NL-1

GOVERNMENT OF PAKISTAN

HQ NATIONAL LOGISTICS CORPORATION

INVITATION TO TENDER

FOR ESTABLISHMENT OF NTOS AT 3 x BORDER TERMINAL ON FOR TAFTAN, GABD AND SOST BORDER TERMINAL (LOT WISE BASIS)

INSTRUCTION TO TENDERERS - WORDS OF CAUTION

1. **Participation of Tender**. NLC invites bids from qualified vendors for the Establishment of NTOS AT 3 x Border Terminal on For Taftan, GABD And Sost Border Terminal. The tender can be participated by following: -

   a. **OEMs (Original Equipment Manufacturers)**

   b. **OEM Authorized Dealers / Re-Sellers having OEM Authorization Letter with sustained financial capability**

2. **Eligibility / Bid Qualification Criteria**. The bidder must prove his eligibility by completing the Bid Qualification Criteria as following.

Ser	Check List	Yes / No
a.	Tender Fee	
b.	Bid Security	
c.	Copy of NTN / STRN and Active Tax Filler with 100% compliance	
d.	Certificate to compliance to the GSR	
e.	Authorization Letter from OEM	
f.	Complete Tech Data of Equipment	
g.	90 x Days Offer Validity	
h.	Confirmation to Delivery Period	
i.	Comparison Chart (NLC Specification and Firm Offer)	
j.	Not Blacklisting Affidavit	
k.	Certificate to accept all conditions of tender	
l.	List of Major Clients	

m.	Hierarchy of the firm along with portfolio of owner & top management be attached	
n.	Manufacturing Authorization Letter	

3. **Non-Turnkey Solution**.

   a. National Logistics Corporation is in process of Establishing NTOS and network applications in three border terminals including Taftan, GABD and Sost.

   b. The work has been divided into two separate Lots for procurement on Turnkey basis.

   c. The Works mainly comprise the following: -

Ser	LOT	Equipment
(1)	LOT 1	Servers, Switches and Firewalls
(2)	LOT 2	Smart Rack, Passive work includes OFC, cabinets, CAT-6 cable, civil work, renovation work and end user equipment

   d. Firm can apply for any one LOT or both LOTs. Technical evaluation of each LOT will be carried out separately.

4. **Special Conditions**

   a. Bidder must provide the Authorization Letter from OEM / Authorize Dealer / Re-Seller

   b. Quoted items / equipment should be Branded and Brand New.

   c. Firms are only allowed to quote only 1 x variant / model of item being quoted.

   d. Offer should also accompany complete technical data of the equipment.

   e. Firms must provide all relevant import documents to the purchaser (If Required).

   f. Offers must be prepared on firm's letter head, accompanied by the schedule to tender duly completed / signed / stamped by authorized executive (by name) of the firm without which the offer will not be entertained.

g. In case, any firm fail to supply the tendered store as per the Letter of Acceptance / contract Agreement, The NLC has the right to take punitive action against defaulter firm that include confiscation of its bid security, Performance Bank Guarantee and ban to participate in the tender etc.

h. The bidder must be an authorized supplier and integrator of respective OEM.

i. JV and Sub Letting is not Allowed. Only single legal entities independently meeting all eligibility and technical criteria will be considered for evaluation

j. Demonstrated experience in executing similar projects, with at least one reference of similar project.

k. Only those firms will be considered who has previous experience of similar project as a single vendor. Work executed as JV partners and carried out by subletting will not be considered.

l. On-site survey may be carried out prior to submission of bids.

m. **Pre-Bid Meeting.** A Pre-bid meeting will be held at HQ NLC, Harding Road, Support Branch, Conference Room on **16 Mar 2026** at **1100** hours to clarify any queries, questions and corresponding replies (if any).

5. **Scope of Work**

a. It is a LOT wise turnkey project and it is required that the bidder should survey the site before submission of bids. The submitted bid will cover all services, devices or items, mentioned or unmentioned that are required for completion of the concerned LOT of the project as per specification and accepted standard / best practices required for such projects.

b. Establishment/ Renovation one IT Room/ container at each site.

c. Provisioning of equipment and services for each border site.

d. OFC for complete premises on each site.

e. Supply, installation, testing and commissioning of servers, switches, firewalls and smart cabinets for each border site.

f. Installation, testing and commissioning of servers at headquarter NLC Rawalpindi and border terminals.

g.   The selected bidder will be responsible for the supply, installation, Integration, testing and commissioning of all equipment and services, provided against this Tender.

h.   Selected bidder must ensure that the supplied equipment is fully operational, new and performs properly and meet Tender Technical Specification.

i.   At the time of installation and commissioning, selected bidder must provide comprehensive documentation of system/equipment deployed including system manuals, Electrical & Network diagrams, labeling, training and training manuals, etc.

j.   Warranty & Support: Standard onsite warranty & support as offered by manufacturer or one year (whichever is higher).

k.   Technical information of LOT-1 and LOT-2 is attached as Annexure A.

6.   **Rejection of Bid**. A bid will be rejected under following circumstances: -

a.   Bids not qualifying the bid evaluation criteria as mentioned above.

b.   Offers not accompanied with complete technical specifications of items being offered and not supported with detailed technical brochures.

c.   Non responsive bid to any single required criteria / specification.

d.   Non submission of Tender Fee & Bid Security.

e.   Late submission of tender from given date & time.

f.   Offers not complying with the special instructions (para 4) in addition to other conditions.

7.   **Particulars and Specifications**. Standard particulars, and specifications of Equipment required to be procured are attached at **Annex 'A'**. The bid must conform to the asked specifications and acceptance criteria.

8.   **Delivery of Tender**. The original copy of the tender is to be enclosed in double cover. (i) Technical Offer (ii) Commercial Offer, separately. The covers should be sealed and bear tender Enquiry Number and date of opening, while the outer cover should bear only address of this office without any indications.

9.   **Date and Time for Submission of Tender**

a.   Tender must reach at HQ NLC, Harding Road Near AFIRM Rawalpindi by the date and time specified in tender notice by hand or by post.

b.   Tender must be dropped in the tender box before given time.

c.   NLC will not be responsible for delay occurring in post.

10.   **Price**

a.   The firms must quote prices inclusive of all taxes, packing, delivery and installation charges at Taftan, GABD and Sost as per format attached at **Annex "B"**.

b.   The price must be quoted in **PAK RUPEES** in figures and words at the appropriate space of the schedule to tender.

c.   Additional information, if any, must be linked with entries on the Schedule to Tender.

d.   Prices quoted should be firm and final.

e.   Tax exemption (if any) may be provided with the tender documents.

f.   Firm's financial offer must be on letter head duly signed and stamped by executive authority, otherwise offer will be rejected.

g.   Firm will deposit 0.25% amount against total value of the contract. This stamp duty is imposed by Govt of Pakistan as per Stamp Duty Act 1899 and it is responsibility of contractor/firm to deposit stamp duty.

h.   In case of increase in tax by GOP, the additional tax will be paid by purchaser.

11.   **Validity of Offers**. The validity period of quoted rates must be indicated and should be at-least 90 days from the date of opening the tender without any condition, extendable for further processing of the case, if required.

12.   **Delivery Period**. Equipment must be delivered/installed within 90 x days after issuance of LOA (Letter of Acceptance) or Award of Contract (whichever is earlier) at prescribe location, beyond which Late Delivery Charges will apply.

13.   **Packing**. Unless a method of packing is indicated in the specification in the schedule to tender form, the method of packing proposed by supplier must be described in schedule to the tender form. Contractors are at liberty to quote for additional alternative sizes and description of packs and these must be described in the schedule of tender. Packing should be such that item shall not damage in

transit till place of delivery. **SAFE DELIVERY OF ITEMS IS SOLE RESPONSIBILITY OF FIRM**.

14. **Inspection**

    a.   **Pre-Delivery Inspection**

        (1)   Pre-delivery inspection may be carried out at firm's premises before supply, by team of HQ NLC (If Required).

        (2)   Inspection will include Quantity, Quality, Conformation to the agreed specification as per LOA / Contract agreement.

        (3)   Firm will dispatch the items / equipment to prescribed location as mentioned in schedule of tender.

        (4)   Inspection (If Required) should preferably be kept at Rawalpindi / Islamabad. Inspection out of Rawalpindi / Islamabad will be carried out on the expenses of firm including travelling, boarding / lodging etc.

    b.   **Final Inspection**. Final Inspection will be carried out by the consignee after delivery & installation for any damages / breakages during transportation and successful functioning.

12. **Arbitration**. Any bidder feeling aggrieved by any act of procuring agency after submission of his bid and prior to award of the contract may lodge a written complaint to procurement agency under Rule - 48 PPRA.

13. **Risk and Expense**. Failure to supply the goods quoted or failure to meet the commitment made regarding delivery schedule, specifications, short supplies etc will authorize HQ NLC to purchase the items at firm's risk and cost**.**

14. **Force Majeure**. The supplier will not be held responsible for any delay occurring the supply of contracted stores due to event of force majeure such as Act of God, War, Riots, Civil Commotion's Strikes, lock out or disturbance directly affecting the supply over which the supplier has no control. In such an event the contractor shall inform the Purchaser within 15 days of the happening in writing. Non-availability of raw material for the manufacture of stores or the export permit for the export of the contracted stores from the country of its origin shall not constitute Force Majeure.

15. **Late Delivery**.   Late Delivery charges will be imposed @ 2% per month or no of days delayed on total cost of contract with effect from original delivery date.

16. **Terms of Payment**

   a. 100% Payment will be made after delivery and Final Inspection after installation and issuance of CRV (Certified Receipt Voucher) by the consignee.

   b. No advance payment is allowed

17. **Tender Fee and Bid Security**. Both will be prepared in the shape of bank draft in favor of "**National Logistics Corporation HQ Main Account**" and submitted as following: -

   a. **Tender Fee**. Rs 2,000/- must be attached with Technical offer.

   b. **Bid Security**. Rs 1,000,000/- must be attached with Technical offer.

18. **Bank Guarantee**

   a. Performance Bank guarantee valuing 5% of the contract value must be provided / deposited by the successful firm for award of contract, within 15 days from the signing of the contract / issuance of Letter of Intent (whichever is earlier).

   b. The Guarantee should be from a schedule bank of "AA" rating and valid till one month after warranty period.

   c. Performance Bank Guarantee should be as per format provided by NLC and the currency of PBG should be same as the currency of financial offer.

19. **Warranty Period**. Standard onsite warranty & support as offered by manufacturer or one year (whichever is higher).

20. **Comparison Chart**. Firms will also attach comparison chart along with their offer on following lines: -

NLC Specification	Firms Specification	Complied with or Not

21. **Evaluation:** Bids will be evaluated based on Compliance with technical specifications, Experience, Track Record and Financial competitiveness. Technical offer of bidders found eligible and qualified as per "**Bid Qualification**

criteria" will be evaluated as per specifications (Annex "A"). Financial offers of technically approved bidders will be opened and bidder with the lowest financial proposal will be considered most advantageous bid.

General Manager Procurement, HQ NLC

NL-2

HEADQUARTERS NATIONAL LOGISTIC CORPORATION

GENERAL CONDITIONS GOVERNING CONTRACT

1.   Tender will be opened at HQ NLC, Harding Road Near AFIRM Rawalpindi at Date and Time mentioned in the newspaper add.

2.   Tender will be submitted in accordance with PPRA Rule 36 (b) i.e., Single Stage – Two Envelope Procedure

3.   Detail of equipment required to be procured is as under :-

Ser	Items Description	Total Quantity
LOT – 1 (Server, Switches and Firewall)		
a.	SERVERS	3
b.	HCI OR Traditional 3-Tier (Server-Storage-Network) Architecture	1
c.	**Active Equipment**	
(1)	Firewall	3
(2)	24 Ports Fiber Switches	5
(3)	24 Ports Access Switch	4
(4)	16 Ports POE Access Switches	2
(5)	08 Ports POE Access Switches	19
(6)	Wireless Router/Access Points	4
(7)	Wireless Station (Point to MultiPoint)	1
Lot – 2 (Smart Rack, Passive work includes OFC, cabinets, CAT-6 cable, civil work, renovation work and End User Equipment)		
a.	**Indoor Bullet Cameras**	
(1)	Renovation of IT Room	3
(2)	1.5 Ton Comfort Cooling Unit	4
(3)	Power DB	3
(4)	Biometric Device	3
(5)	Rack ATS	2
(6)	Earthing System	3
(7)	C02 Gas Cylinders	6

(8)	CCTV System for IT Room	3
b.	Smart Rack	3
c.	**Passive Work - Taftan**	
(1)	RJ45 Connector (As per actual)	2 Box
(2)	Face Plate, I/O, Back Box	40
(3)	Patch Panel Imported (Loaded with I/Os)	1 (24 Port)
(4)	Cable Manager	1
(5)	UPS 1 KVA	12
(6)	4U Network Cabinets Indoor With PDU	11
(7)	CAT 6 Cable Indoor For LAN, CCTV (As per actual)	750 meters
(8)	CAT 6 Cable Outdoor For LAN, CCTV (As per actual)	792 meters
(9)	Copper Patch Cords	41 x 3 meter
(10)	ODF Loaded with Pigtails and Couplers	2 x 24 Ports
(11)	ODF Loaded with Pigtails and Couplers	10 x 04 Ports
(12)	OFC 24 Core (Single Mode) (As per actual)	948 meter
(13)	OFC 08 Core (Single Mode) (As per actual)	720 meters
(14)	OFC 04 Core (Single Mode) (As per actual)	885 meters
(15)	OFC Duplex Patch Cords(SC-LC)	60 x 1 meter
(16)	OFC Duplex Patch Cords(LC-LC)	10 x 3 meters
(17)	OFC Enclosures	12
(18)	Main Holes	24
(19)	Duct Patti 16*25	50
(20)	PVC Pipe (1 inch) 10 feet with Bands and Sockets (As per actual)	12
(21)	PVC Flexable Pipe (1 inch) (As per actual)	30 meters
(22)	HDPE Pipe (As per Actual)	2700 meters
(23)	VFL Device	2
(24)	Network Tool Kit	2
(25)	OFC Route Tags (As per Actual)	30
(26)	Svcs (As per actual)	1 Job

d.	**Passive Work - GABD**	
(1)	RJ45 Connector (As per actual)	3 Box
(2)	Face Plate, I/O, Back Box	24
(3)	UPS 1KVA	4
(4)	4U Network Cabinets Indoor With PDU	4
(5)	CAT 6 Cable Outdoor For LAN, CCTV (As per actual)	410 meters
(6)	CAT 6 Cable Indoor For LAN, CCTV (As per actual)	300 meters
(7)	Copper Patch Cords 3m	44
(8)	ODF Loaded with Pigtails and Couplers	2 x 4 Ports
(9)	OFC 04 Core (Single Mode) (As per actual)	260 meters
(10)	OFC Duplex Patch Cords(SC-LC)	14 x 1 meter
(11)	OFC Duplex Patch Cords(LC-LC)	14 x 3 meters
(12)	Main Holes	2
(13)	PVC Pipe 1" with bends and sockets	20
(14)	Flexible Pipe 1" (As per actual)	65 meters
(15)	Duct Patti 16*25	27
(16)	HDPE Pipe 2" Dia (As per Actual)	260 meter
(17)	VFL Device	2
(18)	Network Tool Kit	2
(19)	Svcs (As per actual)	1 Job
e.	**Passive Work - Sost**	
(1)	Back Box (As per actual)	23
(2)	I/O (As per actual)	23
(3)	RJ45 Connector (As per actual)	4 x Box
(4)	Face Plate (single shutter) (As per actual)	23
(5)	Patch Panel (Loaded with I/Os)	1 x 24 Port
(6)	Patch Panel (Loaded with I/Os)	1 x 16 Port
(7)	Cable Manager	3
(8)	UPS 1 KVA with 1 hr backup	4
(9)	4U Network Cabinets Indoor With PDU	4

(10)	CAT 6 Cable Indoor For LAN, CCTV (As per actual)	395 meters
(11)	CAT 6 Cable Outdoor For LAN, CCTV (As per actual)	305 meters
(12)	Copper Patch Cords	15 x 1 meter
(13)	Copper Patch Cords	17 x 3 meters
(14)	ODF Loaded with Pigtails and Couplers	1 x 16 Ports
(15)	ODF Loaded with Pigtails and Couplers	4 x 4 Ports
(16)	OFC 12 Core (Single Mode) (As per actual)	840 meters
(17)	OFC 04 Core (Single Mode) (As per actual)	80 meters
(18)	OFC Duplex Patch Cords(SC-LC)	24 x 1 meter
(19)	OFC Duplex Patch Cords (LC-LC)	10 x 3 meters
(20)	OFC Enclosures	5
(21)	Main Holes	10
(22)	Duct Patti 16*25	45
(23)	Duct Patti 25*25	20
(24)	PVC Pipe (1 inch) with Bands and Sockets (As per actual)	20
(25)	PVC Flexable Pipe (1 inch) (As per actual)	25 meters
(26)	HDPE Pipe with warning tape (As per Actual)	920 meters
(27)	VFL Device	2
(28)	Network Tool Kit	2
(29)	OFC Route Tags (As per Actual)	20
(30)	Svcs (As per actual)	1 Job
f.	**User End Equipment**	
(1)	Laptop	29
(2)	Printers	14
(3)	Scanners	12
(4)	IP Phone Set	18

NL-3

Address_____

Telephone_____

Code Used_____

From: _____

To:

THE DIRECTOR GENERAL

NATIONAL LOGISTIC CORPORATION QMG's BRANCH

R.A. BAZAAR GHQ RAWALPINDI

Dear Sir,

       I/We hereby offer to supply to the Director General NLC,the stores as per detail in the Scheduled hereto or such portion thereof as you may specify in the contract at the prices given in the said schedule and agree to hold this offer open till _____. I/We shall be bound by a communication of acceptance dispatched within the prescribed time.

2.   I/We have understood the instructions to Tenders and Conditions of Contract as laid down in form NL-2 to"General Conditions Governing Contracts" and have thoroughly examined the specificity/drawing and or pattern quoted in the schedule hereto and am/are fully aware to the nature of the stores required and my/our offer is to supply stores strictly in accordance with the requirements.

3.   Recommended technical manual/ data are also enclosed with the offer.

4.   The following pages have been added to and form part of this tender:-

Your faithfully

(Signature of Tendered)

Address_____

Dated _____

Signature of witness_____

Address_____

Annex "A"

LOT-1 (Servers, Switches and Firewalls)

SERVERS

Total Quantity - 3 Servers			
Sr#	**Component**	**Specification**	**Qty (Per Server)**
1	General	OEM/Authorized distributor with local support presence and spare parts availability in major cities	1
2	Form Factor	2U Rack Mount Server Chassis with minimum 8 x 2.5" Universal Drive Bays (SAS/SATA/NVMe direct support)	1
3	Processor	Dual Socket Server Configuration with Minimum 20 Physical Cores per Processor (40 Cores Total), x86-64 Architecture, Simultaneous Multithreading (SMT) Enabled, Base Frequency ≥ 2.0 GHz, Enterprise Class Processor	2
4	Memory	352GB DDR5 RDIMM, Minimum 4800–6400 MT/s, Dual Rank, Installed across multiple channels for optimal performance	As required
5	RAID Controller	8-Port Internal PCIe SAS/SATA Hardware RAID Controller, 12Gb/s SAS, Minimum 4GB Cache, RAID 0/1/5/6/10/50/60 support	1
6	Boot Storage	2 x 450GB Enterprise SATA SSD, Mixed Use, 6Gbps, 2.5", Hot-Plug, 1-3 DWPD	2
7	Data Storage	3.2TB Enterprise SAS 12Gbps, 10K RPM, 2.5", Hot-Plug Drives	6
9	Power Supply	Dual Hot-Plug Redundant Power Supplies (1+1), ≥ 800W each, 80+ Platinum/Titanium efficiency	2
10	OCP Network Adapter	OCP 3.0 or equivalent, Quad Port 1GbE Base-T Adapter	1
11	PCIe Network Adapter	Dual Port 25GbE SFP28 Adapter (PCIe Gen4 or higher)	1
12	Optical Transceivers	Dual Port 10Gb SFP+ SR Optical Transceivers, Multi-mode Fiber Compatible	1
13	Management	Dedicated Remote Server Management Port (IPMI/iDRAC/iLO equivalent), Web-based GUI, Virtual Media Support	1
14	Rails	Rack Mount Sliding Rails with Cable Management Arm	1

15	Cables (Fiber, Cat6A)	LC-LC Multi-Mode Fiber, 10 meters Cat6A RJ45 Copper Patch Cord, 5 meters (10) & 10 meters (10)	8 20
16	Warranty & Support	Standard OEM Warranty with Parts & Labor	1
17	Documentation	Detailed BoM	1

The successful bidder will be responsible for installation, end to end configuration and integration of the eqpt with the current and new systems as per the design given by the buyer. Bidder to provide separate price for supply and equipment installation.

HCI OR Traditional 3-Tier (Server-Storage-Network) Architecture			
Sr#	**Component**	**Minimum Requirement**	**HCI Option (If Proposed)**	**3-Tier Option (If Proposed)**
1	Solution Architecture	Enterprise Grade Solution	Hyperconverged Infrastructure (SDS Based)	Compute + SAN Storage Architecture
2	Total vCPU Capacity	≥ 950 vCPU	Scale-out Nodes delivering required vCPU	Compute Nodes sized accordingly
3	Total RAM Capacity	≥ 4 TB Cluster Level	Distributed across HCI nodes	Distributed across compute nodes
4	Usable Storage	≥ 150 TB Usable (Post RAID/EC)	Software Defined Mirroring / Erasure Coding	RAID 0/1/5/6/10/50/60 support
5	Minimum Cluster Size	4 Nodes Minimum	4-7 HCI Nodes	4-7 Compute Nodes + SAN (Dual Controllers)
6	Processor	Dual Socket per Node, ≥ 48–56 Cores per CPU, ≥ 2.0 GHz	Per HCI Node	Per Compute Node
7	Memory Expandability	≥ 20-30% Free Slots for Future Growth	Per HCI Node	Per Compute Node
8	Storage Media Type	Enterprise SAS / SSD / NVMe	Hybrid or All-Flash	SAN Tiered Storage or All-Flash
9	Storage Architecture	Redundant, No Single Point of failure	Software Defined Storage	Dual Active-Active Controllers
10	Data Protection	Disk + Node Failure Tolerance	Node-Level Resilience	Controller-Level Resilience
11	Network – Data	Minimum Dual 25GbE per Node	For HCI Backplane + VM Traffic	For iSCSI/FC + VM Traffic

12	Network – Management	1GbE / 10GbE Redundant	Required	Required
13	Hypervisor Support	VMware / Hyper-V / or Equivalent	Integrated or Compatible	All Hypervisor compatibility
14	High Availability	Live Migration + HA Required	Native Cluster HA	Hypervisor-Based HA
15	Scalability	Online Expansion Without Downtime	Add Node to Expand	Add Compute or Storage Separately
16	Performance	Must Support Mixed Workload	SDS Optimized	SAN Optimized
17	Backup & Replication	Snapshot + Replication Support	Native SDS Replication	SAN-Based Replication
18	Redundancy	No Single Point of Failure	Node + Disk + Network Redundant	Controller + Disk + Network Redundant
19	Cables (Fiber, Eth)	Include tentative Network cables as per architecure	Required	Required
20	Warranty & Support	Minimum 3 Years 24x7 OEM Support	OEM Support	OEM Support
21	Documentation	Detailed BoM + Sizing Justification Required	Required	Required

The successful bidder will be responsible for installation, end to end configuration and integration of the eqpt with the current and new systems as per the design given by the buyer. Bidder to provide separate price for supply and equipment installation.

Active Equipment

Ser	Firewall, loaded with all type SFPs & SFP+ transceivers	18 x GE RJ45 ports (including 1 x MGMT port, 1 X HA port, 16 x switch ports), 8 x GE SFP slots, 4 x 10GE SFP+ slots , SP5 hardware accelerated, 480GB onboard SSD storage, dual AC power supplies	Taftan	Gabd	Sost
	Firewall				
	Hardware Specifications				
1	**Hardware Accelerated GE RJ45 Ports**	16			
2	**Hardware Accelerated GE RJ45 Management / HA Ports**	2			
3	**Hardware Accelerated GE SFP Slots (including all SFPs)**	8			
4	**Hardware Accelerated 10 GE SFP+ Slots (default) (including all SFPs)**	4			
5	**USB Ports**	1			
6	**Console (RJ45)**	1			
7	**Internal Storage**	1 x 480 GB SSD	1	1	1
8	**Trusted Platform Module (TPM)**	Yes			
9	**Bluetooth Low Energy (BLE)**	Yes			
10	**System Performance* — Enterprise Traffic Mix**				
11	**IPS Throughput**	5.3 Gbps			
12	**NGFW Throughput**	3.1 Gbps			
13	**Threat Protection Throughput**	2.8 Gbps			
14	**System Performance and Capacity**				
15	**Firewall Throughput (1518 / 512 / 64 byte UDP packets)**	39 / 39 / 28 Gbps			

16	Firewall Latency (64 byte UDP packets)	3.17 µs			
17	Firewall Throughput (Packets Per Second)	42 Mpps			
18	Concurrent Sessions (TCP)	3 M			
19	New Sessions/Second (TCP)	140 000			
20	Firewall Policies	10 000			
21	IPsec VPN Throughput (512 byte)	35 Gbps			
22	Gateway-to-Gateway IPsec VPN Tunnels	2000			
23	Client-to-Gateway IPsec VPN Tunnels	16 000			
24	SSL-VPN Throughput	1.5 Gbps			
25	Concurrent SSL-VPN Users (Recommended Maximum, Tunnel Mode)	500			
26	SSL Inspection Throughput (IPS, avg. HTTPS)	3 Gbps			
27	SSL Inspection CPS (IPS, avg. HTTPS)	2100			
28	SSL Inspection Concurrent Session (IPS, avg. HTTPS)	315 000			
29	Application Control Throughput (HTTP 64K)	6.7 Gbps			
30	CAPWAP Throughput (HTTP 64K)	35 Gbps			
31	Virtual Domains (Default / Maximum)	10/10			
32	High Availability Configurations	Active-Active, Active-Passive, Clustering			
33	Load Balancing	Yes			

34	Form Factor	Rack Mount, 1RU			
35	**Operating Environment and Certifications**				
36	**Input Rating**	100-120VAC, 1A-.5A Max, 50-60Hz			
37	**Redundant Power Supplies**	Yes (Default dual non-swappable AC PSU for 1+1 Redundancy)			
38	**Power Supply Efficiency Rating**	N/A			
39	**Maximum Current**	100VAC@1A, 120V@0.5A			
40	**Power Consumption (Average / Maximum)**	43 W / 47 W			
41	**Heat Dissipation**	159 BTU/h			
42	**Operating Temperature**	32°–104°F (0°–40°C)			
43	**Storage Temperature**	-31°–158°F (-35°–70°C)			
44	**Humidity**	10–90% non-condensing			
45	**Noise Level**	49 dBA			
46	**Air Flow**	Side to back			
47	**Operating Altitude**	Up to 10 000 ft (3048 m)			
48	**Compliance**	FCC Part 15B, Class A, CE, RCM, VCCI, UL/cUL, CB, BSMI			
49	**Certifications**	USGv6/IPv6			
50	**Product certification/ Gartner Ratings**	Must be in Gartner Leader's Magic Quadrant. Only Leader will be accepted. Proposed item should not be EOS/ EOL The proposed brand MUST be recommended by NSS Lab.			
51	**Training & Certification**	Training alongwith Professional level Certification Vouchers for 3 x Network Resources			
52	**Warranty / Support**	Installation, Configuration & Commissioning Services must be included. 1 Year 24x7X4 warranty with License / support backed by principal.			

S/No	Bidding classification	Detailed technical parameters	Taftan	Gabd	Sost
24 Ports Fiber Switches				
1	Switching Capacity	Must support box switching capacity ≥ 128 Gbps	2	1	2
2	Forwarding Capacity	Must support forwarding capacity ≥ 95 Mpps			
3	Temperature	Support operating temperature -5ºC to 50ºC			
4	Entries	Support at least ≥ 4K routing entries			
5		Support at least ≥ 2K ARP entries			
6		Support at least ≥ 32K MAC entries			
7	Ports Requirement	24 × 1GE SFP fiber ports			
8		Minimum 4 × 10GE SFP+ uplink ports			
9		Must include all transceivers of single mode 1 km range per switch			
		The transceivers must be from the same vendor as that of the switch of the same vendor			
11	L2 Function	Support VLAN (802.1Q), port-based, MAC-based, and protocol-based VLANs; Maximum VLANs ≥ 4094			
12	CPU Protection	Support CPU protection mechanism			
13	ERPS	Support ERPS (G.8032), convergence time ≤ 50 ms			
14	Reliability	Support ring-protection protocol (RRPP or equivalent), convergence ≤ 50 ms			
15		Support Smart Link or equivalent fast-failover mechanism, convergence ≤ 50 ms			
16	ACL	Support basic and advanced ACL			
17		Support port-based and VLAN-based ACL, IPv4/IPv6 ACL, Ingress/Egress ACL			
18	Security	Support 802.1X, MAC authentication, Portal/Web authentication			
19	Stacking	Support stacking of at least ≥9 switches			

20		Support service-port stacking and remote stacking			
21	**Link Aggregation**	Support Link Aggregation (IEEE 802.3ad LACP)			
22	**Mirror**	Support SPAN/RSPAN and flow mirroring			
23	**Energy Saving**	Support IEEE 802.3az (EEE)			
24	**Multicast**	Support IGMP Snooping v1/v2/v3, MLD Snooping, PIM Snooping, Multicast VLAN			
25	**O&M**	Support SNMP v1/v2/v3, RMON, SSH v2			
26		Support OAM (802.1AG, 802.3AH)			
28	**Surge Protection**	Must support 10KV surge protection on service ports			
29	**Energy Efficiency**	Must support energy-efficient design with automatic interface power shutdown when link is down			
30	**Warranty**	Minimum 1-year support services per switch			
31	**Others**	The switch must be able to integrate with SDN solution			
32		Must support 10KV Surge protection on service ports			
33		Must support Energy efficient design which support to shut down interface power if the interface is down			

	24 Ports Access Switch				
S/N	**Bidding classification**	**Detailed technical parameters**	**Taftan**	**Gabd**	**Sost**
1	**Switching Capacity**	Must support Box switching capacity ≥ 56 Gbps	2	-	2
2	**Forwarding Capacity**	Must support Forwarding Capacity ≥ 42 Mpps			
3	**Temperature**	Support operating temperature -5ºC～50ºC			
4	**Entries**	Support at least ≥ 1K routing entries			
5		Support at least ≥1K ARP entries			
6		Support at least ≥16K MAC entries			
7	**Ports requirement**	Support 24 x 100/1000Base-T and 4 x 1GE SFP ports			
8		The solution must include at least 4 x 1GE single mode transceivers 1 km range per switch			

		The transceivers must be from the same vendor as that of the switch			
10	**L2 Function**	Support VLAN (802.1Q) Support port-based, MAC-based, and protocol-based VLANs Maximum VLANs ≥ 4094			
12	**CPU protection**	Support CPU protection			
13	**ERPS**	Support ERPS, convergence time≤50ms			
19	**ACL**	Support basic and advanced ACL			
20		Support port-based and VLAN-based ACL, IPv6 ACL and Ingress/Egress ACL			
21		Support 802.1x, MAC, Portal, web authentication			
22	**Stacking**	Support stacking of at least 8–9 switches			
23		Support service-port stacking or remote stacking			
24	**VLAN**	Support port-based, MAC-based, protocol-based VLAN			
25		maximum VLAN >=4094			
26	**Link Aggregation**	Support Link Aggregation			
27	**Mirror**	Support SPAN and RSPAN			
28	**Energy Saving**	Support IEEE 802.3az (EEE)			
13	**Reliability**	Support RRPP or equivalent ring-protection protocol, convergence ≤ 50 ms			
14		Support Smart Link or equivalent fast-failover mechanism, convergence ≤ 50 ms			
29	**Multicast**	Support IGMP Snooping v1/v2/v3, MLD Snooping, Multicast VLAN			
30	**O&M**	Support SNMP v1/v2/v3, RMON, SSH v2			
31		Support OAM (IEEE 802.1ag, IEEE 802.3ah)			
32	**Warranty**	Must include 1 year Support services for each switch.			
35	**Others**	The switch must be able to integrate with SDN solution			
36		Must support 10KV Surge protection on service ports			
37		Must support Energy efficient design which support to shut down interface power if the interface is down			

	16 Ports POE Access Switches				
Ser	**Bidding classification**	**Detailed technical parameters**	**Taftan**	**Gabd**	**Sost**
1	**Switching Capacity**	Must support Box switching capacity ≥ 56 Gbps	1	1	-
2	**Forwarding Capacity**	Must support Forwarding Capacity ≥ 42 Mpps			
3	**Temperature**	Support operating temperature -5ºC～50ºC			
4	**Entries**	Support at least ≥ 1K routing entries			
5		Support at least ≥1K ARP entries			
6		Support at least ≥16K MAC entries			
7	**Ports requirement**	16 × 10/100/1000Base-T Ethernet ports and 2 x 1GE SFP ports			
8		The solution must include at least 2 x 1GE single mode transceivers 1 km range per switch The transceivers must be from the same vendor as that of the switch			
9		Support IEEE 802.3af/at (PoE/PoE+) Minimum 370 W total PoE power budget			
10	**L2 Function**	Support VLAN (802.1Q) Support port-based, MAC-based, and protocol-based VLANs Maximum VLANs ≥ 4094			
11	**CPU protection**	Support CPU protection			
12	**ERPS**	Support ERPS, convergence time≤50ms			
13	**Reliability**	Support RRPP or equivalent ring-protection protocol, convergence ≤ 50 ms			
14		Support Smart Link or equivalent fast-failover mechanism, convergence ≤ 50 ms			
18	**ACL**	Support basic and advanced ACL			
19		Support port-based and VLAN-based ACL, IPv6 ACL and Ingress/Egress ACL			
20		Support 802.1x, MAC, Portal, web authentication			
21	**Stacking**	Support stack of at least >=9 switches			

22		Support service ports Stacking and remote stacking			
23	**VLAN**	Support port-based, MAC-based, protocol-based VLAN			
24		maximum VLAN >=4094			
25	**Link Aggregation**	Support Link Aggregation			
26	**Mirror**	Support port mirroring SPAN(Switch Port Analyzer)/RSPAN(Remote SPAN); Support Flow mirroring			
27	**Energy Saving**	IEEE 802.3az(EEE)			
28	**Multicast**	Support IGMP Snooping v1/v2/v3, MLD Snooping, PIM snooping and Multicast VLAN			
29	**O&M**	Support SNMP v1/v2/v3, RMON, SSH v2			
30		Support OAM (802.1AG, 802.3AH)			
31	**Warranty**	Must include 1 year support services for each switch.			
32	**Others**	The switch must be able to integrate with SDN solution			
33		Must support 10KV Surge protection on service ports			
34		Must support Energy efficient design which support to shut down interface power if the interface is down			

08 Ports POE Access Switches					
Ser	**Bidding classification**	**Detailed technical parameters**	**Taftan**	**Gabd**	**Sost**
1	**Switching Capacity**	Must support Box switching capacity ≥ 30 Gbps			
2	**Forwarding Capacity**	Must support Forwarding Capacity ≥ 22 Mpps			
3	**Temperature**	Support operating temperature -5ºC～50ºC	10	3	6
4	**Entries**	Support at least ≥ 1K routing entries			
5		Support at least ≥1K ARP entries			
6		Support at least ≥16K MAC entries			
7		08 × 10/100/1000Base-T Ethernet ports and 2 x 1GE SFP ports			

8	**Ports requirement**	The solution must include at least 2 x 1GE single mode transceivers 1 km range per switch The transceivers must be from the same vendor as that of the switch			
9		Support IEEE 802.3af/at (PoE/PoE+) Minimum 120W total PoE power budget			
10	**L2 Function**	Support VLAN (802.1Q) Support port-based, MAC-based, and protocol-based VLANs Maximum VLANs ≥ 4094			
11	**CPU protection**	Support CPU protection			
12	**ERPS**	Support ERPS, convergence time≤50ms			
13	**Reliability**	Support RRPP or equivalent ring-protection protocol, convergence ≤ 50 ms			
14		Support Smart Link or equivalent fast-failover mechanism, convergence ≤ 50 ms			
18	**ACL**	Support basic and advanced ACL			
19		Support port-based and VLAN-based ACL, IPv6 ACL and Ingress/Egress ACL			
20		Support 802.1x, MAC, Portal, web authentication			
21	**Stacking**	Support stack of at least >= 4 switches			
22		Support service ports Stacking and remote stacking			
23	**VLAN**	Support port-based, MAC-based, protocol-based VLAN			
24		maximum VLAN >=4094			
25	**Link Aggregation**	Support Link Aggregation			
26	**Mirror**	Support port mirroring SPAN(Switch Port Analyzer)/RSPAN(Remote SPAN); Support Flow mirroring			
27	**Energy Saving**	IEEE 802.3az (EEE)			
28	**Multicast**	Support IGMP Snooping v1/v2/v3, MLD Snooping, PIM snooping and Multicast VLAN			
29	**O&M**	Support SNMP v1/v2/v3, RMON, SSH v2			
30		Support OAM (802.1AG, 802.3AH)			

31	Warranty	Must include 1 year support services for each switch.			
32		The switch must be able to integrate with SDN solution			
33	Others	Must support Surge protection on service ports			
34		Must support Energy efficient design which support to shut down interface power if the interface is down			

Wireless Router/Access Points					
Ser	**Bidding classification**	**Parameter Type**	**Taftan**	**Gabd**	**Sost**
1	**Bandwidth**	5 GHz: 5764 Mbps (802.11be) 2.4 GHz: 688 Mbps (802.11be)		1	-
2	**Channel Width**	Up to 160 MHz on the 5 GHz band.			
3	**Spatial Streams**	4×4 MU-MIMO on 5 GHz; 2×2 MU-MIMO on 2.4 GHz			
4	**Modulation**	4096-QAM (4K-QAM) for 1.2x higher data density than Wi-Fi 6			
5	**Processor**	Broadcom BCM6766 Quad-Core 2.0 GHz			
6	**Hardware Interface**	WAN Port: 1× 2.5 Gbps RJ45 LAN Ports: 1× 2.5 Gbps RJ45. 3× 1 Gbps RJ45 USB Port: 1× USB 3.0 (Supports NTFS, exFAT, HFS+, FAT32)	3		
7	**Antennas**	6× High-Performance Fixed Antennas			
8	**MLO (Multi-Link Operation)**	Allows a client to connect to both 2.4 GHz and 5 GHz bands simultaneously for better throughput and lower latency			
9	**Multi-RU**	Allows a single user to be assigned multiple Resource Units, reducing interference and improving spectrum efficiency			
10	**Backward Compatibility**	Fully supports 802.11a/b/g/n/ac/ax devices			
11	**Power Supply**	12 V ⎓ 2.5 A (External Adapter)			
12	**Operating Temp**	0°C to 40°C (32°F to 104°F)			

		Wireless Station (Point to MultiPoint) – Qty 1 (Sost)	
S/No	Bidding classification	Detailed technical parameters	
1	Device Type	Outdoor Wireless Station / CPE	
2	Frequency Band	5 GHz (5170–5875 MHz)	
3	Antenna Gain	14.6–16 dBi, directional	
4	Throughput	Up to ~300 Mbps	
5	Ethernet Ports	2 × 10/100 Mbps RJ45 with PoE passthrough	
6	Power	Passive PoE 24 V, ~8 W	
7	Enclosure	UV-resistant, weatherproof, pole-mountable	
8	Operating Temp	−30 °C to +75 °C	
9	Humidity	5–95% non-condensing	
10	Application	Outdoor point-to-point or point-to-multipoint wireless links	

Annexure 2

LOT-2 (Smart Rack, Passive work includes OFC, Cabinets, CAT-6 Cable, Civil, Renovation Work and End User Equipment)

CIVIL INFRASTRUCTURE WORK

Ser	Head	Qty	Unit	SPECIFICATION
1.	Renovation of IT Room	3	Service	**Renovation of IT Rooms (Room at Sost and Taftan whereas containers at Gabd)** Approx room size at Sost is 10 x 12 ft Renovation includes paint work, glass partitioning to separate room/office into server room and NOC Supply and installation of lights Maintenance of already installed wall mounted AC unit Roof treatment for water leakages
2.	1.5 Ton Comfort Cooling Unit	4	No	Supply and installation of 1.5 Ton cooling unit (Sost 2, Taftan 1 and Gabd 1) Cooling units have to run with sequence controller. Firm to supply and install 1 x sequence controller on each site.
3.	Power DB	3	No	**Supply, installation, testing and commissioning of 1 x power DB with following breakers (1 room at each border site)** Main input MCCB Breakers for Smart Cabinet, 2 x AC units and switch box Supply and installation of input power cable for IT Room from existing ATS/ Change over (Survey may be carried for actual cable length. Power cable must be sufficient for Smart cabinet, IT Room lights Vendor to offer.
4.	Biometric Device	3	No	(Sost 1, Taftan 1 and Gabd 1) Supply, installation, testing and commissioning of Access control system with complete accessories (3 in 1 features)
5.	Rack ATS	2	No	32A Automatic transfer switch (STS) Min 12 x C13 and 2 x C19 outlets 220/230 V, 2 x inputs
6.	Earthing System	3	No	(Sost 1, Taftan 1 and Gabd 1)

				1 x earthing at each border terminal • Installation of earth pits (Less than 1 Ohm rating) with copper bar for distribution in each room including, excavation, copper plates, rods, racks and all other accessories for Earthling. • Supply of 1" dia & 10 ft long copper Rod filled with chemical compound as earth electrode including 1 No of wire having length approximately 60-80 Rft 70 mm2 Bare standard copper conductor having purity 93% or above from rod to ground surface in each Earth Pit, 1 No Copper thimble 70 mm, 12"Wide & 12" deep Chamber for maintenance purpose. Covered with Metal Cover. • Supply of Earth Terminal copper plate with brass nuts, bolts & PVC insulator (Spacers) used for back spacing installed on walls for ECP & Pits
7.	C02 Gas Cylinders	6	No	2 x 5Kg CO2 cylinder per site
8.	CCTV System for IT Room	3	No	(Sost 1, Taftan 1 and Gabd 1) Supply, installation, testing and commissioning of 1 x CCTV System at each border site. Each system contains: - • 2 x IP indoor POE bullet/ dome camera 4MP • 4-Channel PoE NVR (supports up to 4 cameras) with built-in PoE ports (plug cameras directly into it), HDMI/VGA output to connect a TV/monitor and storage of 00 GB – 1 TB Surveillance HDD sufficient for 14 days of recording

Smart Rack

Ser	Qty	SPECIFICATION
1.	3 (one each at Taftan, Gabd and Sost Border Terminal)	Smart Rack with built in UPS and Cooling Unit Each smart rack must contain following equipment with outlined specifications: - **UPS Unit (Quantity 1)** ➢ The rated capacity of the UPS is 6 kVA. The UPS adopts high-density design and supports rack-mounted installation. ➢ The UPS must occupy no more than 2U space in the cabinet. ➢ **Overload Capacity**. UPS should have overload capacity; may last for more than 50 seconds on 150% load. ➢ Input/ Output of the UPS are single-phase 220/230/240Vac,50&60Hz,1Ph+N+PE. ➢ Wide input voltage range: 80–280 V AC, good power grid adaptability, and reduced battery charge/discharge times ➢ **Efficiency**. The UPS should have high efficiency of more than 95%. ➢ Input frequency range: 46 Hz to 54 Hz ➢ **Lightning protection**: A Class C SPD must be configured with surge protection switch, auxiliary contact of the surge protection switch, and a microswitch indicating the SPD fault to remotely monitor the surge protection status. ➢ **Batteries** must be rack-mounted battery packs or battery cabinets with standard backup time of 15 minutes on 100% load. **Cooling System (Quantity 1)** ➢ The integrated precision air conditioner in the cabinet is used, and no outdoor unit is required. ➢ **Cooling Capacity**. The net cooling capacity of the precision air conditioner should not be less than 3.5 kW and the air volume is not less than 600 m³/h.

> ➤ The space occupied by the precision air conditioner should be less than 10 U in the rack.

> ➤ The temperature and humidity threshold can be set.

> ➤ When the temperature and humidity fluctuation exceeds the threshold, an alarm signal can be sent

Monitoring and Management System (Quantity 1)

> ➤ Must provide an overall environment and power monitoring system to monitor the power supply and distribution, UPS, air conditioner, temperature and humidity, water leakage detection(option), smoke, video, door status and access control devices in the cabinet.

> ➤ The monitoring information of module data center can be shown in the web.

> ➤ All monitoring information must be provided with SNMP northbound interfaces for the upper-layer management platform to integrate and access.

> ➤ If a fault or parameter error occurs, the system generates an alarm in real time. Can view the alarm cause and solution in the alarm details. Active alarms can be filtered by device and alarm severity

PDU (Quantity 2)

PDUs with Switch Type 16 (A)

Rack 42 U ((Quantity 1)

> ➤ 42U indoor closed cabinet kit

> ➤ Usable space for ICT Equipment must be min 20U

OEM Requirement

> ➤ Must be present in Pakistan for min 5 years with registered offices

> ➤ OEM must have own technical team for deployment and addressing technical issues in operational phase

> ➤ OEM must be maintaining spare parts of the offered smart cabinet with distributors in Pakistan

> ➤ The smart cabinet must be installed with other clients in Pakistan

		➢ OEM must have warehouse in Islamabad, Lahore & Karachi. **Vendor Requirement** ➢ Vendor must have independently supplied and installed similar smart rack or higher end smart racks/ data center solutions of the same OEM in Pakistan. ➢ Equipment supplied and installed as JV or through a sub-contractor is not acceptable. **Training**. Complimentary 1 x ATD Training with certification against 3 x smart racks.

Passive Work - Taftan

Ser	ITEMS	A/U	QTY	Specifications
1	RJ45 Connector (As per actual)	Box	2	Supports PoE++ (802.3bt) 4PPoE, up to 100W connectors with metal shield and are compatible with both stranded and solid conductors, typically supporting 23 to 24 AWG wires
2	Face Plate, I/O, Back Box	Nos	40	Faceplate for 1x Jack Color white Suitable for Cat 6, Cat 6A Jack Number of ports 1 Cat 6 E250 Unshielded RJ45 I/O Jack Tool-less jack Jack can be reused even after wiring mistake Housing material Plastic Conductor AWG 26 - 22 Insulation diameter max. 1.6 mm Contact surface Gold, 1.6 µm IEEE 802.3 1GBASE-T, IEEE 802.3at Insulation resistance > 500 MΩ Voltage Rating (Maximum) <75 VDC Lead Through Resistance < 200 MΩ This Network BACK Box is compatible with Cat5 and Cat6 cables used in telephones and in ethernet connectivities. • Single Gang • Wall Face Mount Box • Material: Polyvinyl Chloride (PVC) • Size: 3x3 inches •Colour: White
3	Patch Panel Imported (Loaded with I/Os)	24 Port	1	Flush mount 24 Port Copper Patch Panel 1U, 19" Black Housing material Steel Halogen-free Integrated cable strain relief Loaded with I/Os Imported
4	Cable Manager	Nos	1	Cable Management Panel 19", 1U Black Housing material Powder-coated metal and polycarbonate tray

5	UPS 1 KVA	Nos	12	1 KVA UPS with a back up time of 1 Hr for IT load of 300 W Single phase, pure sin wave Output Norminal Output Voltage 220V Output Frequency: 50 Hz
6	4U Network Cabinets Indoor With PDU	Nos	11	Type: 19-inch, 4U wall-mount network cabinet with PDU Material: Cold-rolled steel, powder coated (black) Size: Approx. 600(W) × 450(D) × 280(H) mm Mounting: Wall mount with adjustable vertical rails Door: Lockable tempered glass front door Panels: Removable side panels Cable Entry: Top and bottom cable entry provision Ventilation: Vent slots with fan mounting provision Load Capacity: Minimum 40 kg Accessories: Complete with cage nuts, mounting screws, and keys Application: Suitable for mounting network switches and ODF
7	CAT 6 Cable Indoor For LAN, CCTV (As per actual)	m	750	Category 6 Cable type U/FTP Bandwidth 250 MHz Conductor Copper Wire, AWG 23 Outer jacket material LSZH™/FRNC Delay skew 4 ns/100 m Voltage rating Less than 75 V d.c max and less than 50 V a.c max Coupling attenuation 60 dB Insulation resistance 5000 MΩ*km Surface transfer impedance 100 mΩ
8	CAT 6 Cable Outdoor For LAN, CCTV (As per actual)	m	792	Category 6 Cable type STP Bandwidth 250 MHz Conductor Copper Wire, AWG 23 Outer jacket material LSZH™/FRNC Delay skew 4 ns/100 m Voltage rating Less than 75 V d.c max and less than 50 V a.c max Coupling attenuation 60 dB Insulation resistance 5000 MΩ*km Surface transfer impedance 100 mΩ

9	Copper Patch Cords	3m	41	Cat 6 Patch Cord Conductor Copper Wire, AWG 24 Delay skew 45 ns/100 m Propagation delay 5.38 ns/m at 100 MHz Insulation resistance 500 MΩ*km Surface transfer impedance 100 N/A Connector Material Pin gold plated 50µ inch
10	ODF Loaded with Pigtails and Couplers	24 Ports	2	24 Core LANscape® Fiber Patch Panel 12 SC UPC Duplex Single Mode Adapter Fibre Category Single Mode OS2 24 SC Simplex Single Mode SMF-28®Ultra fiber Pigtails Easy to remove top cover Maximum 4 cable number in basic unit with accessories
		04 Ports	10	4 Core LANscape® Fiber Patch Panel 2 SC UPC Duplex Single Mode Adapter Fibre Category Single Mode OS2 4 SC Simplex Single Mode SMF-28®Ultra fiber Pigtails Easy to remove top cover Maximum 4 cable number in basic unit with accessories
11	OFC 24 Core (Single Mode) (As per actual)	m	948	24 Core SST™ Central Tube Steel Armour Outdoor Cable Fibre Category Single Mode OS2 Outer jacket material Linear Low Density Polyethylene (LLDPE) Corrugated steel tape armour with dielectric strength elements (aramid yarns) and swellable elements
12	OFC 08 Core (Single Mode) (As per actual)	m	720	08 Core SST™ Central Tube Steel Armour Outdoor Cable Fibre Category Single Mode OS2 Outer jacket material Linear Low Density Polyethylene (LLDPE) Corrugated steel tape armour with dielectric strength elements (aramid yarns) and swellable elements

13	OFC 04 Core (Single Mode) (As per actual)	m	885	04 Core SST™ Central Tube Steel Armour Outdoor Cable Fibre Category Single Mode OS2 Outer jacket material Linear Low Density Polyethylene (LLDPE) Corrugated steel tape armour with dielectric strength elements (aramid yarns) and swellable elements
14	OFC Duplex Patch Cords(SC-LC)	1m	60	Fiber Patch Cord Single Mode 1 Meters Long LC Duplex UPC - SC Duplex UPC Maximum Insertion Loss (dB) ≤ 0.25 Maximum Reflectance (dB)≤ -45 Ferrule Ceramic Core Diameter 9 µm Fibre Type/Class G.657.A1 Operating Temperature -20°C to 70°C Bend Radius (Single-Mode) 10 mm
15	OFC Duplex Patch Cords(LC-LC)	3m	10	Fiber Patch Cord Single Mode 3 Meters Long LC Duplex UPC - LC Duplex UPC Maximum Insertion Loss (dB) ≤ 0.25 Maximum Reflectance (dB)≤ -45 Ferrule Ceramic Core Diameter 9 µm Fibre Type/Class G.657.A1 Operating Temperature -20°C to 70°C Bend Radius (Single-Mode) 10 mm
16	OFC Enclosures	Nos	12	Suitable for buried, duct and aerial lines For straight and branching application Capacity for up to 24 splices IP 68 Closure sealing made of re-usable silicone
17	Main Holes	Nos	24	Providing and installation of RCC OFC manhole (900×900×900 mm) with heavy duty cover, duct entry provision, complete with base, frame, and accessories
18	Duct Patti 16*25	Length	50	PVC duct patti 16×25 mm, made of rigid PVC, 3 m length, for OFC duct spacing and protection, complete in all respects.
19	PVC Pipe (1 inch) 10 feet with Bands and Sockets (As per actual)	Length	12	Lengths with elbows, bends and sockets
20	PVC Flexable Pipe (1 inch) (As per actual)	m	30	PVC 1" solid Flexible pipe

21	HDPE Pipe (As per Actual)	m	2700	HDPE pipe, 2" dia, made of high-density polyethylene (HDPE), suitable for underground OFC installation, complete with warning tape and all accessories.
22	VFL Device	Nos	2	Providing and supply of Visual Fault Locator (VFL), 650 nm laser source, minimum 5 km range, compatible with single-mode and multi-mode fiber, complete with rechargeable battery and accessories.
23	Network Tool Kit	Nos	2	Providing and supply of networking tool kit including crimping tool, punch down tool, cable stripper, cutter, LAN tester, and accessories, suitable for Cat-6/Cat-5e cable installation and testing.
24	OFC Route Tags (As per Actual)	Nos	30	OFC route markers/tags made of durable UV-resistant PVC/FRP, with clear OFC identification and route details, suitable for outdoor installation, complete in all respects
25	Svcs (As per actual)	1 Job		Laying of Cables, instl, commissioning, digging OFC, backfilling, testing of Infra, Network, Comm and their passive component, successful handing over of proj

Passive Work - Gabd

Ser	ITEMS	A/U	QTY	Specifications
1	RJ45 Connector (As per actual)	Box	3	Supports PoE++ (802.3bt) 4PPoE, up to 100W connectors with metal shield and are compatible with both stranded and solid conductors, typically supporting 23 to 24 AWG wires
2	Face Plate, I/O, Back Box	Nos	24	Faceplate for 1x Jack Color white Suitable for Cat 6, Cat 6A Jack Number of ports 1 Cat 6 E250 Unshielded RJ45 I/O Jack Tool-less jack Jack can be reused even after wiring mistake Housing material Plastic Conductor AWG 26 - 22 Insulation diameter max. 1.6 mm Contact surface Gold, 1.6 µm IEEE 802.3 1GBASE-T, IEEE 802.3at Insulation resistance > 500 MΩ Voltage Rating (Maximum) <75 VDC Lead Through Resistance < 200 MΩ This Network BACK Box is compatible with Cat5 and Cat6 cables used in telephones and in ethernet connectivities. • Single Gang • Wall Face Mount Box • Material: Polyvinyl Chloride (PVC) • Size: 3x3 inches •Colour: White
3	UPS 1KVA	Nos	4	1 KVA UPS with a back up time of 1 Hr for IT load of 300 W Single phase, pure sin wave Output Norminal Output Voltage 220V Output Frequency: 50 Hz

4	4U Network Cabinets Indoor With PDU	Nos	4	Type: 19-inch, 4U wall-mount network cabinet with PDU Material: Cold-rolled steel, powder coated (black) Size: Approx. 600(W) × 450(D) × 280(H) mm Mounting: Wall mount with adjustable vertical rails Door: Lockable tempered glass front door Panels: Removable side panels Cable Entry: Top and bottom cable entry provision Ventilation: Vent slots with fan mounting provision Load Capacity: Minimum 40 kg Accessories: Complete with cage nuts, mounting screws, and keys Application: Suitable for mounting network switches and ODF
5	CAT 6 Cable Outdoor For LAN, CCTV (As per actual)	m	410	Category 6 Cable type STP Bandwidth 250 MHz Conductor Copper Wire, AWG 23 Outer jacket material LSZH™/FRNC Delay skew 4 ns/100 m Voltage rating Less than 75 V d.c max and less than 50 V a.c max Coupling attenuation 60 dB Insulation resistance 5000 MΩ*km Surface transfer impedance 100 mΩ
6	CAT 6 Cable Indoor For LAN, CCTV (As per actual)	m	300	Category 6 Cable type U/FTP Bandwidth 250 MHz Conductor Copper Wire, AWG 23 Outer jacket material LSZH™/FRNC Delay skew 4 ns/100 m Voltage rating Less than 75 V d.c max and less than 50 V a.c max Coupling attenuation 60 dB Insulation resistance 5000 MΩ*km Surface transfer impedance 100 mΩ
7	Copper Patch Cords 3m	Nos	44	Cat 6 Patch Cord Conductor Copper Wire, AWG 24 Delay skew 45 ns/100 m Propagation delay 5.38 ns/m at 100 MHz Insulation resistance 500 MΩ*km Surface transfer impedance 100 N/A Connector Material Pin gold plated 50μ inch

8	ODF Loaded with Pigtails and Couplers	04 Ports	2	4 Core LANscape® Fiber Patch Panel 2 SC UPC Duplex Single Mode Adapter Fibre Category Single Mode OS2 4 SC Simplex Single Mode SMF-28®Ultra fiber Pigtails Easy to remove top cover Maximum 4 cable number in basic unit with accessories
9	OFC 04 Core (Single Mode) (As per actual)	m	260	04 Core SST™ Central Tube Steel Armour Outdoor Cable Fibre Category Single Mode OS2 Outer jacket material Linear Low Density Polyethylene (LLDPE) Corrugated steel tape armour with dielectric strength elements (aramid yarns) and swellable elements
10	OFC Duplex Patch Cords(SC-LC)	1m	14	Fiber Patch Cord Single Mode 1 Meters Long LC Duplex UPC - SC Duplex UPC Maximum Insertion Loss (dB) ≤ 0.25 Maximum Reflectance (dB)≤ -45 Ferrule Ceramic Core Diameter 9 µm Fibre Type/Class G.657.A1 Operating Temperature -20°C to 70°C Bend Radius (Single-Mode) 10 mm
11	OFC Duplex Patch Cords(LC-LC)	3m	14	Fiber Patch Cord Single Mode 3 Meters Long LC Duplex UPC - LC Duplex UPC Maximum Insertion Loss (dB) ≤ 0.25 Maximum Reflectance (dB)≤ -45 Ferrule Ceramic Core Diameter 9 µm Fibre Type/Class G.657.A1 Operating Temperature -20°C to 70°C Bend Radius (Single-Mode) 10 mm
12	Main Holes	Nos	2	Providing and installation of RCC OFC manhole (900×900×900 mm) with heavy duty cover, duct entry provision, complete with base, frame, and accessories
13	PVC Pipe 1" with bends and sockets	Length	20	Lengths with elbows, bends and sockets
14	Flexible Pipe 1" (As per actual)	m	65	PVC 1" solid Flexible pipe
15	Duct Patti 16*25	Length	27	PVC duct patti 16×25 mm, made of rigid PVC, 3 m length, for OFC duct spacing and protection, complete in all respects.

16	HDPE Pipe 2" Dia (As per Actual)	m	260	HDPE pipe, 2" dia, made of high-density polyethylene (HDPE), suitable for underground OFC installation, complete with warning tape and all accessories.
17	VFL Device	Nos	2	Providing and supply of Visual Fault Locator (VFL), 650 nm laser source, minimum 5 km range, compatible with single-mode and multi-mode fiber, complete with rechargeable battery and accessories.
18	Network Tool Kit	Nos	2	Providing and supply of networking tool kit including crimping tool, punch down tool, cable stripper, cutter, LAN tester, and accessories, suitable for Cat-6/Cat-5e cable installation and testing.
19	Svcs (As per actual)	1 Job		Laying of Cables, instl, commissioning, digging OFC, backfilling, testing of Infra, Network, Comm and their passive component, successful handing over of proj

Passive Work – Sost

Ser	ITEMS	A/U	QTY	Specifications
1	Back Box (As per actual)	Nos	23	•This Network BACK Box is compatible with Cat5 and Cat6 cables used in telephones and in ethernet connectivities. • Single Gang • Wall Face Mount Box • Material: Polyvinyl Chloride (PVC) • Size: 3x3 inches •Colour: White
2	I/O (As per actual)	Nos	23	Cat 6 E250 Unshielded RJ45 Jack Tool-less jack Jack can be reused even after wiring mistake Housing material Plastic Conductor AWG 26 - 22 Insulation diameter max. 1.6 mm Contact surface Gold, 1.6 µm IEEE 802.3 1GBASE-T, IEEE 802.3at Insulation resistance > 500 MΩ Voltage Rating (Maximum) <75 VDC Lead Through Resistance < 200 MΩ
3	RJ45 Connector (As per actual)	Box	4	Supports PoE++ (802.3bt) 4PPoE, up to 100W connectors with metal shield and are compatible with both stranded and solid conductors, typically supporting 23 to 24 AWG wires
4	Face Plate (single shutter) (As per actual)	Nos	23	Faceplate for 1x Jack Color white Suitable for Cat 6, Cat 6A Jack Number of ports 1
5	Patch Panel (Loaded with I/Os)	24 Port	1	Flush mount 24 Port Copper Patch Panel 1U, 19" Black Housing material Steel Halogen-free Integrated cable strain relief Loaded with I/Os Imported
6		16 port	1	Flush mount 16 Port Copper Patch Panel 1U, 19" Black Housing material Steel Halogen-free Integrated cable strain relief Loaded with I/Os Imported

7	Cable Manager	Nos	3	Cable Management Panel 19'', 1U Black Housing material Powder-coated metal and polycarbonate tray
9	UPS 1 KVA with 1 hr backup	Nos	4	1 KVA UPS with a back up time of 1 Hr for IT load of 300 W Single phase, pure sin wave Output Norminal Output Voltage 220V Output Frequency: 50 Hz
10	4U Network Cabinets Indoor With PDU	Nos	4	Type: 19-inch, 4U wall-mount network cabinet with PDU Material: Cold-rolled steel, powder coated (black) Size: Approx. 600(W) × 450(D) × 280(H) mm Mounting: Wall mount with adjustable vertical rails Door: Lockable tempered glass front door Panels: Removable side panels Cable Entry: Top and bottom cable entry provision Ventilation: Vent slots with fan mounting provision Load Capacity: Minimum 40 kg Accessories: Complete with cage nuts, mounting screws, and keys Application: Suitable for mounting network switches and ODF
11	CAT 6 Cable Indoor For LAN, CCTV (As per actual)	m	395	Category 6 Cable type U/FTP Bandwidth 250 MHz Conductor Copper Wire, AWG 23 Outer jacket material LSZH™/FRNC Delay skew 4 ns/100 m Voltage rating Less than 75 V d.c max and less than 50 V a.c max Coupling attenuation 60 dB Insulation resistance 5000 MΩ*km Surface transfer impedance 100 mΩ

12	CAT 6 Cable Outdoor For LAN, CCTV (As per actual)	m	305	Category 6 Cable type STP Bandwidth 250 MHz Conductor Copper Wire, AWG 23 Outer jacket material LSZH™/FRNC Delay skew 4 ns/100 m Voltage rating Less than 75 V d.c max and less than 50 V a.c max Coupling attenuation 60 dB Insulation resistance 5000 MΩ*km Surface transfer impedance 100 mΩ
13	Copper Patch Cords	1 m	15	Cat 6 Patch Cord Connector type RJ45 - 8/8 to RJ45 - 8/8 Conductor Copper Wire, AWG 24 Delay skew 45 ns/100 m Propagation delay 5.38 ns/m at 100 MHz Insulation resistance 500 MΩ*km Surface transfer impedance 100 N/A Connector Material Pin gold plated 50µ inch
14		3m	17	Cat 6 Patch Cord Conductor Copper Wire, AWG 24 Delay skew 45 ns/100 m Propagation delay 5.38 ns/m at 100 MHz Insulation resistance 500 MΩ*km Surface transfer impedance 100 N/A Connector Material Pin gold plated 50µ inch
15	ODF Loaded with Pigtails and Couplers	16 Ports	1	16 Core LANscape® Fiber Patch Panel 08 SC UPC Duplex Single Mode Adapter Fibre Category Single Mode OS2 16 SC Simplex Single Mode SMF-28®Ultra fiber Pigtails Easy to remove top cover Maximum 4 cable number in basic unit with accessories
16		04 Ports	4	4 Core LANscape® Fiber Patch Panel 2 SC UPC Duplex Single Mode Adapter Fibre Category Single Mode OS2 4 SC Simplex Single Mode SMF-28®Ultra fiber Pigtails Easy to remove top cover Maximum 4 cable number in basic unit with accessories

17	OFC 12 Core (Single Mode) (As per actual)	m	840	12 Core SST™ Central Tube Steel Armour Outdoor Cable Fibre Category Single Mode OS2 Outer jacket material Linear Low Density Polyethylene (LLDPE) Corrugated steel tape armour with dielectric strength elements (aramid yarns) and swellable elements
18	OFC 04 Core (Single Mode) (As per actual)	m	80	4 Core Single Mode SST™ Central Tube Dielectric Armor Outdoor Cable 4F E9 SMF-28e+® ITU G652.D CT 3.0 Fiber Category Single Mode OS2 Outer Jacket Material Linear Low Density Polyethylene (LLDPE)
19	OFC Duplex Patch Cords(SC-LC)	1m	24	Fiber Patch Cord Single Mode 1 Meters Long LC Duplex UPC - SC Duplex UPC Maximum Insertion Loss (dB) ≤ 0.25 Maximum Reflectance (dB)≤ -45 Ferrule Ceramic Core Diameter 9 µm Fibre Type/Class G.657.A1 Operating Temperature -20°C to 70°C Bend Radius (Single-Mode) 10 mm
20	OFC Duplex Patch Cords (LC-LC)	3m	10	Fiber Patch Cord Single Mode 3 Meters Long LC Duplex UPC - LC Duplex UPC Maximum Insertion Loss (dB) ≤ 0.25 Maximum Reflectance (dB)≤ -45 Ferrule Ceramic Core Diameter 9 µm Fibre Type/Class G.657.A1 Operating Temperature -20°C to 70°C Bend Radius (Single-Mode) 10 mm
21	OFC Enclosures	Nos	5	Suitable for buried, duct and aerial lines For straight and branching application Capacity for up to 24 splices IP 68 Closure sealing made of re-usable silicone
22	Main Holes	Nos	10	Providing and installation of RCC OFC manhole (900×900×900 mm) with heavy duty cover, duct entry provision, complete with base, frame, and accessories
23	Duct Patti 16*25	Length	45	PVC duct patti 16×25 mm, made of rigid PVC, 3 m length, for OFC duct spacing and protection, complete in all respects.

24	Duct Patti 25*25	Length	20	PVC duct patti 25x25 mm, made of rigid PVC, 3 m length, for OFC duct spacing and protection, complete in all respects
25	PVC Pipe (1 inch) with Bands and Sockets (As per actual)	Length	20	Lengths with elbows, bends and sockets
26	PVC Flexable Pipe (1 inch) (As per actual)	m	25	PVC 1" solid Flexible pipe
27	HDPE Pipe with warning tape (As per Actual)	m	920	HDPE pipe, 2" dia, made of high-density polyethylene (HDPE), suitable for underground OFC installation, complete with warning tape and all accessories.
28	VFL Device	Nos	2	Providing and supply of Visual Fault Locator (VFL), 650 nm laser source, minimum 5 km range, compatible with single-mode and multi-mode fiber, complete with rechargeable battery and accessories.
29	Network Tool Kit	Nos	2	Providing and supply of networking tool kit including crimping tool, punch down tool, cable stripper, cutter, LAN tester, and accessories, suitable for Cat-6/Cat-5e cable installation and testing.
30	OFC Route Tags (As per Actual)	Nos	20	OFC route markers/tags made of durable UV-resistant PVC/FRP, with clear OFC identification and route details, suitable for outdoor installation, complete in all respects
31	Svcs (As per actual)	1 Job		Laying, instl, commissioning, digging, backfilling, testing of Infra, Network, Comm and their passive component, successful handing over of proj

User end Equipment – Taftan

Ser	Eqpt	SPECIFICATION	Taftan	Gabd	Sost
1	**Laptop**	•**Core Ultra 7** Processor: Intel Core ultra Memory: 16GB DDR5 or higher Storage: 1 TB M.2 SSD •**Common Features** Graphics: Integrated intel Finger print: Fingerprint sensor Display: 15-16" Webcam: FHD Camera with privacy shutter Battery: 40 WHR or above express charge capable Audio: Integrated dual array microphones Wireless mouse Carrying case- Same brand bag Charger- Same brand Warranty: Minimum 1 Year replacement	10	11	8

| 3 | **Printers** | Print speed black (ISO, letter): Up to 21 ppm 1
Print speed black (ISO, A4): Up to 20 ppm 1
First page out black (letter, ready): As fast as 8.3 sec
First page out black (A4, ready): As fast as 8.5 sec
Duty cycle (monthly, letter): Up to 8,000 pages
Duty cycle (monthly, A4): Up to 8,000 pages
Recommended monthly page volume: 100 to 1000
Print quality black (best): Up to 600 x 600 dpi
Print languages: PCLm/PCLmS, URF, PWG
Print technology: Laser
Connectivity, standard: 1 Hi-Speed USB (compatible with USB 2.0 specifications)
Wireless capability: No
Display: LED
Processor speed: 500 MHz
Maximum Memory: 16 MB Flash ROM; 16 MB SDRAM; 32 KB NVRAM
Memory: 16 MB
Internal Storage: None
Paper handling input, standard: 150-sheet input tray
Paper handling output, standard: 100-sheet output bin
Media types: Plain paper, envelope, postcard, label
Media sizes supported: A4; A5; A6; envelopes (C5, DL); custom
Media sizes, custom: 105 x 148 to 216 to 355.6mm | 6 | 6 | 2 |

| 4 | **Scanners** | **Recommended Daily Volume:** 3,000 pages per day or above
Scanner Type: ADF (Automatic Document Feeder)-Sheet Fed
Scanning modes: Black-and-white/grayscale/color
Scan Speed: 25 ppm/50 IPM at 200 dpi
Scanning Technology & Illumination: Dual CIS (CMOS) & Single RGB LEDs
Optical Resolution: 600 dpi
Output Resolution:
75/100/150/200/240/250/260/300/400/500/600/1200 dpi
Paper Thickness and Weight: 30-430 g/m²
Paper Feeding Detection: Multi feed with ultrasonic technology, **Intelligent Document Protection**
Feeder: 75 sheets or above
Connectivity / Interface: USB 3.0 High Speed (cable included) - USB 3.2 compatible | 3 | 7 | 2 |
| 5 | **IP Phone Set** | HD Wideband Audio
PoE
Reasonable screen size
Dual Gigabit Ethernet ports
Programmable multiple soft keys
Context sensitive soft keys
Capable of storing at least 10 x numbers
Hands Free mode Full Duplex
Power Adaptor Option
Dedicated Mute / hold Key
Call history | 7 | 9 | 2 |

Annex **"B"**

Tender No:

1.   Financial offer must be as per following formats: -

Ser	Equipment	Qty	Unit Cost Without Tax (Rs)	Unit Cost including Tax (Rs)	Total Cost Without Tax (Rs)	Total Cost Without Tax (Rs)
LOT – 1 (Server, Switches and Firewall)						
a.	SERVERS	3				
b.	HCI OR Traditional 3-Tier (Server-Storage-Network) Architecture	1				
c.	Active Equipment					
(1)	Firewall	3				
(2)	24 Ports Fiber Switches	5				
(3)	24 Ports Access Switch	4				
(4)	16 Ports POE Access Switches	2				
(5)	08 Ports POE Access Switches	19				
(6)	Wireless Router/Access Points	4				

(7)	Wireless Station (Point to MultiPoint)	1				
Total Cost (Rs)						
LOT - 2						
a.	**Indoor Bullet Cameras**					
(1)	Renovation of IT Room	3				
(2)	1.5 Ton Comfort Cooling Unit	4				
(3)	Power DB	3				
(4)	Biometric Device	3				
(5)	Rack ATS	2				
(6)	Earthing System	3				
(7)	C02 Gas Cylinders	6				
(8)	CCTV System for IT Room	3				
b.	Smart Rack	3				
c.	**Passive Work - Taftan**					
(1)	RJ45 Connector (As per actual)	2 Box				
(2)	Face Plate, I/O, Back Box	40				
(3)	Patch Panel Imported (Loaded with I/Os)	1 (24 Port)				
(4)	Cable Manager	1				

(5)	UPS 1 KVA	12				
(6)	4U Network Cabinets Indoor With PDU	11				
(7)	CAT 6 Cable Indoor For LAN, CCTV (As per actual)	750 meters				
(8)	CAT 6 Cable Outdoor For LAN, CCTV (As per actual)	792 meters				
(9)	Copper Patch Cords	41 x 3 meter				
(10)	ODF Loaded with Pigtails and Couplers	2 x 24 Ports				
(11)	ODF Loaded with Pigtails and Couplers	10 x 04 Ports				
(12)	OFC 24 Core (Single Mode) (As per actual)	948 meter				
(13)	OFC 08 Core (Single Mode) (As per actual)	720 meters				
(14)	OFC 04 Core (Single Mode) (As per actual)	885 meters				
(15)	OFC Duplex Patch Cords(SC-LC)	60 x 1 meter				
(16)	OFC Duplex Patch Cords(LC-LC)	10 x 3 meters				
(17)	OFC Enclosures	12				
(18)	Main Holes	24				
(19)	Duct Patti 16*25	50				

(20)	PVC Pipe (1 inch) 10 feet with Bands and Sockets (As per actual)	12				
(21)	PVC Flexable Pipe (1 inch) (As per actual)	30 meters				
(22)	HDPE Pipe (As per Actual)	2700 meters				
(23)	VFL Device	2				
(24)	Network Tool Kit	2				
(25)	OFC Route Tags (As per Actual)	30				
(26)	Svcs (As per actual)	1 Job				
d.	**Passive Work - Gabd**					
(1)	RJ45 Connector (As per actual)	3 Box				
(2)	Face Plate, I/O, Back Box	24				
(3)	UPS 1KVA	4				
(4)	4U Network Cabinets Indoor With PDU	4				
(5)	CAT 6 Cable Outdoor For LAN, CCTV (As per actual)	410 meters				
(6)	CAT 6 Cable Indoor For LAN, CCTV (As per actual)	300 meters				
(7)	Copper Patch Cords 3m	44				

(8)	ODF Loaded with Pigtails and Couplers	2 x 4 Ports				
(9)	OFC 04 Core (Single Mode) (As per actual)	260 meters				
(10)	OFC Duplex Patch Cords(SC-LC)	14 x 1 meter				
(11)	OFC Duplex Patch Cords(LC-LC)	14 x 3 meters				
(12)	Main Holes	2				
(13)	PVC Pipe 1" with bends and sockets	20				
(14)	Flexible Pipe 1" (As per actual)	65 meters				
(15)	Duct Patti 16*25	27				
(16)	HDPE Pipe 2" Dia (As per Actual)	260 meter				
(17)	VFL Device	2				
(18)	Network Tool Kit	2				
(19)	Svcs (As per actual)	1 Job				
e.	**Passive Work - Sost**					
(1)	Back Box (As per actual)	23				
(2)	I/O (As per actual)	23				
(3)	RJ45 Connector (As per actual)	4 x Box				
(4)	Face Plate (single shutter) (As per actual)	23				

(5)	Patch Panel (Loaded with I/Os)	1 x 24 Port				
(6)	Patch Panel (Loaded with I/Os)	1 x 16 Port				
(7)	Cable Manager	3				
(8)	UPS 1 KVA with 1 hr backup	4				
(9)	4U Network Cabinets Indoor With PDU	4				
(10)	CAT 6 Cable Indoor For LAN, CCTV (As per actual)	395 meters				
(11)	CAT 6 Cable Outdoor For LAN, CCTV (As per actual)	305 meters				
(12)	Copper Patch Cords	15 x 1 meter				
(13)	Copper Patch Cords	17 x 3 meters				
(14)	ODF Loaded with Pigtails and Couplers	1 x 16 Ports				
(15)	ODF Loaded with Pigtails and Couplers	4 x 4 Ports				
(16)	OFC 12 Core (Single Mode) (As per actual)	840 meters				
(17)	OFC 04 Core (Single Mode) (As per actual)	80 meters				
(18)	OFC Duplex Patch Cords(SC-LC)	24 x 1 meter				
(19)	OFC Duplex Patch Cords (LC-LC)	10 x 3 meters				

(20)	OFC Enclosures	5				
(21)	Main Holes	10				
(22)	Duct Patti 16*25	45				
(23)	Duct Patti 25*25	20				
(24)	PVC Pipe (1 inch) with Bands and Sockets (As per actual)	20				
(25)	PVC Flexable Pipe (1 inch) (As per actual)	25 meters				
(26)	HDPE Pipe with warning tape (As per Actual)	920 meters				
(27)	VFL Device	2				
(28)	Network Tool Kit	2				
(29)	OFC Route Tags (As per Actual)	20				
(30)	Svcs (As per actual)	1 Job				
f.	**User End Equipment**					
(1)	Laptop	29				
(2)	Printers	14				
(3)	Scanners	12				
(4)	IP Phone Set	18				
Total Cost (PKR)						

Note

a.   Price is required to be quoted on **FOR Taftan, GABD and Sost** basis, which must include delivery, installation charges and all taxes / duties. Brochure / manufacture specifications (in original) must be attached

b.   Firm must submit their financial offer as per above mentioned schedule to tender otherwise offer will be rejected.