoP an amount equivalent to ten times the sum of any commission, gratification, bribe, finder's fee or kickback given by [Name of Contractor] as aforesaid for the purpose of obtaining or inducing the procurement of any contract, right, interest, privilege or other obligation or benefit in whatsoever form from GoP.

\_\_\_\_\_  
[ Buyer ]

[Contractor]

#### 19. Assignment

This Agreement may not be assigned by either party to other than by mutual agreement between the Parties in writing.

IN WITNESS WHEREOF, the parties hereto set their hands the day, month and year first above written.

For and Behalf of Client.

For and on Behalf of: Contractor

By: \_\_\_\_\_  
Name: \_\_\_\_\_  
Title : \_\_\_\_\_  
Signature: \_\_\_\_\_  
Date : \_\_\_\_\_

By: \_\_\_\_\_  
Title: \_\_\_\_\_  
Name: \_\_\_\_\_  
Signature: \_\_\_\_\_  
Date : \_\_\_\_\_

Witnesses

1. \_\_\_\_\_  
Name: \_\_\_\_\_  
CNIC: \_\_\_\_\_

2. \_\_\_\_\_  
Name: \_\_\_\_\_  
CNIC: \_\_\_\_\_



**Annex - F**

**NON-DISCLOSURE AGREEMENT**

THIS NON-DISCLOSURE AGREEMENT ("NDA") is made and entered into at **Islamabad, Pakistan** on the \_\_\_ day of -----2020

**BY AND BETWEEN**

Pakistan Telecommunication Authority, a statutory regulatory authority established under Pakistan Telecommunication (Re-Organization) Act, 1996, having its Head Quarter at F-5/1, Islamabad through Director Type Approval (hereinafter called as the "**CLIENT**") which expression shall where the context admits, include successors-in-interest and assigns) of the One Part:

**AND**

(insert name of Client) a Client incorporated under the laws of ..... having its registered office at----- through its authorized representative Mr..... (herein after called as "**Contractor**") which expression shall where the context so allows include his/its successors-in-interest, executors, administrators, heirs and permitted assigns) of the **Other Part**;

(The Party of the One Part and Party of the Other Part shall hereinafter be collectively referred to as 'Parties' and individually as 'Party' as the context of this NDA requires).

**WHEREAS,**

1. The parties have entered into Agreement dated ....., (the "Agreement") whereby, the Client may have to disclose certain nonpublic and proprietary information in result of execution and subsequent operation of the Agreement to the Contractor, which may fairly be considered to be of confidential nature including, but not limited to, methods, practices and procedures with which the Parties conduct their respective businesses, Internal working, decisions or Standard operating Procedures (SOPs) which are not Public documents, strategies in dealing with the Operators, Licensees, licensee lists, contract terms, methods of operation, software specifications, software codes, functionality, know how, and financial information etc. the Know-How, information pertaining to its principles, pricing policy, commercial relationship, negotiations or parties' projects, affairs, finances or any information in respect of which the parties are bound by an obligation of confidentiality to any third party.
2. The Parties are desirous to set the terms and conditions hereunder and sign this NDA.

**NOW, THEREFORE THIS AGREEMENT WITNESSETH,** for good and valuable consideration, it is hereby agreed between the parties as under;

1. Under this Agreement the Contractor is under an obligation to keep all such information that is disclosed in the course of the contract with PTA, confidential and not to use it to the detriment of the Authority. In particular, the Contractor shall not use it for, or disclose it to, any of its new employer or client.
2. Any unauthorized disclosure or use of the Authority's confidential information could lead to litigation against the Contractor and any new employer.
3. **Definition of Confidentiality.** In addition to the definition used in the Agreement, "Confidential Information" refers to any information which has commercial value and is either (i) technical information,

including patent, copyright, trade secret and other proprietary information, techniques, sketches, drawings, models, inventions, know-how, processes, apparatus, equipment, algorithms, software programs, software source documents, and formulae related to the current, future and proposed products and functions of the Client, or (ii) non-technical information relating to Client's functions, responsibilities, operations including, without limitation, plans and strategies, finances, financial and accounting data and information, Contractors, stakeholders, purchasing data, strategic plans and any other information which is proprietary and confidential to Client.

4. **Nondisclosure and Non-use Obligations.** Subject to confidentiality clause under the Agreement, the Contractor will maintain in confidence and will not disclose, disseminate or use any Confidential Information belonging to Client, whether or not in written form. Contractor agrees that Contractor shall treat all Confidential Information of Client with at least the same degree of care as Contractor accords its own Confidential Information. Contractor further represents that Contractor exercises at least reasonable care to protect its own Confidential Information. the Contractor agrees that Contractor shall disclose Confidential Information only to those of its employees who need to know such information and certifies that such employees have previously signed a copy of this Agreement.

5. **Survival.** This Agreement shall govern all communications between the Parties. Contractor understands that its obligations under Paragraph 4 ("Nondisclosure and Non-use Obligations") shall survive for two years after the termination or expiry of the Agreement. Upon termination of any relationship between the Parties, Contractor will promptly deliver to Client, without retaining any copies, all documents and other materials furnished to Contractor by Client.

6. **Governing Law.** This NDA shall be governed in all respects in accordance with the laws of Pakistan.

7. The Contractor agrees and undertakes that upon termination of the Agreement by the Client.

- shall return to Client all documents and property of Client, even if not marked "confidential" or "proprietary," including but not necessarily limited to drawings, reports, manuals, correspondence, customer lists, computer programs, and all other materials and all copies thereof relating in any way to Client, or in any way obtained by the Contractor during the course of the Agreement and shall not retain copies, notes or abstracts of the foregoing.
- The Client may notify any future or prospective employer or third party of the existence of this Agreement.
- Injunctive Relief.** A breach of any of the promises or agreements contained herein will result in irreparable and continuing damage to Client for which there will be no adequate remedy at law, and Client shall be entitled to injunctive relief and/or a decree for specific performance and such other relief as may be proper (including monetary damages if appropriate).

IN WITNESS WHEREOF, the Parties have executed this Agreement as of the dates written below.

| For and on Behalf of Client | For and on behalf of Contractor |
|-----------------------------|---------------------------------|
| Signed by _____             | Signed by _____                 |
| Seal-----                   | Seal _____                      |
| Witness _____               | Witness _____                   |

