



NATIONAL TELECOMMUNICATION CORPORATION

HEADQUARTERS G-5/2 ISLAMABAD

e-Bidding documents

FOR

**Procurement of NTC Data Center Karachi Equipment on
Turnkey DDP Site Basis**

Through EPADS (www.eprocure.gov.pk)

EPADS e-Tender Notice #HQ/ADV-48/ 2025-26

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SECTION-I

INSTRUCTIONS TO THE BIDDERS

1 INVITATION TO e-BIDS

Tender Notice No. HQ/ADV-48/ 2025-26

National Telecommunication Corporation (NTC), invites electronic bids from the contractor's / service providers, registered with Income Tax and Sales Tax Department having relevant experience for supply of following services:

Tender No.	Description of Service	Last Date & Time of Bid Submission	Bid Opening Date & Time
48	Procurement of NTC Data Center Karachi Equipment on Turnkey DDP Site Basis	30-06-2026 @ 1100 Hrs.	30-06-2026 @ 1130 Hrs.

Bidding documents as per regulations, containing detailed terms and conditions, specifications and requirements etc. are available for the registered bidders on EPADS at (www.eprocure.gov.pk).

Electronic bids must be submitted through EPADS on or before the bid closing date and time, as specified in the table. Manual bids will not be accepted. Electronic bids will be opened on the same day, at least 30 minutes after the bid closing time, as indicated in the table.

Note: Notification of the GRC constituted in terms of Rule-48 of PPRA rules, 2004 is provided on EPADS at www.eprocure.gov.pk and on www.ntc.net.pk

Director (Procurement)

Room # 05, Ground Floor, NTC HQs, Sector G-5/2 Islamabad

Phone: 051-9245833, 9245975 Fax: 051-9245719

www.ntc.net.pk

2 GENERAL INTRODUCTION

- 2.1 National Telecommunication Corporation (NTC) is an autonomous corporation established on January 1, 1996, under the Pakistan Telecommunication Re-Organization Act 1996. NTC has the mandate to provide Information and Telecommunication services to the Federal Government, Provincial Governments, Armed Forces, defense projects, and institutions/organizations as determined by the Federal Government through SRO No. 1209(1)/95 dated December 31, 1995, as amended on June 11, 1997.
- 2.2 NTC has successfully established state-of-the-art Data Centers in Islamabad and Lahore. Building upon this foundation, NTC now intend to establish a new Data Center at its Regional Headquarters Building, Malir Halt, Karachi. This strategic expansion aims to enhance footprint of NTC's Data Center infrastructure by extending services to the government sector in the southern region, while introducing advanced cloud services and other value-added solutions as outlined in the project scope.

3 PROJECT OBJECTIVES

- 3.1 The primary objective of this project is to establish a on premises Compute, storage and cloud platform in compliance to given specifications, and industry standards.
- 3.2 Key objectives include:
- 3.2.1 Establishment of a robust platform supported by network, security infrastructure, along with facility power systems and associated civil works, already being procured though a separate RFP.
- 3.2.2 Delivery of tailored services aligned with NTC's customer requirements and expectations through a reliable, high-performance infrastructure.
- 3.2.3 Achievement of relevant certifications to ensure uptime, redundancy, and operational excellence in compliance with relevant standardization bodies.

4 SCOPE OF WORK

- 4.1 The scope of work include supply, installation, testing and commissioning of Computing Nodes, Storage Area Network (SAN), Virtualization/Cloud & Training along Commissioning and Service Level agreement (SLA) Services in NTC Data Center to be established in NTC South Region at NTC Office Malir Halt Karachi.
- 4.2 Details of the components included in this RFP include all necessary components as detailed in the Bill of Quantities (BOQ) at [Annex-A \(Annex-A1 to Annex-A4\)](#) and Technical Specifications at [Annex-B \(B1 to B5\)](#). The scope encompasses the complete supply, installation, testing, commissioning, and successful rollout of services. The following are noteworthy salient features of the project:
- 4.2.1 **Computing Infrastructure**
Computing nodes equipped with Graphics Processing Units (GPUs) for high-performance workloads.
- 4.2.2 **Storage Systems**
Primary and backup storage solutions ensure data redundancy and business continuity.

4.2.3 Cloud Platform Establishment

Implementation of a multi-tenant, multi-service cloud platform enabling NTC to deliver scalable and resilient cloud services to customers across Pakistan.

Integration and Commissioning

Complete supply, installation, testing, and commissioning of all project components with full-service rollout through the cloud platform.

4.2.4 Ancillary Activities

Any additional activities deemed necessary for the successful delivery of services and achievement of project objectives.

4.2.5 Service Level Agreement (SLA) Services as Per Annex-C

4.3 The following items (but not limited to) shall be required for the execution of the work.

- Hardware
- Software
- Installation materials
- Services (Engineering, Installation, Configuration, Integration, Support, etc.)
- Documentation

4.4 **General Instructions:** The bidder shall undertake to:

4.4.1 Keep NTC informed of technological and other developments in the products offered and methods of incorporating such developments economically to NTC's network.

4.4.2 The proposed equipment (hardware and software) should be field-proven. The Supplier has to provide list of installed base references in Pakistan, including the contact persons.

4.4.3 Equipment shall be flexible, efficient, rapid, accurate, and reliable.

4.4.4 Equipment shall be fully compatible with the future services and environments of the NTC network.

4.4.5 Equipment shall be the latest and with optimized power consumption and compact design. The bidder shall indicate the power the environmental/Facility requirements of the offered system.

4.4.6 Equipment shall be the latest state-of-the-art technology, currently available in the international market and shall have 5 Years EOL and EOS from acceptance.

4.5 System Installations

4.5.1 The bidder shall supply, install and configure the supplied equipment.

4.5.2 The bidder shall provide all cables, connectors, and installation materials required on turnkey basis.

4.5.3 Wiring /cabling shall be of flexible design that can be easily added, rearranged or removed.

4.5.4 Minor modifications in the building like making holes in the wall; roof or floors required for the execution of the works, shall be done by the bidder.

4.6 Maintenance Support

4.6.1 Installation, Testing, and commissioning of all components of the project with provision of project charter, plan documents, diagrams, shop drawings, as-built, LLDs, HLDs, and other Assets/design documents. Commissioning and onboarding of production services.

- 4.6.2 The bidder shall provide routine/preventive & corrective maintenance for OEM support (ticket-based support/subscription and hardware warranty NBD with year-wise cost for three years (Including OEM support components already mentioned). Applicable w.e.f. date of issuance of PAC.
- 4.6.3 Local partner support with SLA for two years' post-warranty time along with on-site support as per SLA details.
- 4.6.4 The bidder shall recommend the type of routine / preventive & corrective maintenance tests and their duration, giving the test setups and their procedures in the PAT (Provisional Acceptance Testing) document.
- 4.6.5 The bidder will clearly indicate the point of presence in Pakistan for maintenance purpose.
- 4.6.6 The bidder will specify first, second and third line of maintenance support along with down time.
- 4.6.7 The bidder will maintain sufficient quantity of spares at the bidder's point of presence in Pakistan during warranty period. In case of failure of a component or whole system the equipment will be replaced within 24 hrs with a new one.

5 QUALIFICATION CONDITIONS OF BIDDERS

Invitation to submission of sealed bids is open to all firms and Joint Venture in Pakistan who meet following conditions: -

- 5.1 The firm must be registered with Tax Authorities and active Tax payer for Income Tax and Sales Tax.
- 5.2 The firm must be authorized by Original Equipment Manufacturer (OEM) for the quoted items against this tender. The bidder is required to provide valid MAL issued by OEM.
- 5.3 The firm must have relevant experience of at least 03 x similar equipment installation in Data Centers within Pakistan. The participant bidder shall provide all the record of its previous installations along with contracts/purchase orders/completion certificate detail (i.e., amount, date & time of completion, description of items) & contact details of concerned person for reference & verification. The relevant experience of the incumbent bidder will be evaluated on the basis of its supply record & will be considered for further evaluation. If any bidder is found in-experienced or its previous supply record is irrelevant than the said bidder will not be considered for further evaluation.
- 5.4 The firm must have average annual turnover of PKR.1000 million in last three years.
- 5.5 The firm must be registered with Pakistan Engineering Council with specialization codes relevant to Telecom and Data Center Equipment.
- 5.6 The firm must provide undertaking on at least PKR 200/- Judicial Paper that:
 - a. The firm is not black listed from any government organization.
 - b. The firm does not have any linkage with India and/or Israel regarding ownership, sponsoring, financing etc.
- 5.7 One Bid per Bidder- A bidder shall submit only one bid, in the same bidding process, either individually as a bidder or as a member in a joint venture or any

similar arrangement. No bidder can be a sub-contractor while submitting a bid individually or as a member of a joint venture in the same bidding process.

5.8 The firm must fully comply to the tender clauses as per [Annex-D](#).

Note: Prospective Bidder Must Provide Valid Documentary Proof including CVs against serial # (5.1-5.8) along with the bid. Non-Submission of any of above document will lead to Consideration of a firm as NON-RESPONSIVE & Sub-sequent Non-CONSIDERATION for the evaluation.

6 COST OF TENDERING

The bidder shall bear all costs associated with the preparation and submission of its bid and the NTC will in no case be responsible or liable for those costs, regardless of the conduct or outcome of the tendering process.

7 CLARIFICATIONS OF TENDER DOCUMENTS

7.1 A prospective bidder requiring any clarification(s) regarding technical and commercial aspects of the tender document may notify to NTC on EPADS platform only, however, in case of further clarification/understanding are required, the bidder may contact following NTC Officers:

Divisional Engineer (Procurement)-I	Director (Procurement)
Tel: 051-9245864, Fax: 051-9245977	Tel: 051-9245833, Fax: 051-9245977
Email: shaukat.ali@ntc.org.pk	Email: kashif.nawaz@ntc.org.pk

7.2 The concerned NTC officer will respond to any request for clarification on EPADS, which receives well before (approximate 05 working days or more) to the deadline for the submission of bids.

8 AMENDMENT OF TENDER DOCUMENTS

8.1 At any time prior to the deadline for submission of bids, the NTC may, for any reason, whether at its own initiative or in response to a clarification requested by a prospective bidder, modify the tender documents by issuing addendum/ amendment on EPADS.

8.2 Any addendum/amendment thus issued shall be part of the tender documents. To afford bidders reasonable time in which to take an addendum into account in preparing their bids, the NTC may at its discretion extend the deadline for submission of bids.

9 PREPARATION OF BID

9.1 Bids should be prepared considering “Single Stage – One Envelope” procedure.

a. Bid documents and all correspondence will be in English language.

9.2 The bid should have a covering letter on letter pad of the firm. All pages of the bid shall be initialed/signed and official seal be affixed by the person(s) authorized to sign. In addition, all the pages of the submitted bid must be numbered. Complete bid shall be scanned and uploaded on EPADS

9.3 Following documents shall be submitted with the proposal:

b. Duly filled Financial Proposal as per [Annex-A \(Annex-A1 to A4\)](#).

- c. Duly filled Technical Compliance sheets as per [Annex-B \(Annex-B1 to B5\)](#).
- d. Duly filled Commercial compliance statement as per [Annex-D](#).
- e. Valid Bid Security.
- f. Documentary evidence and certificates as per Qualification Criteria.
- g. Company Profile.
- h. Legal JV Agreement (If applicable).

NOTE: "Every participant bidder shall submit all above mentioned documents. Non-submission of any of above documents will lead to declaration of bidder as non-responsive & non-consideration for further evaluation."

10 LANGUAGE OF BID DOCUMENTS

- 10.1 Bid documents and all correspondence will be in English language.
- 10.2 The bid should have a covering letter on printed and scanned letter pad of the firm. All pages of the bid shall be initialed/signed and official seal be affixed by the person(s) authorized to sign.

11 PRICE

- 11.1 Prices should be quoted in Pak Rupees as per [Annex-A \(Annex-A1 to A4\)](#).
- 11.2 The price quoted should be firm, final, and clearly typed without any ambiguity.
- 11.3 The quoted price should include all the applicable government taxes, custom duties, in-land transportation, & any other applicable charges
- 11.4 The rates / prices shall be entered against each item in the Bill of Quantity at [Annex-A](#). Any item against which no rate or price is entered and left blank by the bidder shall be deemed covered by the rates / prices for other items in the BOQ. However, for the purpose of financial comparison, price of highest bidder against that particular item will be taken as reference.
- 11.5 Price of any or all items quoted in a currency other than PKR shall be converted into PKR and for calculation purpose conversion rate (i.e. selling) prevailing on the date of tender opening shall be applied.

12 BID SECURITY / EARNEST MONEY

- 12.1 The bidder shall furnish tender security amounting to **PKR. 15,000,000/- (Pak Rupees Fifteen Million Only)** in the form of Pay Order or Deposit at Call or a Bank guarantee as per [Annex-E](#) issued by a scheduled bank of Pakistan in favor of NTC, valid till 28 days beyond bid validity.
- 12.2 The Original Bid Security shall be delivered in person or sent by registered mail, which should reach the office of the Director (Procurement), Room # 05, Ground Floor, NTC HQ, G-5/2, Islamabad, on or before **1100 hours on June 30, 2026**. Any online bid for which the original bid security does not reach before the deadline of the bid shall be rejected by the NTC as non-responsive.
- 12.3 Scanned Copy of the bid security shall be uploaded by the bidder on EPADS before the deadline of bid submission. Any bid not accompanied by bid security shall be rejected by the NTC as non-responsive.
- 12.4 The bid securities / earnest money of the unsuccessful bidders will be returned upon award of the contract to the successful bidder or on expiry of the validity of

- tender security whichever is earlier. The bid securities of bidders, who are not in competition, can be returned earlier at NTC discretion upon receiving a request.
- 12.5 The tender security of the successful bidder will be returned when the bidder has furnished the required Performance Security and signed contract agreement.
- 12.6 All correspondence regarding release/extension of bid security shall be made with Director (Procurement) NTC HQ.
- 12.7 The bid security may be forfeited:
- If a bidder withdraws their bid during the period of bid validity.
 - If the bidder does not accept the correction of their bid price.
 - In the case of successful bidder, if bidder fails to furnish the required performance security or sign the contract agreement.
 - If bidder does not respond to clarifications called by NTC.

13 VALIDITY OF BIDS

Bid shall remain valid for a period of **120 days** from the date of tender opening.

14 DEADLINE FOR SUBMISSION OF BID

- 14.1 The bid shall be uploaded in PDF format on PPRA EPADS website i.e., www.eprocure.gov.pk on or before **1100 hours on June 30, 2026**.
- 14.2 The bidders are required to follow procedure of EPADS and for any clarification/assistance regarding EPADS they may contact PPRA Helpline UAN: 051-111-137-237.
- 14.3 Bid received other than EPADS i.e. hard/Soft copy delivery in person or through e-mail or fax or registered mail will be not accepted by NTC.

15 MODIFICATION & WITHDRAWAL OF BID

- 15.1 Any bidder may modify or withdraw their bid after bid submission provided that written notice of the modification or withdrawal is received by the concerned officer prior to the deadline for submission of bids.
- 15.2 No bid may be modified or withdrawn by a bidder after the deadline for submission of bids.

16 OPENING OF BID

- 16.1 The NTC tender committee will open/download the bids at **1130 hours on dated June 30, 2026** in the presence of bidders' representatives who choose to attend, at NTC HQ G-5/2 Islamabad.
- 16.2 The bidder's name, bid prices, any discount, the presence or absence of tender security, and such other details as the committee at its discretion may consider appropriate, will be announced at the tender opening.
- 16.3 NTC reserves the right to reject any one or all bids prior acceptance of a bid / proposal.
- 16.4 NTC reserves the right to reject any one or all bids as per Public Procurement Rules, 2004 33(1).

17 RESPONSIVENESS OF BIDS

- 17.1 The bid is valid till required period.

- 17.2 The bid prices are firm during its validity and inclusive of all taxes, duties & freight charges etc.
- 17.3 The bidder has furnished valid tender security.
- 17.4 The bidder is eligible to tender and possesses the requisite qualification.
- 17.5 The bid does not deviate from basic tender requirements.
- 17.6 The bid is generally in order etc.
- 17.7 The bidder promptly responds to queries sought by NTC.
- 17.8 The bidder has complied to the tender clauses.

Note: *“Any bidder found non-compliant in any of above-mentioned conditions will be declared as non-responsive and will not be considered for further Evaluation proceedings. A bidder once declared “non-responsive” shall not subsequently be made responsive by the NTC.”*

18 EVALUATION CRITERION FOR MOST ADVANTAGEOUS BIDDER

- 18.1 The tender evaluation committee will evaluate and compare only the bids previously determined to be substantially responsive.
- 18.2 Evaluation will be carried out on **qualification, quality and cost basis**.
- 18.3 The **Most advantageous bidder** shall be the one fully compliant to **qualification criteria, compliant to quality criteria** and **highest ranked** in cost evaluation criteria as defined below:

18.4 Qualification Evaluation Criteria:

In first step, the technical bids shall be evaluated on the basis of conditions for qualification set out in Clause 5 above. The bidders fully compliant to qualification criteria, shall be declared as qualified. **Any firm found non-compliant in any of these conditions will be declared as disqualified and will not be considered for further evaluation proceedings.**

18.5 Quality Evaluation Criteria:

After determining the qualification, the technical bids will be examined in detail whether the quoted bid complies to the technical specifications and evaluation criteria mentioned at [Annex-B \(Annex-B1 to B5\)](#). For this purpose, the bidder's data submitted including statement of compliance, Datasheets and manuals with the bid will be compared with terms and conditions set forth in the tender documents; NTC at its discretion may ask supported documents & clarification in case compliance is not evident from the literature/ documents submitted. Bidders obtaining minimum 75% marks in each quality evaluation criteria besides fully complying to mandatory clause will be considered technically qualified. **Any bidder obtaining less than 75% marks against above Quality Evaluation Criteria or noncomplying any mandatory clauses in the criteria will be rejected by NTC.**

18.6 Cost Evaluation Criteria:

Cost evaluation of the financial bids shall be carried out by comparison of bids' evaluated prices as per bill of quantity at [Annex-A \(Annex-A1 to A4\)](#). The bidder with **lowest financial price** will be declared as **highest ranked** and so on.

- 18.7 Any effort by a bidder to influence NTC in the tender evaluation, bid comparison or order award decision may result in the rejection of their bid.
- 18.8 Any minor informality or non-conformity or irregularity in the bid which does not constitute a material deviation may be waived by NTC, provided such waiver does not prejudice or affect the relative ranking of any other bidders.
- 18.9 Quoting of all BoQ items including Optional BoQ items is mandatory and non-quotation of any item will be disqualify the bid.

19 CLARIFICATIONS / CORRECTIONS OF BID

- 19.1 To assist in the examination, evaluation and comparison of the bids the committee, at its discretion, may ask the bidder for a clarification of its bid. The request for clarification and the response shall be in writing and no change in the price or substance of the bid shall be sought, offered or permitted.
- 19.2 Arithmetical errors will be rectified on the following basis:
If there is a discrepancy between unit price and total price that is obtained by the multiplying the unit price and quantity, the unit price shall prevail and total price shall be corrected. If there is a discrepancy between the words and figures the amount in words shall prevail. If there is a mistake in addition / totaling that can be corrected.
- 19.3 If the bidder does not accept the corrected amount of bid, their bid will be rejected and its tender security forfeited.

20 COMMERCIAL COMPLIANCE STATEMENT

The bidder will furnish a compliance certificate with the bid as per enclosed format ([Annex-D](#)).

21 VARIATION ORDER

NTC reserves the right to place variation order (increase or decrease or delete in the quantities of BOQ). The bidder shall be bound to accept the variation order by NTC.

22 AWARD CRITERIA & NTC'S RIGHT

- 22.1 The bid of qualified/eligible, commercially compliant and technically qualified bidder with financially lowest evaluated cost shall be considered as **most advantageous bid**. Contract will be awarded to most advantageous bid on **as-a-whole basis**.
- 22.2 The NTC reserves the right to accept or reject any bid, and to annul the tendering process and reject all bids, at any time prior to award of order, without thereby incurring any liability to the affected bidders or any obligation to inform the affected bidders of the grounds for the NTC's action.

23 NOTIFICATION OF AWARD & SIGNING OF CONTRACT AGREEMENT

- 23.1 Prior to expiration of the period of tender validity prescribed by NTC, the NTC will notify the successful bidder Letter of Intent (LoI) through EPADS that their tender has been accepted.
- 23.2 Within 5 days from the date of furnishing of acceptable performance security under the condition of contract, the formal contract shall be executed with the successful

bidder. If the successful bidder does not accept LOI of NTC within the bid validity period, NTC may confiscate the bid security.

SECTION-II

TERMS & CONDITIONS OF CONTRACT

1 PERFORMANCE SECURITY

Performance Security against Contract

- 1.1 The successful bidder shall furnish to the NTC a performance security equivalent to 10% of the contract value (Excluding SLA Services at BoQ Sr. No. 2.1 to 2.4 of Annex-A5) in the shape of Pay order or CDR or bank guarantee valid for a period of **15 x Months** as per [Annex-F](#) prior to the signing of contract.
- 1.2 The performance security furnished as per clause 1.1 above shall be further extended if the delivery or completion of work is delayed. Furthermore, the contractor shall extend the performance security to cover the warranty period i.e. One Year from Issuance of Provisional Acceptance Certificate (PAC).
- 1.3 Failure of the successful bidder to furnish performance security shall constitute sufficient grounds for the annulment of the award and forfeiture of the tender security.
- 1.4 All correspondence regarding release of performance security shall be made with Director (Procurement) NTC HQ.

Performance Securities against SLA Services

- 1.5 The contractor shall furnish to the NTC a performance security equivalent to 10% of the contract value of the OEM and Local Partner SLA Services at Bill of Quantity S. No. 2.1 to 2.4 of [Annex-A5](#), in the shape of Pay order or CDR or bank guarantee valid for a period of **60 x Months** as per [Annex-F](#) prior to the signing of contract agreement.
- 1.6 The Performance security of SLA shall be released on successful completion of four (04) years SLA period upon issuance of SLA Acceptance Certificate by Project Director NTC.
- 1.7 All the correspondence regarding release of performance securities against SLA shall be made with Director (Procurement) NTC HQ.

2 CONTRACTOR'S RESPONSIBILITIES

The Contractor shall be responsible for the following:

- 2.1 For the execution of this project for Supply, Installation, Testing and Commissioning of items at Bill of Quantity at Annex-A on Turnkey DDP Site Basis at NTC Data Center at Karachi:
- 2.2 The contractor shall supply, install, test and commission the equipment in accordance with the contract.
- 2.3 All types of transportation for delivery of equipment and software at final destination shall be responsibility of the contractor.
- 2.4 The contractor shall not subcontract whole of the work. The contractor shall not subcontract any part of the works without the consent of NTC.
- 2.5 The Contractor shall execute the basic and detailed design and the implementation activities necessary for successful installation & commissioning of the solution in compliance with the provisions of the Contract or, where not so specified, in accordance with good industry practice. The Contractor shall prepare and furnish the documents for the Project Director's approval or review. Any part of the System

- covered by or related to the documents to be approved by the Ultimate Consignee/Project Director shall be executed only after the approval of these documents.
- 2.6 The Contractor shall conduct an engineering survey of sites and shall submit the Project implementation schedule to Project Director NTC within 01 x week after signing the contract.
 - 2.7 The contractor shall provide the detailed literature for the installed equipment in the form of hard copies and soft copies as mentioned in the BOQ, covering all the details of the equipment, software, solution and their operations & maintenance procedures.
 - 2.8 The contractor shall carryout installation and commissioning according to the implementation schedule, including all action/activities and inform/update Project Director of NTC.
 - 2.9 The contractor shall supply, install, test, commission, provide warranty and SLA support as described in Bill of Quantity at Annex-A (A1 to A4), Technical Specifications at Annex-B1 to B5 and SLA at Annex-C.
 - 2.10 The contractor shall complete the project in completion Time.

3 NTC's RESPONSIBILITIES

NTC shall be responsible for the following:

- 3.1 Project Director shall arrange to provide the requisite data and site access for implementation of the project.
- 3.2 Project Director shall assist in timely and satisfactory completion of the project in their areas of jurisdiction as per SOW.
- 3.3 Project Director shall be responsible to verify the delivery BOQ against contract, to issue Provisional Acceptance Certificate & Final Acceptance Certificate and to coordinate with any third party (if required). PD will also be responsible to verify the delivery challans of the delivered solution by the contractor.
- 3.4 Project Director shall get approval of the PAT documents from GM (Data & IT) NTC HQs.
- 3.5 Project Director NTC shall nominate committee for PAT.

4 TRANSPORTATION / PACKING

All types of transportation for delivery of equipment / solution at final destination will be the responsibility of the contractor. Contractor shall ensure proper / international packing of equipment to avoid deterioration of equipment etc.

5 TIME FOR COMPLETION

- 5.1 The contractor shall complete supply, installation, testing, and commissioning all equipment and solutions within Twenty (20) Weeks from the date of signing of contract.
- 5.2 The contractor shall also conduct all the local and foreign trainings within the abovementioned completion timelines subject to timely nomination of trainees from NTC.

6 STANDARD WARRANTY

- 6.1 The Contractor shall warrant that all goods, equipment, and works delivered and executed under the Contract are:
- Brand new, unused, and incorporate the latest improvements in design and materials;
 - Free from defects in material, workmanship, or construction;
 - Not refurbished, stolen, obsolete, or smuggled.
- (The Contractor shall furnish a written undertaking to this effect at the time of delivery or submission of completion documents.)
- 6.2 The warranty shall remain valid for a period of One (01) Year, commencing from the date of issuance of the **Provisional Acceptance Certificate (PAC)** by NTC.
- 6.3 NTC shall promptly notify the Contractor in writing of any claims arising under this warranty. Upon such notification, the Contractor shall, at its own cost and risk, repair or replace the defective item(s), equipment, or work(s) within a reasonable time, not exceeding seven (07) calendar days.
- 6.4 If the Contractor fails to remedy the defect(s) within the specified time after receipt of notice, NTC shall be entitled to take remedial actions as deemed necessary, at the risk and expense of the Contractor, without prejudice to any other contractual rights or remedies available to NTC.
- 6.5 Without prejudice to any other clause of this Contract, the Contractor shall promptly correct, at no additional cost to NTC, any defect in work previously corrected if it reoccurs or is found to have been improperly rectified, provided that such notice is issued within the warranty period.
- 6.6 If no defect or discrepancy is reported by the Ultimate Consignee(s) /Project Director during the warranty period, the performance security submitted by the Contractor shall be released by Director (Procurement), NTC HQs, after issuance of Final Acceptance Certificate.
- 6.7 During One (01) Year warranty period, the contractor shall arrange to provide licenses with validity covering the warranty period w.e.f date of issuance of PAC till Final Acceptance Certificate.
- 6.8 During One (01) Year warranty period, the contractor shall arrange to provide OEM support (Ticket base support/subscription and hardware warranty Next Business Day (NBD) on the same lines as per SLA at [Annex-C](#) w.e.f date of issuance of PAC till Final Acceptance Certificate.
- 6.9 During One (01) Year warranty period, the contractor shall arrange to provide Local partner support along with onsite support on the same lines as per SLA at [Annex-C](#) w.e.f date of issuance of PAC till Final Acceptance Certificate.

7 LIQUIDATED DAMAGES

- 7.1 Unless the failure to complete the work is caused by force majeure or delay is not on part of NTC, the contractor shall pay to NTC as liquidated damages of the delayed part of the contract, at rate of 0.5% of the delayed part, up to a maximum of 10% of the contract value (Except SLA Services) and the same will be recovered from the Contractor at the time of payment.

- 7.2 In case of force majeure the LD charges may be waived off by NTC on receipt of request from contractor with documentary evidences. If the delay is on the part of NTC, and agreed by NTC, then for that time no liquidated damages will be paid to NTC. NTC shall have discretion to impose/waive off LD Charges based on the performance of contractor.

8 LICENSES/SUBSCRIPTION SERVICES

- 8.1 The contractor shall be responsible for provision of licenses against all licensed components of the project covering standard warranty of One (01) Year and SLA period of Two (02) Years with option of further extension of Two (02) Years.
- 8.2 The contractor shall, if required, deploy demonstration licenses during the installation of equipment and software while the production licenses shall only be deployed on explicit intimation from Project Director vide Successful Conduct of PAT letter.
- 8.3 Project Director shall verify the deployment of all licenses along with their validity details through PAT committee.

9 PROVISIONAL ACCEPTANCE CERTIFICATE

- 9.1 The contractor shall provide Provisional Acceptance Testing (PAT) documents to the Project Director for vetting and approval of GM (Data & IT) NTC HQs within 08x Weeks from signing of the contract.
- 9.2 Upon completing the supply, installation and commissioning of all the equipment and allied components, the contractor shall notify the Project Director in writing to initiate the Provisional Acceptance Test (PAT). The Project Director shall nominate a committee to conduct the PAT for approval of GM (Data & IT). The approved PAT committee shall carry out PAT in accordance with the approved PAT protocols, verifying the installed equipment and allied components against the contract BoQ and specifications.
- 9.3 The contractor shall do all necessary arrangements for the PAT testing as per approved PAT protocols. Upon successful completion of the PAT, the nominated committee will sign the PAT report, confirming compliance.
- 9.4 Upon the successful conduct of the PAT and work inspection, the Project Director NTC shall issue Successful Conduct of PAT letter with instructions to the contractor for deployment of production licenses for all licensed components of the project. PAT committee will verify the deployment of licenses and their validity as per contract terms.
- 9.5 Subject to verification of license deployment, Project Director shall issue Provisional Acceptance Certificate (PAC). If the PAC is not issued within one (01) week of the PAT and work inspection as well as license deployment, the Project Director shall provide reasons of the delay within one week after receiving a formal request from the contractor.
- 9.6 Any discrepancies or deficiencies identified during the PAT or work inspection or license verification, will be communicated to the contractor, who shall address them promptly, but no later than fourteen (14) days from the date of notification. In such cases, the PAC will only be issued upon successful rectification of the

discrepancies and completion of the required tests to the satisfaction of the PAT committee.

- 9.7 Delays in issuing the Provisional Acceptance Certificate (PAC) will be attributed to the contractor only if discrepancies identified during the PAT remain unresolved by the contractor.
- 9.8 The Provisional Acceptance Certificate (PAC) will be valid for warranty period of 12 months. Effective date of PAC shall be license activation date.
- 9.9 Any Minor / Non-service affecting discrepancies shall be appended with PAC as Annexure.

10 NIL DISCREPANCY CERTIFICATE

- 10.1 Upon successful issuance of the Provisional Acceptance Certificate (PAC), and subsequent resolution of Any Minor / Non-service affecting discrepancies the Project Director shall issue a Nil Discrepancy Certificate (NDC) in favor of the contractor for that specific site, after being fully satisfied with the completeness of the work executed thereon.
- 10.2 Issuance of the NDC shall not absolve the contractor of their obligations during the warranty period.

11 SERVICE LEVEL AGREEMENT

- 11.1 The SLA covers OEM support and partners' support for a period of two (02) years, with the option of further extension of two (02) Years for all the equipment and licenses provided under the scope of the project.
- 11.2 Warranty services at clause 6 above shall also be provided on the same lines as per SLA terms and conditions defined in [Annex-C](#).
- 11.3 Project Director shall monitor the performance of the contractor as per the terms and conditions of the SLA as defined in Annex-C and issue the SLA Acceptance Certificate in each quarter, subject to satisfactory performance.
- 11.4 The Project Director shall impose penalties and deduct the same from the quarterly payments against the SLA.

12 TRAININGS

- 12.1 The contractor shall arrange the following training as specified in the Bill of Quantity at [Annex- A3](#) i.e. OEM Certified Local Training spanning 5x Days each for compute, Storage and cloud with Certification vouchers for 10x Persons
- 12.2 Complete proposal of the training courses and their duration covering Operation, Maintenance, and Diagnostic Testing, Measurements, Repairs, and Management Information Reporting procedures shall be submitted.
- 12.3 All the instructors shall possess high technical ability to impart training. They shall have as high a command of the English language.
- 12.4 Project Director NTC shall propose nominations to the Director (Procurement) NTC for perusal and recommendation of CTO and approval of MD NTC.
- 12.5 The contractor shall be bound to conduct these trainings within the Project Completion Timeline, i.e., twenty (20) Weeks from the signing of the contract.
- 12.6 The efficiency of the training program conducted by the contractor/OEM will be under close scrutiny, and it will have to be repeated by the contractor without extra

cost to NTC if the training given is found to be ineffective, deficient, and unsatisfactory. However, NTC has to communicate its dissatisfaction (if any) during the training period for improvement and not afterwards.

- 12.7 The Project Director shall issue the Training Acceptance Certificate upon successful completion of the required tasks carried out by the contractor.

13 TERMS OF PAYMENT

- 13.1 **Equipment & Licenses:** All payments against shall be processed by Finance Wing NTC HQs through Director (Procurement) NTC HQs subject to invoice verification by Project Director in following manner:
- 60% payment** of delivered equipment value only shall be made upon successful delivery of equipment at destination which shall be proved by duly verified delivery challans by NTC Project Director.
 - 95% payment** of contract value (Excluding SLA, Trainings & Data Center Certifications) including adjustment of 60% payment against delivered equipment will be made upon issuance of Provisional Acceptance Certificate (PAC) by Project Director.
 - 05% payment** of contract value (Excluding SLA, Trainings & Data Center Certifications) will be made upon issuance of Nil Discrepancy Certificate (NDC) by Project Director.
- 13.2 **Service Level Agreement:** All payments shall be processed by Finance Wing NTC HQs through Project Director NTC HQs upon issuance of Quarterly SLA Acceptance Certificate by NTC Project Director subject to invoice verification.
- 13.3 **Trainings:** All payments shall be processed by Finance Wing NTC HQs through Project Director NTC HQs upon issuance of Trainings Acceptance Certificate by NTC Project Director subject to invoice verification.
- 13.4 The Contractor will submit the commercial invoice & sales tax invoice in triplicate to NTC. The Contractor will clearly mention NTN & GST number of both supplier & purchaser on the invoice (NTC NTN # 1218153-6, NTC GST # 07-01-9802-013-64).
- 13.5 All the payments shall be made through cross cheque in the Pak Rupees.
- 13.6 Taxes will be deducted as per government rules at the time of payment.

14 CONTRACTOR'S NEGLIGENCE

- 14.1 The contractor will indemnify NTC against actual losses, subject to limitation of liability not exceeding 10% of the contract value as detailed hereinafter for loss and / or damage to property and / or persons of NTC arising from negligence errors or omissions or default and / or infidelity during period of this contract and arising out of and in the course of the performance by the contractor of its obligations under this contract. However, the said clause will be governed by prevailing laws of Islamic Republic of Pakistan.
- 14.2 The laws of Islamic Republic of Pakistan shall prevail in case of any inconsistency / anomaly.

15 FINAL ACCEPTANCE CERTIFICATE

- 15.1 The contractor must notify the NTC concerned officer at-least 15 days before the expiry of warranty period for the issuance of final acceptance certificate. Upon such notification from contractor, the Project Director will issue Final Acceptance Certificate, in favor of contractor subject to satisfactory completion of warranty period as per requirement of contract and submission of performance security against the first year of SLA. Alternatively, the NTC concerned officer will notify the contractor for the discrepancies that still remain un-resolved and contractor will rectify the discrepancies.
- 15.2 The FAC shall not absolve the contractor of its obligations under Service Level Agreement

16 DEFAULT BY CONTRACTOR

- 16.1 If the contractor fails to provide the services, refuses or fails to comply with a valid instruction of the NTC, the NTC may give notice and stating the default.
- 16.2 If the contractor has not taken all practicable steps to remedy the default within 14 days after receipt of NTC notice, the NTC may by a second notice cancel the contract and confiscate the performance security.

17 ARBITRATION AND APPLICABLE LAW

- 17.1 This Agreement shall be governed under Pakistani law and the Courts at Islamabad shall have exclusive jurisdiction over any matter that may be referred to a Court under this Agreement.
- 17.2 In the event that any dispute arises between the Parties under this Agreement, one Party shall issue notice to the other Party to mutually negotiate a resolution to the dispute. If the negotiations fail to resolve the dispute within seven (7) days of receipt of the notice, the dispute shall be referred to the Managing Director, National Telecommunication Corporation ("MD") or their nominee who shall provide a personal hearing to Contractor and render a decision thereon within a period of thirty (30) days. In the personal hearing conducted pursuant to this clause, the Contractor shall not be represented by a legal practitioner within the meaning of the Legal Practitioners and Bar Councils Act, 1973.
- 17.3 If the Contractor is aggrieved of the decision of the MD or their nominee rendered under clause (17.2) hereof, the Contractor may refer the dispute to arbitration within thirty (30) days of the date of the decision of the MD or their nominee under the Arbitration Act, 1940 or any law that the Arbitration Act, 1940 is repealed, amended, or modified by at the time of referral of the dispute to arbitration. The arbitration shall be conducted before a Sole Arbitrator to be appointed by the consent of the Parties. The seat and venue of arbitration shall be at the National Telecommunication Corporation Headquarters, Sector G-5/2, Islamabad. The arbitration and the award thereof shall be conducted in the English language.
- 17.4 The costs and fees of the Sole Arbitrator shall be shared by the Parties equally. A Party shall bear the costs and fees of its legal practitioners and other personnel that a Party engages for the arbitration unless otherwise awarded by the Sole Arbitrator.

18 FORCE MAJEURE

- 18.1 The Contractor shall not be liable for forfeiture of its performance security, liquidated damages or termination for default, if and to the extent that, its delay in performance or other failure to perform its obligations under the contract is the result of an event of Force Majeure.
- 18.2 If either party is temporarily rendered unable, wholly or in part by Force Majeure to perform its duties or accept performance by the other party under the Contract it is agreed that on such party, giving notice with full particulars in writing of such Force majeure to the other party within 14 (fourteen) days after the occurrence of the cause relied on, then the duties, of such party as far as they are affected by such Force Majeure shall be suspended during the continuance of any inability so caused but for no longer period and such cause shall as far as possible be removed with all reasonable speed. Neither party shall be responsible for delay caused by Force Majeure.
- 18.3 The terms "Force Majeure" as used herein shall mean Acts of God, strikes, lockouts or other industrial disturbance, act of public enemy, war, blockages, insurrections, riots, epidemics, landslides, earthquakes, fires, storms, lightning, flood, washouts, civil disturbances, explosion, Governmental Export/Import Restrictions (to be supported by a letter from the relevant Authority and verified by the Diplomatic Mission in Pakistan), Government actions/restrictions due to economic and financial hardships, change of priorities and any other cause similar to the kind herein enumerated or of equivalent effect, not within the control of either party and which by the exercise of due care and diligence either party is unable to overcome.
- 18.4 The term of this Contract shall be extended for such period of time as may be necessary to complete the work which might have been accomplished but for such suspension. If either party is permanently prevented wholly or in part by Force Majeure for period exceeding 12 (twelve) months from performing or accepting performance, the party concerned shall have the right to terminate this contract immediately giving notice with full particulars for such Force Majeure in writing to the other party, and in such event, the other party shall be entitled to compensation for an amount to be fixed by negotiations and mutual agreement
- 18.5 If a Force Majeure situation arises, the Contractor shall promptly notify NTC in writing of such conditions and the cause thereof. Unless otherwise directed by NTC in writing, the supplier shall continue to perform its obligations under the contract as far as is reasonably practicable, and shall seek all reasonable alternative means for performance not prevented by the Force Majeure event.

19 TERMINATION FOR INSOLVENCY

The NTC may at any time terminate the contract by giving written notice to the contractor, without any compensation to contractor. If the contractor becomes bankrupt or otherwise insolvent, provided that such termination will not prejudice or affect any right of action or remedy which has accrued or will accrue thereafter to action to the NTC.

20 TERMINATION FOR CONVENIENCE

The NTC may send a written notice to the contractor and terminate the contract in whole or in part any time for its convenience. The notice of termination shall specify that the termination is for the NTC's convenience, the extent to which performance or work under the contract is terminated and the date upon which such termination becomes effective.

21 PROJECT DIRECTOR / ENGINEER IN CHARGE

Director (Data Center) NTC HQs Islamabad

22 DEBARMENT / BLACKLISTING OF FIRM

- 22.1 As per clause-19 of the PPRA rules 2004, NTC reserves the right of debarment 'or' blacklisting of a firm, association, corporation, joint venture, company, partnership or any other legal entity subject to any of the following acts: -
- Consistent failure to provide satisfactory performance.
 - Contractor becomes insolvent.
 - Existence of judicial decision against a contractor in respect of a corrupt or collusive practice.
 - Submission of false and spurious documents, making false statements and allegations to gain undue advantage.
 - Commission of fraud.
 - Contractor abandons the contract and allied Service Level Agreement.
 - Contractor without reasonable excuse fails to commence the work 'or' suspends the progress of work for 14 days.
 - Contractor is not executing the work in accordance with the contract or is persistently or flagrantly neglecting to carry out their obligations under the contract.
 - Commission of embezzlement, criminal breach of trust, theft, cheating, forgery, bribery, falsification or destruction of records, receiving stolen property, false use of trademark, securing fraudulent registration with sales tax authorities, Pakistan Engineering council etc, giving false evidence, furnishing of false information of serious nature.
- 22.2 Managing Director NTC will constitute a committee comprising of three NTC officers and they will investigate the matter in connection with allegation of corrupt, fraudulent, coercive or collusive practices or illegally harassment or threat. Moreover, the committee shall also accord adequate opportunity of being heard to the contractor who is to be debarred / blacklisted. The said committee will forward its clear recommendations for the approval of Managing Director NTC.
- 22.3 The debarment shall be for a reasonable specified period of time, commensurate with the seriousness of the cause. However, the debarment period shall not exceed from three years. Moreover, NTC also reserves the right of permanent blacklisting of a contractor subject to severity of the corrupt or fraudulent practices.

23 REPEAT ORDER

NTC may place Repeat Order on the contractor as per PPRA Rules 2004.

24 INTEGRITY

- 24.1 The Contractor hereby declares that it has not obtained or induced the procurement of this Contract or a right, interest, privilege or other obligation or benefit under this Contract from Government of Pakistan or any administrative subdivision or agency thereof or any other owned or controlled by it (GoP) through any corrupt business practice.
- 24.2 Without limiting the generality of the foregoing the Contractor represents and warrants that it has fully declared the brokerage, commission, fees 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, any commission, gratification, bribe, finder's fee or kickback, whether described as consultation fee or otherwise, with the object of obtaining or including the procurement of this Contract or a right, interest, privilege or other obligation or benefit under this Contract in whatsoever form from GoP, except that which has been expressly declared pursuant hereto.
- 24.3 The Contractor accepts full responsibility and strict liability for making any false declaration, not making full disclosure, misrepresenting facts or taking any action likely to defeat the purpose of this Clause.

25 PROJECT MANAGEMENT TEAM

- a. **Dedicated Project Manager:** The contractor shall assign a dedicated Project Manager who will serve as the primary Point of Contact (POC) with NTC. The Project Manager will be responsible for coordinating all project activities to ensure smooth execution and successful completion of the Project.
- b. **Project Management Methodology and Reporting:** The contractor's Project Management team shall employ standard and recognized project management methodologies, practices, and tools to plan, monitor, and control all project phases. Regular progress reporting shall be provided to NTC to ensure timely, transparent, and effective communication throughout the Project lifecycle.
- c. **Project Documentation and Handover:** The contractor shall prepare comprehensive documentation covering all project components, including inventories of hardware and software with complete product details, part numbers, and serial numbers. All documentation will be formally handed over to NTC upon Project completion and issuance of the Provisional Acceptance Certificate (PAC)

26 DECLARATION OF BENEFICIAL OWNERS' INFORMATION

The "Declaration of Beneficial Owners' Information of Public Procurement Contract Awarded Regulations, 2022" require that the contractor shall be bound to provide beneficial ownership information as per Performa attached as [Annex-G](#).

ANNEX-A: BILL OF QUANTITY

Sr	Description	Total amount in PKR inclusive of Taxes
1	Annex-A1 Computing Nodes	
2	Annex-A2 Storages	
3	Annex-A3 Virtualization/Cloud & Training	
4	Annex-A4 Commissioning and SLA	
5	Grand Total Amount in Pak Rupees inclusive of Taxes	

ANNEX-A1: COMPUTING NODES

Sr.	Description	Qty	A/U	Unit Cost in PKR without Tax	Unit Cost in PKR with Tax	Total amount in PKR with Tax
Computing Nodes						
1	A) Rack Mount Server with GPU compatibility having 2x Intel Xeon 6th Gen Processors, performance Cores >=48 (per Processor), >=2.4 GHz base frequency, cache >=48 MB, RAM DDR5 >= 1.5 TB per node with >=64GBmodules (6400 MT/s memory speed), 2x NVMe SSD Drives >=600 GB (for OS/Hypervisor) & >= 4 Disk Drivers NVME SSD >=4TB usable capacity per Node (server machine) 2x Port 25 GbE/each port NICs Per server node 2x Port 32 Gb/each port Fiber Channel HBA NICs per server node Dual Server Management ports per server node with all necessary cables, SFPs connectivities, software, licenses with 3x years OEM Support with license renewal and updation services.(Itemized Cost to be Quoted against sub-components)	3	No			
	B) Rack Mount server with each with GPU node cards loading, having 2 x Intel Xeon Scalable 6th Gen Processors or higher with Cores =>48 (per processor), >= 2.4 GHz base frequency, Cache>=48 MB, RAM DDR5 >= 1.5 TB per node with >=64GBmodules (6400 MT/s memory speed), 2x NVMe SSD Drives >=600 GB (for OS/Hypervisor) & >= 4 Disk Drivers NVME SSD >=4TB usable capacity per Node (server machine). 2x2 Port (4 ports) 25 GbE/each port NICs Per server node 2x Dual Port (4 ports) 32 Gb / each port Fiber Channel HBA NICs per server node Dual Server Management ports per server node, with all necessary	3	No			

Sr.	Description	Qty	A/U	Unit Cost in PKR without Tax	Unit Cost in PKR with Tax	Total amount in PKR with Tax
	cables, SFPs connectivities, software, licenses with 3x years OEM Support with license renewal and updation services.(Itemized Cost to be Quoted against the sub-components)					
2	GPU Card-I: NVIDIA-L4 or equivalent/higher GPU cards Each nodes with 1x NVIDIA L4 GPU or equivalent including necessary licenses for GPU virtualization (other applicable licenses) to enable NTC to provide GPU based services in Multitenancy (if applicable). Including OEM Support, license renewals and updation services for 03x years.	3	No			
3	GPU Card-II: NVIDIA-L40S or equivalent/higher GPU cards including necessary licenses for GPU virtualization (other applicable licenses) to enable NTC to provide GPU based services NTC to provide GPU based services in Multitenancy (if applicable),Including OEM Support, license renewals and updation services for 03x years.	2	No			
4	GPU Card-III: NVIDIA-H200-141 GB or equivalent/higher GPU cards including necessary licenses for GPU virtualization (MIG/multitenancy) to enable NTC to provide GPU based services in Multitenancy, Including OEM Support, license renewals and updation services for 03x years.	1	No			

Sr.	Description	Qty	A/U	Unit Cost in PKR without Tax	Unit Cost in PKR with Tax	Total amount in PKR with Tax
5	GPU Card-IV: NVIDIA-A100 80 GB or equivalent/higher GPU cards including necessary licenses for GPU virtualization (MIG/multitenancy) to enable NTC to provide GPU based services in Multitenancy, Including OEM Support, license renewals and updation services for 03x years.	3	No			
Annex-A1 Total amount in Pak Rupees inclusive of Taxes						

ANNEX-A2: STORAGES

Sr.	Description	Qty	A/U	Unit Cost in PKR without Tax	Unit Cost in PKR with Tax	Total amount in PKR with Tax
Storages (Primary and Backup Storages)						
1	Storage (SAN) NVME All-Flash (Unified) Type with RAW storage capacity of 350 TB (350 TB capacity without compression & Deduplication), with license of Dedup & Compression on RAW capacity. The offered Storage must be with all necessary cables, connectivities, software, licenses with 3x years OEM support with license renewal and updation services. (Itemized Cost to be Quoted against the sub-components)	1	No			
2	Storage (Backup/Archiving) with useable capacity of 50 TB. Including Disk types SAS/SATA to be configured and connected with primary storage and workload for backup/archiving/other necessary workload, including necessary licenses, connectivity and deployment/integration services, including 3x years OEM support with license renewal and updation services. (Itemized Cost to be Quoted against the components)	1	No			
3	Generation 7 dual power SAN switches 32 Gbps (with support of 64 Gbps) with 24 active ports and Transceiver SFPs as per details mentioned in specification	2	No			
Annex-A2 Total amount in Pak Rupees inclusive of Taxes						

ANNEX-A3: SOFTWARE AND TRAINING

Sr.	Description	Qty	A/U	Unit Cost in PKR without Tax	Unit Cost in PKR with Tax	Total amount in PKR with Tax
Software (Virtualization, Cloud)						
1	<p>Virtualization/Cloud Orchestration: Virtualization and Cloud solution for 6 Nodes (12 Sockets), including managed solution for Microservices (Kubernetes). Deployment, installation, testing, commissioning of cloud services including 3x years OEM support with license renewal and updation services.</p> <p>1)Core Cloud Infrastructure & Virtualization (IaaS all standard services and Kubernetes services)</p> <p>2)Unified Orchestration capable to manage multitenant heterogeneous environments</p> <p>3)Professional Services & Deployment & SLA (3 x years SLA effective from Operatiolization/PAC of project).</p>	1	Job			
Training						
2	OEM Certified Local Training spanning 5x Days each for compute, Storage and cloud with Certification vouchers for 10x Persons	1	Job			
Annex-A3 Total amount in Pak Rupees inclusive of Taxes						

ANNEX-A4: COMMISSIONING AND SLA

Sr.	Description	A/U	Qty	Unit Cost in PKR without Tax	Unit Cost in PKR with Tax	Total amount in PKR with Tax
1	Commissioning, Documentation and Launch					
1.1	Installation, Testing, commissioning of all components of the project with provision of project charter, plan documents, diagrams, shop drawings, as-built, LLDs, HLDs, and other Assets/design documents. Commissioning and onboarding of production services.	Job	1			
2	Service Level Agreement (as per SLA terms detailed in Annex-C)					
2.1	OEM support (ticket base support/License subscription and hardware warranty NBD for all the supplied equipment under the project for Year 1 & Year 2	Job	2			
2.2	Local partner support (Remote & On-site) for Year 1 & Year 2	Job	2			
2.3	OEM support (ticket base support/License subscription and hardware warranty NBD for all the supplied equipment under the project for Year 3 & Year 4	Job	2			
2.4	Local partner support (Remote & On-site) for Year 3 & Year 4	Job	2			
ANNEX-A4 Total amount in Pak Rupees inclusive of Taxes						

ANNEX-B: TECHNICAL SPECIFICATION
ANNEX-B1: COMPUTING NODES WITH GPU

Sr.	Items	Description	Total Marks	Bidder's Statement	
				FC/PC/NC	Bidders Quoted Feature Reference in Datasheet / manual
A Server without GPU Cards					
1	Processor	Rack Mount Chassis (Server Type A: with GPU capability only) having 2x Intel Xeon 6th Gen Processors, performance Cores >=48 (per Processor), >=2.4 GHz base frequency, cache >=48 MB.	M		
2	Processor Preference	Higher Processor specs / Cores capacity will be preferred	10		
3	Memory (RAM)	RAM DDR5 >= 1.5TB per node with >= 64GB modules (>=6400 MT/s Memory speed).	M		
4	Memory (RAM) Preference	Higher Memory speed / Capacity will be preferred	10		
5	Storage	2x Disk Drivers for OS/Hypervisor & >= 4 Disk Drivers NVME SSD >=4TB usable capacity per Node/server machine	M		
6	Storage Preference	Higher Disk speed/capacity will be preferred	10		
7	Network/Interfaces	2x Port 25 GbE/each port NICs Per server node 2x Port 32 Gb / each port Fibre Channel HBA NICs per server node Dual Server Management ports per server node All required cables, transceivers/SFPs, and accessories need to be included	M		

Sr.	Items	Description	Total Marks	Bidder's Statement	
				FC/PC/NC	Bidders Quoted Feature Reference in Datasheet / manual
8	Networking Preference	Higher Interface speed/Quantity of interfaces will be preferred.	10		
B Server With GPU Cards					
9	Processor	Rack Mount Chassis (Type B with GPU compatibility and GPU cards loading) having 2x Intel Xeon 6th Gen Processors, performance Cores >=48 (per Processor), >=2.4 GHz base frequency, cache >=48 MB.	M		
10	Processor	Higher Processor specs / Cores capacity will be preferred	10		
11	Memory (RAM)	RAM DDR5 >= 1.5 TB per node with >= 64GB modules (>=6400 MT/s Memory speed).	M		
12	Memory (RAM) Preference	Higher Memory speed / Capacity will be preferred	10		
13	Storage	2x NVMe SSD Drives >=600 GB (for OS/Hypervisor) & >= 4 Disk Drivers NVMe SSD >=4TB usable capacity per Node/server	M		
14	Storage Preference	Higher Disk speed/capacity will be preferred	10		
15	Networking	2x Dual Ports (4 ports total) 25 GbE/each port NICs Per server node 2x Dual Port (4 ports total) 32 Gb / each port Fibre Channel HBA NICs per server node Dual Server Management ports per server node All required cables, transceivers, SFP and accessories need to be included	M		

Sr.	Items	Description	Total Marks	Bidder's Statement	
				FC/PC/NC	Bidders Quoted Feature Reference in Datasheet / manual
16	Networking Preference	Higher Interface speed/Quantity of interfaces will be preferred.	10		
17	GPU Card I	NVIDIA-L4 for or equivalent/higher GPU cards Each nodes with 1x NVIDIA L4 GPU or equivalent including necessary licenses for GPU virtualization to enable NTC to provide GPU based services in Multitenancy, OEM Support, license renewals and updating services for 03x years).	M		
18	GPU Card II	NVIDIA-L40S or equivalent/higher GPU cards including necessary licenses for GPU virtualization (other applicable licenses) to enable NTC to provide GPU based services in Multitenancy (if applicable), OEM Support, license renewals and updating services for 03x years)	M		
19	GPU Card III	NVIDIA-H200 or equivalent/higher GPU cards including necessary licenses for GPU virtualization (other applicable licenses) to enable NTC to provide GPU based services,(OEM Support, license renewals and updating services for 03x years)	M		
20	GPU Card IV	NVIDIA-A100 or equivalent/higher GPU cards including necessary licenses for GPU virtualization (MIG) to enable NTC to provide GPU based services in Multitenancy,(OEM Support, license renewals and updating services for 03x years)	M		

Sr.	Items	Description	Total Marks	Bidder's Statement	
				FC/PC/NC	Bidders Quoted Feature Reference in Datasheet / manual
21	Deployment, Software, Support and Services	All necessary software, Firmware, Driver etc including management, monitoring and logging licenses for server nodes and GPU cards with one time deployment, commissioning & 3x years (post PAC) OEM support with license renewal and updation services	M		
Total Marks			80		
Note	<p>Bidder's Statement column must be properly filled to clearly state the available feature/compliance as fully complied (FC), partially complied (PC) or not complied (NC) or better feature is available, Tick the relevant box. The bidder must Fully comply to all Mandatory clauses (Denoted as "M" in Marks column) failing to do so will Technically disqualify the bidder, Moreover, the bidder should score 75 % or more of the total marks given in "Marks" column. The compliance of above specification must be supported by data sheet of product to certify the Compliance.</p>				

ANNEX-B2: NVMe STORAGE

Sr.	Items	Description	Total Marks	Bidder's Statement	
				FC/PC/NC	Bidders Quoted Feature Reference in Datasheet / manual
1	Architecture:	Proposed Modular All Flash storage system must contain dual Active/Active Controller, based on CISC or RISC processor architecture	M		
2		Intel/CISC processor based controllers	15		
3		Minimum, 32 cores per controller and 64 cores overall	M		
4		Higher than 32 cores per controller	10		
5	Disk Type	Should have NVME-TLC or better performance/technology disk type as per industry standards	M		
6	Storage Capacity	Should provide at least 350 TB RAW capacity of SAN without deduplication and compression, with all requisite licenses.	M		
7		Per Disk capacity =15TB	10		
8	Hot-Spare Disk	Should have global hot-spares disks as recommended by OEM (System need to work even in case of 2x disk drives failure with no impact on user capacity)	15		
9	Cache	At least 384 GB DRAM cache per controller, (Total minimum 768 GB for complete storage)	M		

Sr.	Items	Description	Total Marks	Bidder's Statement	
				FC/PC/NC	Bidders Quoted Feature Reference in Datasheet / manual
10		More than 384 GB DRAM cache per controller, (More than 768 GB for complete storage)	15		
11	RAID Configuration	Proposed storages should support Distributed RAID/Dynamic RAID, RAID6 etc	M		
12	Backend Connectivity	End-to-end NVME Backend connectivity for disks drives	M		
13	Frontend Ports	Minimum 2 x 32Gbps FC Ports for FC connectivity per controller.	M		
14		Ethernet ports 4x 10 Gbps connectivity, 1 Gbps (Management port) and per controller	M		
15	Protocol Support	Should support FC, iSCSI, NFS, NVMe/TCP, NVMe/FC etc (Please specify all protocols)	5		
16	High Availability	Redundant disk enclosure connectivity with Redundant (front-end & back-end) interfaces on each controller, Redundant fans & power supplies for controllers & disk enclosures.	M		
17	Deduplication / Compression	Must have both in-line and post process deduplication & compression controller based, with compression module	M		
18	Data Encryption	Support Data at Rest Encryption solution for all drives.	M		

Sr.	Items	Description	Total Marks	Bidder's Statement	
				FC/PC/NC	Bidders Quoted Feature Reference in Datasheet / manual
19	Storage Virtualization	Should provide storage virtualization and containerization license	M		
20	Storage Features	Thin Provisioning, volume copy, Compression and Deduplication, SAN to SAN FC over IP, FC and IP based Sync/ Async local/remote replication	M		
21		Immutable snapshot and secure replication in case of Cyber Threat / equivalent from same OEM	M		
22		Storage should provide 100% data availability Guarantee in case of failure	M		
23	Integration & Support	Should support integration and provisioning from VMWare, Redhat Openshift, Openstack, etc, necessary drivers for containers (e.g CSI Drivers), file storage etc to be included	M		
24		Syslog integration with SIEM solution	M		
25		MFA on administrative login should be provisioned (MFA for 10 users with necessary integrations with soft tokens till duration of support period)	10		
26	Storage Resource Pooling	Should have ability to expand capacity or reconfiguration of LUNs, without downtime and outage.	M		
27	Quality of Service	Proposed storages / solution should support Quality of Service (QoS) for prioritization of storage resources/services	M		

Sr.	Items	Description	Total Marks	Bidder's Statement	
				FC/PC/NC	Bidders Quoted Feature Reference in Datasheet / manual
28	Monitoring & Management Software	Should provide management software of the proposed system, with web-based GUI interface capable of providing real time monitoring and able to generate customized reports from real time and historical performance data for analysis, trending and capacity utilization trends.	M		
29	Licenses	Should provide all required license (perpetual) of proposed Solution of regardless of capacity delivered capacity, no additional licenses should be required for any upgrade (storage virtualization, deduplication, compression, thin provisioning, cloning, replication (Sync/Async), snapshot, management and monitoring software's) with 03 years support and free of cost software renewals & upgrades.	M		
30	Support & Warranty	Should provide Three (03) years support 24 x 7 with NBD parts replacement and warranty services, Should provide future software / firmware releases free of cost and updates / upgrades them as recommended by the OEM during the 3 years period for the procured solution.	M		
31	Product Life Cycle	Proposed solution should not be declared End of Life and Support for at least 5 years from Acceptance.	M		

Sr.	Items	Description	Total Marks	Bidder's Statement	
				FC/PC/NC	Bidders Quoted Feature Reference in Datasheet / manual
32	IOPS	IOPS need to be shared by OEM certified document, actual Iops of the proposed solution based on, I/O block size=8K Byte, RAID=6, Read%=60, write%=40, and need to be maintained in support period.	10		
33	Data transfer M/B	data transfer rate of the proposed solution based on ,I/O block size=8K, RAID=6, Read%=60, write%=40.	10		
Total Marks			100		
Note	Bidder's Statement column must be properly filled to clearly state the available feature/compliance as fully complied (FC), partially complied (PC) or not complied (NC) or better feature is available, Tick the relevant box. The bidder must Fully comply to all Mandatory clauses (Denoted as "M" in Marks column) failing to do so will Technically disqualify the bidder, Moreover, the bidder should score 75 % or more of the total marks given in "Marks" column. The compliance of above specification must be supported by data sheet of product to certify the Compliance.				

ANNEX-B3: BACKUP STORAGE

Sr.	Items	Description	Total Marks	Bidder's Statement	
				FC/PC/NC	Bidders Quoted Feature Reference in Datasheet / manual
1	Architecture:	Modular Unified Hybrid Storage System Backup Storage (Archive, backup/ cold data Storage)	M		
2		Active/Active Dual Controller High Availability (HA) Pair	M		
3		Controller chassis form factor: 2U with >=12 internal drives	M		
4		Drive Scalability: >=100 drives (Must supports SSD, NL-SAS, SAS, and mixed drive types) per HA pair	M		
5	Disk Type	NL-SAS drives for RAID/Data	M		
7	Storage Capacity Preference	Higher Storage capacity, better disk capacity type will be preferred	10		
8	Hot-Spare Disk	Additional 2 x NL-SAS drives, excluding data/RAID drives, more Drives will be preferred	10		
9	Cache	48GB memory per Controller	M		
10	Cache (Preference)	Higher than 48GB Memory will be preferred	20		
11	RAID Configuration	RAID 6, Dual and Triple parity RAID support	M		

Sr.	Items	Description	Total Marks	Bidder's Statement	
				FC/PC/NC	Bidders Quoted Feature Reference in Datasheet / manual
12	RAID Configuration	Higher supported RAIDs will be preferred	5		
13	Backend Connectivity	At least 12Gbps backend connectivity	M		
14	Frontend Ports	2 x 32 Gbps optical interfaces per controller or 4x25Gbps iSCSI optical interfaces per controller	M		
16	Frontend Ports	More/Higher ports will be preferred	5		
17	Protocol Support	Protocols and license as per provided solution interfaces, higher/better protocols will be preferred	5		
18	Preference Encryption, Deduplication / Compression	Higher values of compression, deduplication, Worm-in encryption will be preferred	5		
19	Storage Virtualization /Containerization	Must support storage virtual machines, and Storage Containerization services (necessary drivers/software to be included)	5		
20	Storage Features	Anti-ransomware built-in protection for both preemption and post-attack recovery. Logically air-gapped and Immutable Snapshot copies	5		

Sr.	Items	Description	Total Marks	Bidder's Statement	
				FC/PC/NC	Bidders Quoted Feature Reference in Datasheet / manual
22		Including Multi-factor authentication (out of band 2FA), and role-based access control, with all required hardware/software.	5		
23		Operating support for all leading operating systems (including but not limited to M/S Windows, RHEL, OEL etc) and virtualization (including but not limited to Vmware, Redhat, OpenStack and Other industry standard virtualization/Cloud solutions and others). Preference will be given to more integratable solution	5		
24	Storage Resource Pooling	Should have ability to expand capacity or reconfiguration of LUNs, without downtime and outage.	M		
25	Quality of Service	Proposed storages / solution should support Quality of Service (QoS) for prioritization of storage resources/services	5		
26	Monitoring & Management Software	Must have built in storage management software for Operational simplicity with a streamlined setup process and intuitive management through the GUI, CLI and REST APIs.	M		
27	Licenses	Full proposed capacity licenses must be included	M		
28	Licenses (Preference)	Preference will be given to product with more licenses and features	5		

Sr.	Items	Description	Total Marks	Bidder's Statement	
				FC/PC/NC	Bidders Quoted Feature Reference in Datasheet / manual
29	Support & Warranty	3x years OEM 24/7/365, NBD part replacement support with license renewal, security patches and Firmware upgrade services	M		
30	Product Life Cycle	The proposed storage solution should not reach End of Sale (EoS) for at least five years from the date of sale.	M		
31	IOPS	IOPS need to be shared by OEM certified document, actual Iops of the proposed solution based on, I/O block size=8K Byte, RAID=6, Read%=60, write%=40, and need to be maintained in support period.	5		
32	Data transfer M/B	data transfer rate of the proposed solution based on ,I/O block size=8K, RAID=6, Read%=60, write%=40.	5		
Total Marks			100		
Note	Bidder's Statement column must be properly filled to clearly state the available feature/compliance as fully complied (FC), partially complied (PC) or not complied (NC) or better feature is available, Tick the relevant box. The bidder must Fully comply to all Mandatory clauses (Denoted as "M" in Marks column) failing to do so will Technically disqualify the bidder, Moreover, the bidder should score 75 % or more of the total marks given in "Marks" column. The compliance of above specification must be supported by data sheet of product to certify the Compliance.				

ANNEX-B4: SAN SWITCHES

S#	Items	Description	Total Marks	Bidder's Statement	
				FC/PC/NC	Bidders Quoted Feature Reference in Datasheet / manual
1	Quantity	Number of (02) Gen 7 SAN switches.	M		
2	Port per Switch	24 ports activated with 32Gbps SFP (with support for 32Gbps, 64Gbps) and all required license having key features i.e. NPIV, SFPs for all Ports.	M		
3	ISL connectivity & management	Should provide required ISL license for all switches, Should provide Ethernet / Serial port for management	M		
4	High Availability	Dual Redundant Power supplies for Aisle containment (as per solution), and all components need to be redundant (e.g connectivity, Fan etc)	M		
5	Management & Monitoring	a. Should provide web management through http / https and command line management through SSH	M		
6		b. Should provide real time utilization, health status and performance bottleneck in SAN.	M		
7		c. Should provide role based user access on switch for each user.	M		
8	Licenses	Should provide licenses for all functionality and software offered with this solution with free of cost	M		
9	Compatibility	Switches firmware should be certified with proposed storage system and existing infrastructure	M		

S#	Items	Description	Total Marks	Bidder's Statement	
				FC/PC/NC	Bidders Quoted Feature Reference in Datasheet / manual
10	Cables & accessories	Should provide rack mounting kit and power cables for installation of switches.	M		
11	Support & Warranty	a. Should provide Three (03) years 24 x 7 NBD warranty with subscriptions, parts, labour and support.	M		
12		b. Should provide future software / firmware releases free of cost and updates, renewals, upgrades them as recommended by the OEM	M		
13	Product Life Cycle	Proposed solution should not be declared End of Life and Support for at least 5 years from Acceptance.	M		
Note	Bidder's Statement column must be properly filled to clearly state the available feature/compliance as fully complied (FC), partially complied (PC) or not complied (NC) or better feature is available, Tick the relevant box. The bidder must Fully comply to all Mandatory clauses (Denoted as "M" in Marks column) failing to do so will Technically disqualify the bidder, Moreover, the bidder should score 75 % or more of the total marks given in "Marks" column. The compliance of above specification must be supported by data sheet of product to certify the Compliance.				

ANNEX-B5: CLOUD AND VIRTUALIZATION

Sr.	Component & Scope (Subscriptions)	Compliance	Bidder's Statement	
			(FC/PC/NC)	Quoted Feature Reference in Data Sheet
1	<p>Cloud Infrastructure & Virtualization (IaaS) The solution need to be on-premises self-hosted Cloud in multitenancy. Solution need to be in Cluster (high availability), nodes for cloud management (separate management nodes if required for deployment of solution to be quoted in addition to workload nodes)</p>	Mandatory		
i	<p>Hypervisor/Virtualization hosts for Virtual Machines (VMs). Must support standard virtualization features, including compute, storage, Network (internet and intranet services), Load balancing, auto-scaling, VPN, Basic Backup utility (including snapshot based backup), Monitoring and other network virtualization features in multitenancy to enable NTC provide services in IaaS Model. Enterprise Kubernetes solution including all standard features of Kubernetes for Container services, Backup/ Monitoring/ Logging etc. Solution need to support restful & open API. Solution will include IAC (Infrastructure as a Code), and support of DevOps mechanism using scripting, ansible, terraform etc.</p>	Mandatory		
ii	<p>Backup: Application Aware Backup, capable to integrate with hypervisor, for entire solution (on all server processors i.e 12), solution to support backup life-cycle policies, including immutability and encryption of backup to ensure security</p>	Mandatory		

Sr.	Component & Scope (Subscriptions)	Compliance	Bidder's Statement	
			(FC/PC/NC)	Quoted Feature Reference in Data Sheet
	of the backup data. Must support integrated Disaster Recovery functionality in the solution.			
ii	GPU Virtualization License (for all compute machine where applicable to be offered with cloud offering as a solution. Solution need to be integrated with GPU, hardware of the project.	Mandatory		
2	Unified Orchestration capable to manage multitenant heterogeneous environments			
i	Unified Management in multitenancy, and necessary access controls including IAM & Security (Identity and Access Management (IAM). Must deploy and integrate with Directory Services (LDAP/AD) as per solution requirement.	Mandatory		
ii	Metering (Built-in module for metering a(online/offline) supporting various service models)	Mandatory		
3	Professional Services & Deployment & SLA (3 x years SLA including all licenses validity effective from PAC of project) i.e. One Year Standard Warranty and Two Years SLA.	Mandatory		
i	OPTIONAL: Year wise support for Year 4 & 5			

Sr.	Component & Scope (Subscriptions)	Compliance	Bidder's Statement	
			(FC/PC/NC)	Quoted Feature Reference in Data Sheet
ii	Deployment, Design & Validation: Conduct design workshops, create Low-Level Design (LLD) documentation, and perform pre-deployment environment validation, Deploy the IaaS, including necessary repositories (Image Registries/Artifact Repositories), complete solution deployment capable to onboard services through Cloud setup. Provide tenant onboarding documentation and operational handover.	Mandatory		
Note: All Optional items must be quoted, NTC will have the discretion to opt the optional mentioned items				
Note	Bidder's Statement column must be properly filled to clearly state the available feature/compliance as fully complied (FC), partially complied (PC) or not complied (NC) or better feature is available, Tick the relevant box. The bidder must Fully comply to all Mandatory clauses (Denoted as "M" in Marks column) failing to do so will Technically disqualify the bidder, Moreover, the bidder should score 75 % or more of the total marks given in "Marks" column. The compliance of above specification must be supported by data sheet of product to certify the Compliance.			

ANNEX-C: SERVICE LEVEL AGREEMENT

1 SCOPE OF WORK

This SLA covers OEM support and partners support for the period of Two (02) Years SLA with the option of further extension of Two (02) Years for all the equipment and licenses provided under the scope of the project.

2 DETAILS OF SUPPORT MECHANISMS UNDER SLA

- a. Advanced maintenance support and hardware replacement for faulty components, including on-site visits in case of critical issues resolution, physical on-site support, and seeking online support if required.
- b. Provide 24x7 Help Desk & NBD (Next Business Day) for each product for support mechanism (separate warranty time/resolution time may be accepted for GPU hardware only)
- c. The details of the support document should be provided for the evaluation of the project and for the agreement of the SLA/maintenance agreement.
- d. Detailed mechanisms for the provision of support need to be provided with the bid.
- e. Contractor will be responsible for smooth SLA operations.

3 SEVERITY LEVELS

3.1 **Severity One (Urgent)**

A severity one (1) issue is a catastrophic production problem that may severely impact the Required Service/Solution Availability. In such a case, part or all of the Required Service/Solution production components are down or not functioning; loss of production data, and no procedural workaround exists.

Examples of Severity one cases: DB becoming corrupted or inaccessible, or a service-affecting component of the firewall is faulty.

3.2 **Severity Two (High)**

A severity two (2) issue is a problem where the Required Service/Solution is functioning but in a severely reduced capacity. The situation is causing a significant impact to portions of business operations and the productivity of Required Service\Solution. The system is exposed to potential loss or interruption of service. Example of Severity two cases: one node of the cluster becomes down or unavailable, inability to update DB by entities representatives or solution administrators, or inability to synchronize data between DB nodes, or a fault in a hardware component resulting in reduced capacity/performance functionality.

3.3 **Severity Three (Medium)**

A severity three (3) issue is a medium-to-low impact problem which involves partial non-critical functionality loss one which impairs some operations but allows the Required Service\Solution users/administrators to continue to function. This may be a minor issue with limited loss or no loss of functionality or impact to the client's operation and issues in which there is an easy circumvention or avoidance by the end user.

3.4 **Severity Four (Low)**

Important problem but it can wait no loss of functionality or impact to the client's operation and issues in which there is an easy circumvention or avoidance by the end user.

Table 1: Response, Resolution, times for different severity levels

S.No	Severity	Response Time	Resolution Time
a	1	1 hour	8 hours
b	2	3 hour	24 hours
c	3	5 hour	48 hours
d	4	12 hour	72 hours

* Support required on 24 x 7 basis

Note: The Severity will be decided and informed by NTC, and vendor/support team will be informed through the support/Log and also via call to the KAM (Key account Manager) who will be the POC for replies/updates as and when required by NTC.

Where:

4 RESPONSE AND RESOLUTION

4.1 **Response Time**

Time taken to acknowledge receiving of reported incident calculated from the time sending an email explaining the incident, opening a ticket on Contractor ticketing system, or conducting a phone call with the assigned support engineer by the Contractor or Contractor's first line of support.

4.2 **Resolution Time**

Time taken to solve the reported incident completely. Resolution Time is calculated from the end of the defined response time for each severity level as shown in the above table.

5 ESCALATION PROCEDURE AND PENALTIES

For incidents classified as Severity Level 1, 2, 3 & 4, if Contractor:

5.1 **Passed the Response Time:** First level of escalation will be applied by notifying Contractor's Technical Support Manager or the assigned contact person.

5.2 **Passed the Resolution Time:** NTC is entitled to fix the problem and to apply penalty on the M/S Bidder Pakistan in accordance with the following criteria in the below table and all costs incurred by NTC for fixing will be charged to the M/S Bidder Pakistan.

Table 2: Penalties

Severity	Definition	Penalty
1	Must be done, essential to business survival. Business can't continue	A penalty of 10 % of the monthly SLA invoice shall be applied for each hour pass the resolution time. If delay continues, for more than three days; then 3rd party will be called to fix the problem and cost of the same will be borne by the contractor for respective site.

Severity	Definition	Penalty
2	Should be done, near essential to business survival.	A penalty of 6% of the monthly SLA invoice shall be applied for each day pass the resolution time for respective site. This penalty will be applied for the maximum duration of 4 days; after that, 3rd party will be called to fix the problem.
3	Could be done, high benefit to business if time and resources are available.	A penalty of 4% of the monthly SLA invoice shall be applied for each day pass the resolution time for respective site. This penalty will be applied for the maximum duration of 5 days; after that, 3rd party will be called to fix the problem.
4	Important problem but can wait	A penalty of 2% of the monthly SLA invoice shall be applied for each day pass the resolution time for respective site. This penalty will be applied for the maximum duration of 5 days; after that, 3rd party will be called to fix the problem.
Maximum penalty of 10% of the monthly SLA invoice shall be imposed.		

6 REPORTING, HEALTH CHECKS OF THE PROVIDED SOLUTION

The provided equipment will be checked periodically by M/S Bidder Pakistan, and a quarterly report will be submitted to NTC that will mention the following:

- a. Health Check and summary of the product issues.
- b. Utilization/consumption details of the Hardware/Software.
- c. Performance analysis of the hardware/software and possible measures to minimize the faults in the next quarter.
- d. Summary of the resolved complaints and recommendations to minimize the faults, with timelines of fault starting and fault resolution.
- e. Updates of the provided software versions and health checks of the tools, through reports.
- f. The compliance status of the applicable controls standards to help NTC meet the standards and audit requirements.

6.1 Remote Troubleshooting

After receiving a service request for rectifying a network or system fault, M/S Bidder Pakistan engineers will first analyze and handle the fault remotely and then

rectify it in the shortest possible time. There are two methods of remote troubleshooting: telephone support and remote access.

6.2 Telephone Support

After receiving a service request from NTC, M/S Bidder Pakistan engineers will respond to NTC through phone calls within the time period defined in the Service Level Agreement (AGREEMENT) and help to analyze and locate the problem. Then the engineers will provide a solution and guide NTC in implementing the solution

6.3 Remote Access

If the fault or problem cannot be handled through telephone support, with necessary permissions, M/S Bidder engineers will log in to the faulty equipment through a remote terminal to investigate the problem and collect data. After analyzing the causes, the engineers will rectify the issue. If necessary; the engineers will operate the equipment remotely.

6.4 Software Updates

To ensure that the equipment purchased by NTC, M/S Bidder will provide software correction patches. All software patches have been verified and improved in the practical application environment or a simulated trial network and can remove or correct hidden problems in the original licensed software. Software updates installation for 3 years will be provided and a quarterly check report will be provided from M/S Bidder that would include product stability in the past quarter duration, updates of the installed versions, and satisfaction of the provided features.

Note: OEM Support department will arrange the kickoff meeting and explain all complete procedure from ticket registering to closure of the ticket.

6.5 Installation and Commissioning of New Customers

Contractor shall be responsible for any change in the racks arrangement for accommodating new customer requirement including the network power cabling, industrial sockets, circuit breakers replacement, racks adjustments and interconnectivity etc.

6.6 Technical Reports

Contractor will provide the monthly maintenance reports (to be submitted after each monthly maintenance activity) performed and faulty reports as required by the NTC and shared between NTC technical team and contractor service teams as necessary. Similarly reports required by NTC higher management regarding the Data Center system status and issues will be provided by the contractor as and when required.

6.7 Escalation Matrix from Bottom to Top [OEM]

Name	Position	Contact Number	Email ID [OEM]
	Head of Organization		
	ASM		

	Technical Director		
	KAM/ PM		
	24x7 Help Desk/		

ANNEX-D: COMMERCIAL COMPLIANCE STATEMENT

Clause.#	Description	Fully Complied	Not Complied	Partially complied
1	Invitation To E-Bids			
2	General Introduction			
3	Project Objectives			
4	Scope Of Work			
5	Qualification Conditions Of Bidders			
6	Cost Of Tendering			
7	Clarifications Of Tender Documents			
8	Amendment Of Tender Documents			
9	Preparation Of Bid			
10	Language Of Bid Documents			
11	Price			
12	Bid Security / Earnest Money			
13	Validity Of Bids			
14	Deadline For Submission Of Bid			
15	Modification & Withdrawal Of Bid			
16	Opening Of Bid			
17	Responsiveness Of Bids			
18	Evaluation Criterion For Most Advantageous Bidder			
19	Clarifications / Corrections Of Bid			
20	Commercial Compliance Statement			
21	Variation Order			
22	Award Criteria & NTC's Right			
23	Notification Of Award & Signing Of Contract Agreement			
	CONTRACT CONDITIONS			
1	Performance Security			
2	Contractor's Responsibilities			
3	NTC's Responsibilities			
4	Transportation / Packing			
5	Time For Completion			
6	Standard Warranty			
7	Liquidated Damages			
8	Licenses/Subscription Services			
9	Provisional Acceptance Certificate			
10	Nil Discrepancy Certificate			
11	Service Level Agreement			
12	Trainings			
13	Terms Of Payment			
14	Contractor's Negligence			

Clause.#	Description	Fully Complied	Not Complied	Partially complied
15	Final Acceptance Certificate			
16	Default By Contractor			
17	Arbitration And Applicable Law			
18	Force Majeure			
19	Termination For Insolvency			
20	Termination For Convenience			
21	Project Director / Engineer In Charge			
22	Debarment / Blacklisting Of Firm			
23	Repeat Order			
24	Integrity			
25	Project Management Team			
25	Declaration Of Beneficial Owners' Information			

ANNEX-E: BID SECURITY FORMAT

Bank Guarantee No.-----
Dated at Islamabad, the -----
Amount _____
Validity _____

To,

THE MANAGING DIRECTOR,
NATIONAL TELECOMMUNICATION CORPORATION
HEAD QUARTERS G-5/2
ISLAMABAD.

Dear Sir,

WHEREAS M/S _____ (hereinafter called the Tenderer) have requested us through _____ Bank Ltd., to furnish Bid Security by way of Bank Guarantee in your favour in the sum of _____ (IN FIGURE) _____ (IN WORDS) against your Tender Notice No. _____ dated _____ for supply / installation of _____.

WE HEREBY AGREE AND UNDERTAKE:

- i. To make unconditional payment _____ to you on demand without further question or reference to the Tenderer in case of withdrawal or modification of bid or any default or non-execution of the Contract or refusal to accept order by the Tenderer from the date of opening of bids until the expiry of the validity of their offer,
- iii. To keep this guarantee in full force from (date) _____ upto _____ (date) _____ the date until which the Tenderer's offer is valid.
- iii. To extend the period of guarantee if such extension be necessary beyond the date stated in para (ii) and as so desired by the tenderer.

Any claim arising out of this guarantee must be lodged with this Bank within the period the guarantee is valid and before the date of its expiry. After this date the guarantee will be considered null and void and should be returned to us.

Yours faithfully,

Name of the Bank: _____
Authorized officer's Signature & Seal: _____

ANNEX-F: PERFORMANCE BOND FORMAT

Bank Guarantee No.-----
Date of Issue -----
Valid upto -----
Value (Rs.) -----

FROM: _____
TO,

THE MANAGING DIRECTOR,
NATIONAL TELECOMMUNICATION CORPORATION
HEAD QUARTERS G-5/2
ISLAMABAD.

SUBJECT: B/G AND DATE FOR _____ ON BEHALF OF _____ FOR
DUE AND FAITHFUL PERFORMANCE ORDER NO. _____
DATED _____.

Whereas M/s _____ (hereinafter called the Supplier)
have requested us to furnish a Bank Guarantee in your favour in the
sum _____ (IN WORDS) _____ as performance security
against order No. _____ dated _____ to be concluded between the
Supplier and National Telecommunication Corporation HQs G-5/2 Islamabad.

WE HEREBY AGREE:

- 1). To make an un-conditional payment of _____ to you on demand without any further question or reference to the Supplier upon failure of the Supplier to perform the Order for which you will be the sole judge.
- 2). To keep this guarantee valid in full force from this date upto the time of the due and faithful completion of the Order under reference (the schedule of implementation shall be as described in the Purchase order and its subsequent amendments) or till _____ whichever date is later. The faithful completion of the order by the Supplier will be intimated by the NTC.
- 3). To extend the period of the enforceability of this guarantee if such extension be necessary or desired by you of us. All claims thereunder must be submitted to the Bank of _____ on or before the expiry date mentioned in this guarantee are the date mentioned in its extensions issued from time to time, after which this guarantee will become null and void and should be returned to us. Irrespective of its return, we shall consider ourselves fully discharged from any obligation there under after the said expiry date.

Dated This Day of _____

Authorized Signature:

& Seal of bank

Witness: _____

Sworn & Sign before me

this day of.... ..
by. _____

ANNEX-G: DECLARATION OF BENEFICIAL OWNER INFORMATION

Declaration of Ultimate Beneficial Owners Information for Public Procurement Contracts

1. Name
2. Father's Name/Spouse's Name
3. CNIC/NICOP/Passport no.
4. Nationality
5. Residential address
6. Email address
7. Date on which shareholding, control or interest acquired in the business.
8. In case of indirect shareholding, control or interest being exercised through intermediary companies, entities or other legal persons or legal arrangements in the chain of ownership or control, following additional particulars to be provided:

1	2	3	4	5	6	7	8	9	10
Name	Legal form (Company/Limited Liability Partnership/ Association of Persons/Single Member Company/ Partnership Firm/ Trust/ Any other individual, body corporate (to be specified))	Date of incorporation/ registration	Name of registering authority	Business Address	Country	Email address	Percentage of shareholding, control or interest of BO in the legal person or legal arrangement	Percentage of shareholding, control or interest of legal person or legal arrangement in the Company	Identity of Natural Person who ultimately owns or controls the legal person or arrangement

9. Information about the Board of Directors (details shall be provided regarding number of shares in the capital of the company as set opposite respective names).

1	2	3	4	5	6	7	8
Name and surname (In Block Letters)	CNIC No. (in case of foreigner,	Father's/ Husband's Name in full	Current Nationality	Any other Nationality (ies)	Occupation	Residential address in full or the registered/ principal office address	Number of shares taken by each subscriber (in figures and words)

	Passport No)					for a subscriber other than natural person	
			Total number of shares taken (in figures and words)				

10. Any other information incidental to or relevant to Beneficial Owner(s).

Name & signature

(Person authorized to issue notice on behalf of the company)