

BHARAT HEAVY PLATE & VESSELS LIMITED.,
(A Subsidiary Bharat Heavy Electricals Limited)
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NOTICE INVITING TENDER(NIT)

**Category of Tender: TWO BID
(PRICED + UN - PRICED)**

SUB: OFC & BLADE SERVER

Our Ref: **MM/2/CS&IS/Capex/01/2012-13/CAP/W-098/5098**

DATE: 17.08.2013

Sealed quotations in duplicate are invited from suppliers on **or before 10.09.2013** **SUPERSCRIBING OUR REFERENCE AND CATEGORY OF TENDER** on the cover, for supply of the under mentioned stores within the above due date, otherwise send **REGRET LETTER**, strictly subject to the Terms & Conditions attached herewith.
LATE TENDERS ARE NOT ACCEPTABLE.

ITEM No.	DESCRIPTION / SPECN. / SIZE	QTY
1.	OFC & BLADE SERVER	LOT
	Encl: 1. Qualifying Criteria PART A 52 pages	

For BHARAT HEAVY PLATE & VESSELS LIMITED,

For Dy. GENERAL MANAGER (MM)

Sl. No.	DESCRIPTION	BIDDERS OFFER
1.0	ELIGIBILITY CRITERIA	
	Eligibility criteria for Bidders	
1.1	The bidder should be a company /firm registered in India.	
1.2	The bidder should be an existing Network System Integrator for more than 5 years.	
1.3	The bidder should possess ISO 9001certification and ISO 27001 certification. The certifications should be current and the scope should include Network implementation.	
1.4	<p>The bidder should have experience in executing Enterprise Networks. The bidder should have successfully executed Enterprise LANs during the last 5 years meeting the conditions below</p> <p>a) The bidder shall meet any of the below two points</p> <p>1. At least Two Enterprise LANs, each with order value of not less than Rs.2 Crores on Lease Rental or Rs. 1.25 Crores on outright purchase basis,</p> <p align="center">Or</p> <p>2. At least One Enterprise LAN, with order value of not less than Rs. 3 Crores on Lease Rental or Rs. 2 Crores on outright purchase basis.</p> <p align="center">And</p> <p>b) The bidder should also have successfully executed at least One Enterprise LAN in the last 5 years with order value of not less than Rs. 1 Crore on Lease Rental or Rs 75 Lakhs on outright purchase basis.</p>	
1.5	At least one of these contracts (in a/b above) or any other contract with order value of not less than Rs. 1 Crore, shall be on lease rental basis. The lease rental contract should have been successfully completed or if continuing, should have completed at least 2 years.	
1.6	PO copies and commissioning certificates (for points 4 and 5) should be enclosed. PO's and evidences shall be in the name of bidder. POs and evidences in the name other than that of bidder shall not be considered.	
1.7	However, if the POs submitted by the bidder are not of the same OEM quoted for this tender, then the bidder shall submit at least one PO for 1000 node campus LAN in India, for the OEM make being submitted for this tender.	
1.8	The bidder should have OEM certified professionals in its rolls who possess experience of implementing /maintaining Enterprise Network Solution. List of certified professionals should be submitted.	
1.9	The bidder should have installed, configured and maintained Blade server. Evidence shall be submitted.	
1.10	The Bidder should have installed, configured and maintained UTM appliances. Evidence shall be submitted.	
1.11	The bidder should not be under Hold or Blacklist by any of BHEL units or BHPV as on bid opening date. The bidder should give a declaration on this.	
1.12	The bidder should be able to provide committed support for quoted Network actives (Data switches and NMS), Blade Servers & UTM for a minimum period of 7 years from the respective OEMs .	

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1.13	The bidder should be an authorized service/support partner of the OEMs.	
1.14	Authorization letters from the OEMs for Network actives, Blade Servers & UTM shall be enclosed to participate in this tender.	
1.15	The OEMs for passives and racks shall be ISO 9000 certified.	
1.16	The bidder should enclose authorization letters to participate in this tender, from respective OEMs for passives and racks	
2.0	Eligibility criteria for OEMs of Actives, Blade Server & UTM.	
2.1	OEM should possess ISO 9001 certification.	
2.2	OEM should have a Technical Assistance Center in India.	
2.3	OEM should have at least one Spares Logistics Depot in South India within 700 Km from Vishakapatnam	
2.4	All Switches should demonstrate interoperability with standards-based switches of other manufacturers	
2.5	OEMs should provide first line products and shall submit the letter to ensure the same.	
	Note :	
A	Certificates and evidences should be provided as a proof for all the above mentioned eligibility criteria.	
B	If the bidder and OEM do not fulfill any of the eligibility criteria mentioned above, the offer will be rejected.	
C	The BIDDER / VENDOR shall submit the offer in TWO PARTS. 1. Technical Offer [with PART A & PART B]& commercial offer 2. Price Bid.	
D	The Technical Offer shall contain a comparative statement of Technical Specifications demanded by BHPV and Offer Details submitted by the Bidder, against each clause. A just ' CONFIRMED ' or ' COMPLIED ' or ' YES ' or ' NO-DEVIATION ' or similar words in the technical comparative statement may lead to disqualification of the Technical Offer.	
E	The Technical Offer shall be supported by product Catalogues & Data Sheets and also technical details of Bought-Out-Items with copies of Product Catalogue to the extent possible.	
F	The Commercial Offer (given with the Technical Offer) shall contain the Scope of Supply and the Un-Priced Part of the Price-Bid, for confirmation.	

GENERAL

BHPV-Visakhapatnam (Bharat Heavy Plates and Vessels Limited – Visakhapatnam) is a wholly owned subsidiary of Bharat Heavy Electricals Limited (BHEL), which is a large engineering enterprise engaged in energy-related / infrastructure sector.

A new LAN is proposed to be implemented in BHPV-Visakhapatnam. UTP and fiber links are to be newly laid and terminated. Switches, servers and UTM appliance are to be installed and configured.

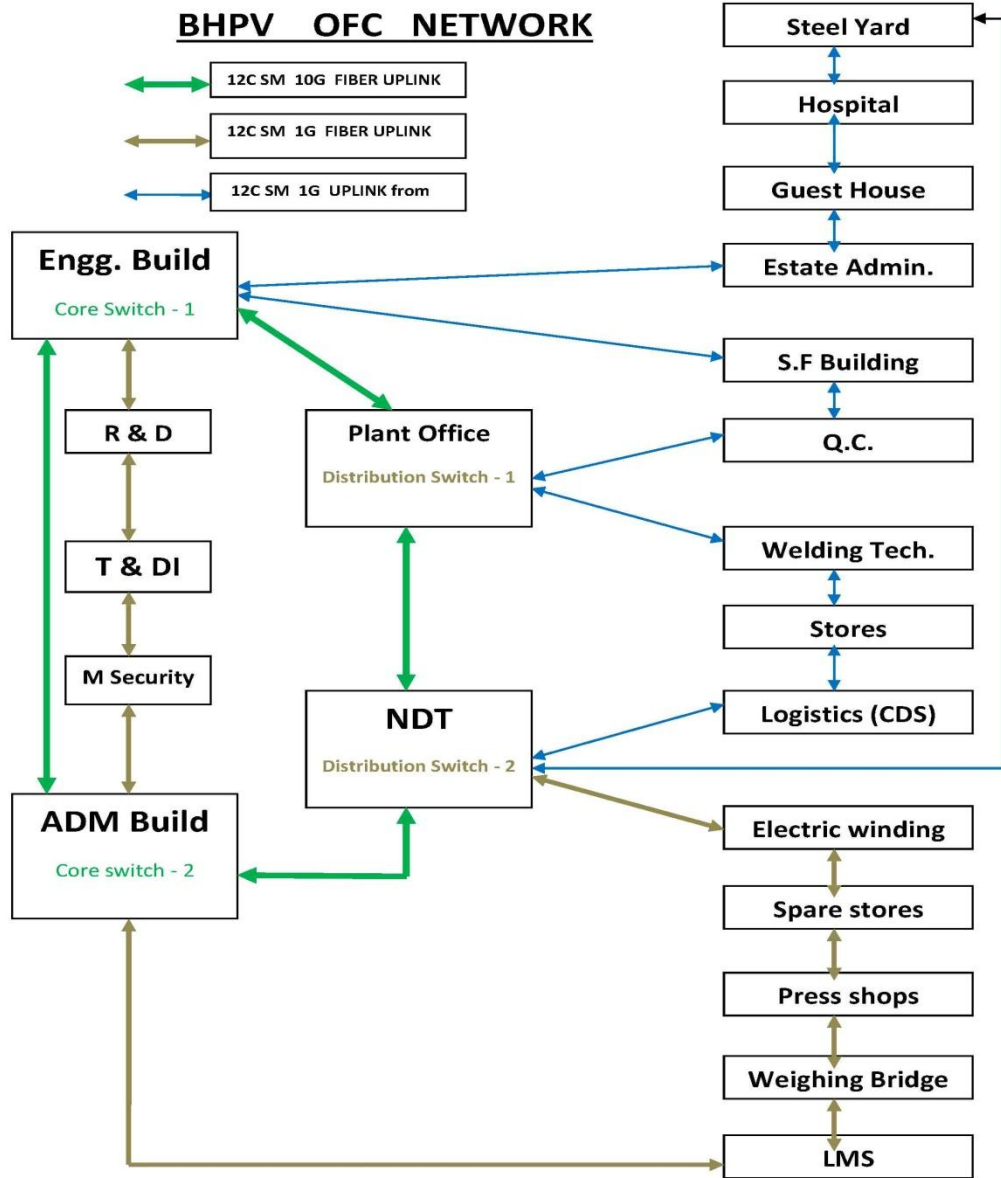
This proposal consists of the following:

1. Supply and laying of fiber optic cables, UTP cables and cable terminations.
2. Supply, installation and configuration of data switches.
3. Establishment of connectivity, testing, commissioning and documentation.
4. Supply, installation and configuration of Network Management System (NMS).
5. Supply, Installation and Configuration of Blade Servers.
6. Supply, Installation and Configuration of UTM (Unified Threat Management) appliance.
7. Maintenance of all the above components for a period of 5 years.

Procurement of cables, accessories & racks and installation of the same shall be on outright basis.

Procurement of Data switches, NMS, Blade servers & UTM and installation / commissioning / maintenance of the same shall be on 5 year lease rental contract.

Sl. No.	DESCRIPTION / SPECIFICATION	BIDDER'S OFFER
1.0	SPECIAL INSTRUCTIONS TO THE BIDDER	
1.1	The offer shall be submitted in full, covering the total scope. Partial offer will not be accepted and will not be considered for evaluation.	
1.2	The bidder shall sign all the pages of the Tender document and all the supporting documents. Signing of the document means that the bidder has fully understood the Tender and complies with all the requirements.	
1.3	The bidder shall give cross reference for all the points, clearly mentioning the supporting document and highlight the reference portion in the document.	
1.4	All software updates and firmware updates of switches, Blade Servers & UTM shall be provided during the entire 5 year lease period at no extra cost. The bidder shall give commitment letter in this regard,	
1.5	All the switches & NMS quoted should be from same make.	
1.6	All the passive items quoted should be from same make.	
1.7	Bidder shall supply and use the necessary HDPE / Casing capping / Conduit / GI pipe of ISI standard.	



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2.0	SCOPE OF WORK The scope of work is given in the following sections.	
2.1	Scope of work – Data switches:	
2.1.1	Supply and installation of switches	
2.1.2	Initial configuration of all switches as per BHPV's requirement	
2.1.3	Configuring of VLAN's, IPv6 / IPv4, QoS & Security Features as per BHPV requirement	
2.1.4	Implementing High availability features in the switches deployed, as per BHPV's requirement	
2.1.5	Testing and documentation	
2.1.6	Customer orientation training for 2 days	
2.1.7	Maintenance	
2.2	Scope of work - Network Management System:	
2.2.1	Supply of NMS	
2.2.2	Installation and configuration	
2.2.3	Maintenance	
2.3	Scope of Work – Passives	
2.3.1	Supply and laying of fiber optic cables/ copper cables and cable terminations.	
2.3.2	Supply and Installation of Racks, LIU's, IO's and Patch panels.	
2.3.3	Termination of fiber / UTP cables at LIU's, IO's and Patch panels.	
2.3.4	Establishment of connectivity, testing and commissioning.	
2.3.5	The fiber / UTP cable and terminations, covered under the scope shall be tested and test report shall be submitted.	
2.3.6	All installations shall be done by certified technicians and the bidder should submit the certification credentials of the technicians.	
2.3.7	The fiber cable within the scope of the bidder should be certified for a life span of 20 years.	
2.3.8	The materials shall be moved to the respective place of work within the campus by the bidder.	
2.3.9	The bidder should provide sample for the passive components, if required.	
2.4	Scope of Work – Blade Server	
2.4.1	Supply and Installation of Blade servers with Specified operating system and maintenance	
2.4.2	Installation of Windows services DHCP, DNS, Active Directory, Windows Patch Updation Server, and maintenance.	
2.4.3	Installation of Redhat Linux Server.	
2.4.4	Installation, configuration and maintenance of Open Source Mail services in Linux	
2.4.5	Installation configuration and maintenance of Web services in Linux	
2.4.6	Documentation of all configuration and customer orientation training for 2 days for above services.	

Sl. No.	DESCRIPTION / SPECIFICATION			BIDDER'S OFFER
2.5	Scope of Work – UTM Appliance			
2.5.1	Supply & Installation of UTM Appliance with required license for URL Filtering, IPS and Anti spam for minimum 1000 users.			
2.5.2	Configuring the UTM Services			
2.5.3	Maintenance			
3	BILL OF MATERIAL			
3.1	Bill of Quantity of Actives, Blade servers and UTM:			
	The bill of material for the active and passive components to be installed under this contract is given in the following sections.			
	Sl. No.	DESCRIPTION	UNIT	QTY
	1	Core Switch	No	2
	2	Distribution Switch	No	2
	3	Access Switch - I	No	5
	4	Access Switch - II	No	17
	5	Access Switch - III	No	16
	6	Network Management System	No	1
	7	UTM Appliance	No	1
	8	Blade chassis	No	1
	9	Blades Servers	No	6
	10	Windows 2012 R2 Standard Edition	No	4
	11	Redhat 6 Enterprise Linux Server	No	2
3.1.1	Material Specification – Actives			
3.1.1.1	Core Switch:			
	Core Switch shall be Chassis based Multilayer architecture capable of redundant supervisory modules per chassis. One core switch shall be placed at Admin Building and other at Engineering Building. Each core switch shall have			
	<ul style="list-style-type: none"> • Two supervisory modules • Redundant power supplies • 10Gbps Single mode Fiber module populated with 6 No. SM 10G Fiber Transceivers • 1 Gbps Single mode Fiber module populated with 8 No. SM 1G Fiber Transceivers and • Ethernet Module populated with 48 ports 10/100/1000 Mbps copper ports. 			
	Switch shall meet the following specifications:			
3.1.1.1.1	Generic Requirements	Vendor to Confirm & furnish details as applicable		
A	Make CISCO/ JUNIPER / HP			
B	The Switch should be Chassis based Multilayer Switch Architecture with minimum 6 usable slots			
C	The Switch should have Two Supervisor Modules for redundancy			
D	The switch should support Layer 2 / Layer 3 switching / routing			

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E	The switch should be 100% passive back-plane		
F	The Switch should have Power supply redundancy with a minimum of two hot-swappable power supplies		
G	The Switch should support online insertion and removal of the Supervisor		
H	The Switch should support online insertion and removal of payload modules		
I	The Switch should support hot-swappable fan trays		
J	The Switch should support a distributed switching architecture		
K	The Switch should support aggregate data forwarding rates up to 700 Million packets per second (Mpps) for IPv4 traffic		
L	The Switch should support 1 Gbps interfaces		
M	The Switch should support 10 Gbps interfaces		
N	The Switch should support 40 Gbps interfaces		
O	Switch should support service modules like firewall, Server load balancer, IPS etc.		
3.1.1.1.2	Performance & Scalability	Vendor to Confirm & furnish details as applicable	
A	The Switch should support single fabric throughput of 2 Tbps and when combined together the aggregate switching capacity of both the switches (in virtual switching mode) should be 4 Tbps or higher		
3.1.1.1.3	Layer 2 features	Vendor to Confirm & furnish details as applicable	
A	The Switch should support Layer 2 switch ports		
B	The Switch should support IEEE 802.1Q VLAN encapsulation		
C	The Switch should support IEEE 802.3ad Link aggregation across modules		
D	The Switch should support move / add / changes of VLANs dynamically		
E	The Switch Should be able to discover the neighboring device of the same vendor giving the details about the platform, IP Address, Link connected through etc.		
F	The Switch should support a mechanism to detect connectivity issues with both fiber and copper cabling to ensure that a partially failed link is shut down on both sides, to avoid L2/L3 protocol convergence issues		
G	The Switch should have facility to display MAC Address Table and also clear the Table		
H	The Switch Shall have IEEE compliance for 802.1Q VLAN, 802.1p QoS, 802.1d STP, 802.1w RSTP, 802.1s MSTP, 802.3ad LACP, IEEE 802.1ab Link Layer Discovery Protocol.		
I	The Switch should support 802.1s - Per-VLAN Group Spanning Tree Protocol		

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3.1.1.1.4	Layer 3 Features	Vendor to Confirm & furnish details as applicable	
A	The Switch should support basic Routing-Static IP routing, RIP v1/v2, RIPng and policy based routing		
B	The Switch should support hardware enabled advance IP routing protocols OSPF, OSPFv3, BGPv4, PIM-SM, PIM-DM, PIM-SSM etc.		
C	The Switch should support VRRP or equivalent for High Availability		
D	The Switch should support Rapid convergence Layer 3 protocols		
E	The switch should support the ability to configure Layer 3 Aggregate links		
F	The Switch should support 512K IPv4 Routes		
G	The Switch should support 512K IPv6 Routes		
H	The Switch should support OSPFv2		
I	The Switch should support RFC 1850 - OSPFv2 Management Information Base (MIB), traps		
J	The Switch should support RFC 1723 - RIPv1		
K	The Switch should support RFC 2453 - RIPv2		
3.1.1.1.5	IPv6	Vendor to Confirm & furnish details as applicable	
A	The switch should support IPV6 in hardware without the addition of special modules to achieve IPv6 forwarding		
B	The Switch should support aggregate data forwarding rates up to 2K million packets per second (Mpps) for IPv6 traffic		
C	The Switch should support Separate IPv6 and IPv4 interface statistics on egress and ingress		
D	The Switch should support Active / Active for both intra-chassis and inter-chassis redundancy		
E	The Switch should support OSPFv3		
F	The Switch should support the capability to run multiple OSPFv3 instances of the routing process on a single link		
G	The Switch should support Static Route for IPv6		
H	The Switch should support Policy-based routing (PBR) or equivalent for IPv6		
I	The Switch should support Uni cast Reverse Path Forwarding (uRPF) for IPv6		
J	IPv6 ACLs should support TCP and UDP protocol		
K	IPv6 ACLs should support Source and destination port numbers		
L	IPv6 ACLs should support TCP flags, including SYN, ACK, FIN, PSH, URG, RST, and Established (ACK and RST)		
M	IPv6 ACLs should support ICMPv6 packets with source or destination address and ICMP type		
3.1.1.1.6	Multicast	Vendor to Confirm & furnish details as applicable	
A	The Switch should support minimum 2K Multicast Routes		

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B	The Switch should support IGMP v1, v2, v3		
C	The Switch should support IP multicast routing protocols PIM & SSM		
D	The switch should support minimum 2K of IPv4 multicast table size and 1K of IPv6 multicast table size.		
E	The Switch should support IGMP (Internet Group management protocol)		
F	The Switch should support IGMP v1, v2, v3		
G	The Switch should support IGMP v1, v2, v3 Snooping		
H	The Switch should support GARP (Multicast Registration Protocol)		
3.1.1.1.7	Management & Monitoring	Vendor to Confirm & furnish details as applicable	
A	The Switch must provide means to auto configure		
B	In-service software upgrade		
C	The Switch should support the revised IP-MIB that includes statistics collection for IPv6		
D	The Switch should support the revised IP-FORWARD-MIB		
E	The Switch Shall have TACACS+/RADIUS enabled.		
F	The Switch Shall have SSHv1 , SSHv2, SNMPv1, SNMPv2, SNMPv3 and NTP support		
G	The Switch Shall have Management Access Filter (Access Policies)		
H	The Switch should support Web based management console		
I	The Switch should support Telnet and TFTP access		
J	The Switch should support RMON - Remote Monitoring (RMON) with 4 RMON groups (history, statistics, alarms, and events).		
K	The Switch should support SNMP agent - SNMPv1, SNMPv2c, SNMPv3.		
L	The Switch must be able to provide traffic counters (packet or byte) for logical interfaces		
M	The Switch must support the capability to check traffic statistics (packet or byte) across dedicated stack ports		
N	The Switch should support Protocol Analyzer to capture network traffic from a port mirroring session and store the captured packets in a local memory buffer.		
O	The Switch should support features to deliver alerts to multiple recipients, each with configurable message formats and content categories.		
P	The Switch should support Multiple message categories including configuration, diagnostics, environmental conditions, inventory, and syslog events.		
Q	The Switch should support Filtering of messages by severity and pattern matching.		

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R	The Switch should support Backplane Traffic Monitoring to monitor the backplane and fabric- channel traffic utilization at a configured interval and threshold		
S	The Switch should be able to report buffer watermark messages for active buffering monitoring		
T	The Switch must be able to provide relevant CLI to ignore version mismatches when performing an In-Service Software Upgrades		
U	The Switch must provide readily available documentation on version compatibility across software releases for hitless upgrades		
V	Switch should provide accurate reporting on energy usage and consumption		
W	Switch should offer power management solution, including third party integration		
X	The Switch should support creating and running programs or scripts directly through the CLI or Tool command Language		
3.1.1.1.8	Port Mirroring	Vendor to Confirm & furnish details as applicable	
A	The Switch should support port mirroring from one or more ports		
B	The Switch should support port mirroring from one or more aggregated links		
C	The Switch should support port mirroring from one or more VLANs		
D	The Switch should support Port Mirroring without affecting the switching of traffic on sources		
E	The Switch should support local Port mirroring on a single switch		
F	The Switch should support remote port mirroring where in source ports or source VLANs, and destinations on different switches		
G	The Switch should support port mirroring for Ingress traffic		
H	The Switch should support 2 port mirroring sessions for Ingress traffic		
I	The Switch should support port mirroring for egress traffic		
J	The Switch should support 2 port mirroring sessions for egress traffic		
K	The Switch should support a permit list of the ports that are valid for use as port mirroring destination ports to avoid accidental configuration of destination ports		
3.1.1.1.9	Virtual Switching	Vendor to Confirm & furnish details as applicable	
A	The Switch should support combining of two separate physical switch in a single logical unit without any additional / external devices		

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B	The Virtual switch should support the Standby Supervisor to take over in the event of a failure on the Active Supervisor		
C	The Virtual switch should support Stateful Switch over in case of a failure of the Active Supervisor		
D	The Virtual switch Active Supervisor is responsible for the control plane of both the switches		
E	The Virtual switch data planes of both the physical switches should be active		
F	The Virtual switch should support minimum 768 ports of 1Gbps		
G	The Virtual switch should support minimum 128 ports of 10Gbps		
H	The switch should support upgrade of Software on the standby Supervisor		
I	The switch should support In-Service OS upgrade mechanism with a minimal disruption of traffic through upgrade process.		
J	The Virtual Switch must be able to provide relevant debugging capabilities and tools for troubleshooting interconnecting links (SPAN, PING, etc.)		
3.1.1.1.10	Stateful Switch Over & Non-Stop Forwarding	Vendor to Confirm & furnish details as applicable	
A	The switch should support Stateful Switchover if the Active supervisor fails without any impact to system performance		
B	The switch should support stateful feature information between the two Supervisors in the same chassis		
C	The switch should support user session information is maintained during a switchover		
D	The switch should support forwarding of network traffic with no loss of sessions during a Supervisor switchover		
E	The switch should support switchover from Active Supervisor to the Standby Supervisor in less than 3 seconds		
F	The switch should support Fast Software Upgrade to reduce planned downtime		
G	The switch should support Nonstop Forwarding		
H	The switch should support Nonstop Forwarding for BGP		
I	The switch should support Nonstop Forwarding for OSPF		
J	The switch should support Nonstop Forwarding for ISIS		
3.1.1.1.11	QoS	Vendor to Confirm & furnish details as applicable	
A	The Switch should support QoS and Traffic Management		
B	The Switch should support QoS Classification		
C	The Switch should support QoS Marking		
D	The Switch should support QoS Policing		
E	The Switch should support QoS Congestion avoidance		
F	The Switch should support QoS Mutation		
G	The Switch should support QoS for IPv6 unicast and multicast traffic		

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H	The Switch should support Per-port -per-VLAN policies	
I	The Switch should support Distributed policing (minimum 1 K policers)	
J	The Switch should support Egress microflow policing	
K	The Switch should support Packet or byte-based policing	
L	The Switch should support Diff Serv QoS on all ports	
M	The Switch should support minimum four queues per port in hardware	
N	The Switch should support Advance security – DOS and NAT	
O	The Switch should support priority queuing	
P	The Switch should support IP differentiated service code point (DSCP) and IP precedence	
Q	The Switch should support classification and marking based on full Layer 3, 4 headers	
R	The Switch should support input and output policing based on Layer 3, 4 headers.	
S	The Switch should support Enterprise wide QoS management: LAN to WAN integration	
T	The Switch should support Traffic Classification: Physical Port, IP DA/SA, IP DA/SA/L4 Port	
U	The Switch should support Admission Control: IP DA/SA, IP DA/SA L4, RSVP	
V	The Switch should support Traffic Marking: IEEE 802.1Q/P COS, IPv4 ToS, via ACLs	
W	The Switch should support Congestion Avoidance: WRED, multiple Queue Thresholds	
X	The Switch should support Scheduling IP precedence, 802.1p, three transmit queues on a per port basis, WRR, Strict Priority Queue TOS<->COS mapping	
Y	The Switch should support Micro-Flow Policing (limits BW of specific user / application)	
Z	The Switch should support Aggregate-Flow Policing (dedicated BW per customer SLA)	
AA	The Switch should support Excess-Rate Policing (permits traffic bursts, enables granular priority values / service-level)	
AB	The Switch should support Strict-Priority Queue (protects mission-critical, delay-sensitive traffic)	
AC	The Ethernet ports must support Shaped round robin (SRR)	
AD	The Ethernet ports must support Deficit weighted round robin (DWRR)	
AE	The Ethernet ports must support Weighted Round Robin (WRR)	
AF	The Ethernet ports must support Priority queueing	
AG	The Ethernet ports provide congestion avoidance with Weighted Random Early Detection (WRED)	

Sl. No.	DESCRIPTION / SPECIFICATION		BIDDER'S OFFER
AH	The Ethernet ports provide congestion avoidance with Tail-drop thresholds		
AI	The Switch must support the ability to perform QoS re-write and strict priority queuing simultaneously		
3.1.1.1.12	Security	Vendor to Confirm & furnish details as applicable	
A	The Switch should provide robust protection of the control plane in Hardware		
B	The Switch Shall have Filters/Access-List on all ports		
C	The Switch should support MAC ACLs featuring per-port/per VLAN granularity		
D	The Switch should support IEEE 802.1x and 802.1x extensions		
E	The Switch Shall have 802.1x accounting		
F	The Switch should support minimum 1000 ACL groups		
G	The Switch should support VLAN ACLs		
H	The Switch should support Router ACLs		
I	The Switch should support port based ACLs		
J	The Switch should support Role-Based ACLs		
K	The Switch should support packet classification by tagging packets on ingress to the network so that they can be properly identified for the purpose of applying security and other policy criteria along the data path		
L	The Switch should support secured communication on the links between devices in the network with a combination of encryption, message integrity check, and data-path replay protection mechanisms		
M	The Switch should support L2, L3 and L4 ACLs		
N	The Switch should support ACL dry run and hitless commit		
O	The Switch should support Source MAC + IP Binding		
P	The Switch should support Ipv4 and IPv6 uRPF		
Q	The Switch should support Private VLANs		
R	IPv6 ACLs should support TCP and UDP protocol		
S	IPv6 ACLs should support Source and destination port numbers		
T	IPv6 ACLs should support TCP flags, including SYN, ACK, FIN, PSH, URG, RST, and Established (ACK and RST).		
U	IPv6 ACLs should support ICMPv6 packets with source or destination address and ICMP.		

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3.1.1.2	Distribution Switch:		
	Distribution switch shall be Layer3 Switch with redundant power supplies. One distribution switch shall be placed at Plant Office, one at NDT. Distribution switch shall have, <ul style="list-style-type: none"> • Two power supplies, • 10Gbps single mode fiber module populated with 2 No. of SM 10G Fiber Transceiver and 1Gbps module populated with Minimum 8 nos of 1G Fiber Transceivers & Minimum 8 nos of Copper Transceivers. 		
	Switches shall meet the following specifications:		
3.1.1.2.1	Architecture & Performance	Vendor to Confirm & furnish details as applicable	
A	MAKE CISCO/ JUNIPER / HP		
B	The Switch should have Two or more power supplies for redundancy		
C	The switch shall be 19" Rack Mountable		
D	800Gbps switch Capacity.		
E	Layer 2, L3 hardware forwarding at 250 Mpps (IPV4) & 125 Mpps (IPv6).		
F	No performance penalty with advanced Layer 3 and Layer 4 services enabled		
G	Software-based learning at a sustained rate of 1000 hosts per second		
H	Support for 55,000 MAC addresses		
I	Support for 256,000 (IPv4) & 128,000 (IPv6) entries in routing table (shared between unicast and multicast)		
J	Scalability to 4000 virtual ports (VLAN port instances)		
K	Bandwidth aggregation up to 16 Gbps through Port Aggregation.		
L	Hardware-based multicast management & Hardware-based ACLs		
3.1.1.2.2	Quality Of Service	Vendor to Confirm & furnish details as applicable	
A	The switch should support minimum 6000 QoS hardware entries/ACL entries		
B	Per-port quality of service (QoS) configuration, Support for four queues per port in hardware		
C	Strict priority queuing, IP differentiated service code point (DSCP) and IP Precedence		
D	Classification and marking based on IP type of service (TOS) or DSCP, full Layer 3 and Layer 4 headers		
E	Input and output policing based on Layer 3 and Layer 4 headers. Support for 1024 policers on ingress and 1024 policers on egress configured as aggregate or individual		

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F	Shaping and sharing output queue management, Support for Congestion avoidance feature like DBL (Dynamic Buffer Limiting)		
G	No performance penalty for granular QoS functions		
H	Support for Automatic Quality of Service for easy configuration of QoS features for critical applications.		
3.1.1.2.3	Security Feature	Vendor to Confirm & furnish details as applicable	
A	Support for Admission Control features for end-point security (PCs & Desktop Posture Assessment) and thereby controlling the spread of viruses & worms		
B	RADIUS, which allow centralized control of the switch and restrict unauthorized users from altering the configuration		
C	Standard and extended ACLs on all ports		
D	802.1x user authentication (with VLAN assignment and Guest VLAN extensions)		
E	Router ACLs (RACLs) on all ports (no performance penalty), VLAN ACLs (VACLs),Port ACLs (PACLs)		
F	Private VLANs (PVLANS) on access and trunk ports		
G	Dynamic Host Configuration Protocol (DHCP) snooping and Option 82 insertion		
H	Port Security, Secure Shell (SSH) Protocol versions 1 and 2		
I	Unicast MAC filtering, Unicast port flood blocking		
J	Dynamic Address Resolution Protocol (ARP) inspection, IP source guard		
3.1.1.2.4	Management Features	Vendor to Confirm & furnish details as applicable	
A	Single console port and single IP address to manage all features of the system		
B	Software-configuration management, including local and remote storage		
C	Optional Compact Flash memory card to store software images for backup and easy software upgrades		
D	In-service software upgrade		
E	Manageability through common network-management software on a per-port and per-switch basis, providing a common management interface for routers, switches of the same vendor		
F	Support for SNMP versions 1, 2, and 3		
G	Remote Monitoring (RMON) software agent to support four RMON groups (history, statistics, alarms, and events) for enhanced traffic management, monitoring, and analysis.		
H	Analysis support, including ingress port, egress port, and VLAN mirroring		
I	Support for SFlow / NetFlow or equivalent for Deep traffic & session flow analysis.		

Sl. No.	DESCRIPTION / SPECIFICATION		BIDDER'S OFFER
J	Support for Port Mirroring, Remote Mirroring & ACL filtering for Port mirroring used for IDS functionalities.		
K	802.1x authentication and MAC address authentication		
3.1.1.2.5	Layer 2 Features	Vendor to Confirm & furnish details as applicable	
A	IEEE 802.1Q VLAN encapsulation, Support for 4096 VLANs per switch		
B	Support for Automatic Negotiation of trunks to help minimize the configuration & errors.		
C	Centralized VLAN Management. VLANs created on the Core Switches should be propagated automatically.		
D	Spanning-tree for fast convergence with STP instances of minimum 2500.		
E	802.1d, 802.1s, 802.1w, 802.3ad		
F	Spanning-tree root guard to prevent other edge switches becoming the root bridge.		
G	IGMP snooping v1, v2 and v3		
H	Port Aggregation across modules		
I	Link Aggregation Protocol (LACP)		
J	Support for Detection of Unidirectional Links and to disable them to avoid problems such as spanning-tree loops.		
K	The CPU Stateful Switchover should be in sub-second failover time, so that the Layer 2 Links need not be renegotiated in case of failure of one of the CPU module.		
L	The Switch should be able to discover the neighbouring device of the same vendor giving the details about the platform, IP Address, Link connected through etc, thus helping in troubleshooting connectivity problems.		
3.1.1.2.6	Layer 3 features	Vendor to Confirm & furnish details as applicable	
A	IP routing protocols Open Shortest Path First [OSPF], Routing Information Protocol [RIP], RIP2), Intermediate System to Intermediate System (IS-IS), Border Gateway Protocol Version 4 (BGP4) and Multicast Border Gateway Protocol (MBGP), ICMP Router Discovery Protocol, Policy-Based Routing (PBR)		
B	Support for Router redundancy Protocol		
C	The Switch should support minimum 1K of IPv4 multicast table size and 512 of IPv6 multicast table size.		
D	The Switch should be Non-Stop Forwarding (NSF)-Aware for most of the dynamic routing protocols.		
E	IP multicast routing protocols (PIM, SSM, Distance Vector Multicast Routing Protocol [DVMRP]), Pragmatic General Multicast (PGM)		
F	IGMP v1, v2, and v3, IGMP filtering on access and trunk ports		

Sl. No.	DESCRIPTION / SPECIFICATION		BIDDER'S OFFER
G	Support for Virtual Route Forwarding feature to map VLANs to respective VRFs		
H	Support for IPv6 Protocol Unicast & Multicast forwarding in Hardware		
3.1.1.3	Access Switches:		
	<p>Access switches shall be used to connect desktops /workstations / peripherals etc.</p> <p>The Access switch Type I shall have minimum 2No of 1 Gbps SFP Ports, populated with SMF Transceivers and 48 No. 10/100/1000 Mbps active copper ports.</p> <p>The Access switch Type II shall have minimum 2No of 1 Gbps SFP Ports, populated with SMF Transceivers and 24 No. 10/100/1000 Mbps active copper ports.</p> <p>The Access switch Type III shall have minimum 2No of 1 Gbps SFP Ports, populated with SMF Transceivers, and Minimum 12 No. 10/100/1000 Mbps active copper ports.</p>		
	Specifications shall be as given below.		
3.1.1.3.1	Performance & Architecture	Vendor to Confirm & furnish details as applicable	
A	MAKE : CISCO /JUNIPER/HP		
B	<ul style="list-style-type: none"> • For 48 port switch should have the switching capacity of 96Gbps & forwarding rate of 65Mpps. • For 24 port switch should have 48Gbps of switching capacity & 35 Mpps of forwarding rate • For 12 port switch should have 24Gbps of switching capacity & 20Mpps of forwarding rate. 		
C	19" inch rack mountable. Rack mount kit to be provided along with the switch		
D	The switch should have enough Memory (Flash and/or any other) to hold the latest Software Release. The Memory should be large enough to support fully Populated ports, all features of switch and parameters like MAC Address Table, VLANs etc.		
E	The switch should support Stacking		
F	The switch should support External Redundant power supplies.		
3.1.1.3.2	Connectivity & Filtering	Vendor to Confirm & furnish details as applicable	
A	Should support Industry Standard Port/Link Aggregation for all Ports		
B	Jumbo Frames support up to 9K Bytes		
C	Support for broadcast / multicast storm control to prevent degradation of switch performance from faulty end stations		

Sl. No.	DESCRIPTION / SPECIFICATION		BIDDER'S OFFER
3.1.1.3.3	Layer 2 Functionality	Vendor to Confirm & furnish details as applicable	
A	Should support 802.1Q protocol		
B	Should support port based VLANs		
C	Should support VTP or equivalent protocol to reduce administrative burden of configuring VLANs on multiple switches		
D	Should support minimum 255 active VLANs		
E	No. of MAC Address Supported: 8000		
F	Should support IPv6 as per RFC 2460 and IPv6 Neighbour		
3.1.1.3.4	Security Features	Vendor to Confirm & furnish details as applicable	
A	Should Support MAC Address Filtering based on source and destination address		
B	Should support DHCP Snooping to filter un trusted DHCP messages		
C	Should support 802.1x Network Security and Authentication		
D	Should support 802.1x with VLAN Assignment/Guest VLAN features		
E	Should have support for RADIUS		
F	Should Support Spanning Tree Protocol, Rapid Spanning Tree Protocol, Multiple Spanning Tree Protocol		
3.1.1.3.5	Quality of Service	Vendor to Confirm & furnish details as applicable	
A	Should support QoS scheduling		
B	Should support minimum 4 queues per port		
C	Switch should support rate limiting (bandwidth control). Rate limiting should be supported on the Ingress or Egress of any port without sacrificing additional ports.		
3.1.1.3.5	Multicasting	Vendor to Confirm & furnish details as applicable	
A	Should support IPv4 Multicasting		
B	Should Support IGMP v1, v2		
3.1.1.3.6	Management	Vendor to Confirm & furnish details as applicable	
A	Switch should be manageable through NMS on per port/switch basis with common interface for all manageable devices on the network. Should Support syslog, SNMP, RMON, SSH, telnet, web management		
B	Should support port mirroring feature for monitoring network traffic of a particular port / VLAN / group of ports / entire switch.		
3.1.1.3.7	Software	Vendor to Confirm & furnish details as applicable	
A	Version of software for supplied switch should be latest release to support all required features		

Sl. No.	DESCRIPTION / SPECIFICATION		BIDDER'S OFFER
B	Software updates should be bundled for the entire contract period		
3.1.1.3.8	IEEE Standards Compliance	Vendor to Confirm & furnish details as applicable	
A	Ethernet: IEEE 802.3, 10BASE-T		
B	Fast Ethernet: IEEE 802.3u, 100BASE-TX, 100BASE-FX		
C	Gigabit Ethernet: IEEE 802.3z, IEEE 802.3ab, 1000BASE-X (mini-GBIC/SFP), 1000BASE-SX, 1000BASE-LX/LH		
D	IEEE 802.1D Spanning-Tree Protocol		
E	IEEE 802.1S & 1W for Rapid Spanning tree convergence		
F	IEEE 802.1p QoS Prioritization		
G	IEEE 802.3x Flow Control		
H	IEEE 802.3ad Link Aggregation		
I	IEEE 802.1Q VLAN		
J	IEEE 802.1X Authentication		
3.1.1.4	Network Management System Network Management System shall consist of Network Management Software with the required hardware.		
3.1.1.4.1	NMS	Vendor to Confirm & furnish details as applicable	
A	The Network Management Software shall be a standalone, comprehensive management platform that delivers integrated, modular management capabilities across fault, configuration, accounting, performance, and security (FCAPS) needs, with multi-vendor management		
B	The software shall be designed on a service-oriented architecture (SOA) using a business application flow model and capable of including additional modules to the base platform to provide deeper functionality		
C	The software shall be compatible with Microsoft Windows and Linux operating systems		
D	The software shall come with an initial license for 100 managed devices. Additional node licenses shall be available to extend the node limit.		
E	The software shall enable centralized management of all network elements with a variety of automated tasks, including discovery, categorization, baseline configurations, software images, configuration comparison tools, version tracking, change alerts, and more.		

Sl. No.	DESCRIPTION / SPECIFICATION		BIDDER'S OFFER
F	The software shall have modular architecture supporting addition of new modules to enrich a network's management capabilities. This shall include Wireless Network Management, User Access Management (AAA), and Network Traffic Analyzer (using Sflow/Netflow).		
G	Rich Resource Management - Discovery, full inventory, L2/L3 topology		
H	Performance management – CPU, Memory, Bandwidth, TopN statistics, threshold-based alarming etc.		
I	VLAN Management – view current VLAN configuration, VLAN topology, bulk VLAN deployment		
J	ACL Management - Simplified definition and deployment of ACLs, ACL rule optimization		
K	Comprehensive Configuration Management – Bulk configuration, scheduled backup and restore, base lining and notification of changes etc		
3.1.1.5	UTM Appliance		
	System Performance Requirement		
	Description	Requirement	
3.1.1.5.1	Firewall		
a	Firewall Throughput	8Gbps	
b	IPSec VPN throughput	4 Gbps	
c	concurrent session per second	1 million	
d	New sessions per second	35000	
e	Total Number of VPN tunnels supported by default	5000	
f	Number of GRE Tunnels support required	1000	
g	number of SSL user support required by default should be scalable to 5000	500	
h	Number of Gigabit Ethernet 10/100/1000 copper ports required	9	
i	Number of Console ports(copper, RJ-45 type)	1	
j	Number of USB ports required which should also support 3G modems	2	
k	Number of power supplies	2	
l	Number of Vlan interfaces support required for whole system	512	
n	Number of STATIC IP/MAC binding support required	1000	
o	Number of IPv4 Firewall security policies support required	10000	
p	Number of IPv6 Firewall security policies support required	10000	

Sl. No.	DESCRIPTION / SPECIFICATION		BIDDER'S OFFER
	Description	Requirement	
q	Number of Multicast firewall policy support required	1280	
r	Number of Firewall IPv4 address objects support required	20000	
s	Number of Firewall IPv6 address objects support required	20000	
t	Number of manual URLs that can be blacklisted or white listed support required	5 lakh	
u	Number of File patterns(*.exe, *.pdf etc) blocking support required	5 lakh	
v	Should support SSL traffic scanning transparently		
w	Should support User Identity Based firewall policies seamlessly without the need of any client utility be installed on hosts either manually or getting pushed through any directory servers		
3.1.1.5.2	VPN	Vendor to Confirm & furnish details as applicable	
A	Should support L2TP, PPTP GRE tunnels		
B	Should support IPSec Standards like Des, 3DES, AES, DH group 1,2,5,14		
	Description	Requirement	
3.1.1.5.3	Virtualization & HA		
A	Maximum virtual firewalls support required	10	
B	Should support Active-Active HA for at least 6 firewalls in a single HA cluster		
3.1.1.5.4	Router & IPv6 support		
A	Firewall should support IPv6		
B	Firewall should support RIP, OSPF, BGPv4, VRRP, IGMP		
C	Number of IPv4 Static routes support required for whole system	5000	
D	Number of IPv6 Static routes support required for whole system	5000	
E	Number of Policy based Routes support required	2500	
F	Number of BGPv4 Neighbours support required	1000	
3.1.1.5.5	Authentication		
A	Should support LADP, RADIUS, Windows AD, PKI based Authentication		
B	Should also support Local User database creation & Number of Local users creation support required	10000	

Sl. No.	DESCRIPTION / SPECIFICATION		BIDDER'S OFFER
	Description	Requirement	
C	Should have Integrated 2-Factor Authentication server support (If not integrated, provide external equivalent solution) & Number 2-factor authentication hard token support required	1000	
3.1.1.5.5	Authentication		
A	Should support LADP, RADIUS, Windows AD, PKI based Authentication		
B	Should also support Local User database creation & Number of Local users creation support required	10000	
C	Should have Integrated 2-Factor Authentication server support (If not integrated, provide external equivalent solution) & Number 2-factor authentication hard token support required	1000	
3.1.1.5.6	Application control		
a	should have integrated Application control solution & Number of Application control sensors support required	320	
b	Should have identification support for at least 1000+ applications and the identification should be regardless of ports. The applications needs to be predefined on the box.		
c	Should have the ability to control the applications based on the following actions : Allow, Deny, prioritization, allocate bandwidth user wise, group wise, Should be able to create content filtering policies user wise, Should be able to create bandwidth management rules based on web filtering categories		
d	The administrator shall be able to set the Session TTL of the selected application/group.		
e	The proposed system shall have the ability to identify, block or rate limit the following common P2P applications : Gnutella (Napshare, iMesh, Mldonkey, morph, Xolox, BearShare, FOXY), Bittorrent, Kaaza, WinY, edonkey		
f	The proposed system shall have the ability to manage and control Instant messaging usage by identifying various IM applications such as AIM, MSN, YAHOO, SIMPLE, ICQ		

Sl. No.	DESCRIPTION / SPECIFICATION		BIDDER'S OFFER
3.1.1.5.7	Traffic shaping	Vendor to Confirm & furnish details as applicable	
a	The proposed system should support Traffic shaping & Traffic quota management on per IP address and Per user group basis without the need of any client utility to be either manually installed on hosts or pushed through Directory servers		
3.1.1.5.8	Client reputation & Anti BOT support	Vendor to Confirm & furnish details as applicable	
a	Should have integrated Gateway level Client Reputation detection feature whereby client Authorisation by device type independent of User, Device/User Monitoring & dynamically Control clients (i.e support for BYOD environment as well) and should be able to dynamically provision access control based on type of the device the same user is using & enforce organisation specific security policy compliance for both user / client device type. Should support detection of BOT traffic and its command and control centres and block such traffic		
3.1.1.5.9	DLP	Vendor to Confirm & furnish details as applicable	
A	The proposed appliance shall have an integrated DATA LEAK PREVENTION capability for the following protocols HTTP/HTTPS POST, HTTP/HTTPS GET, FTP PUT, FTP GET, SMTP, SMTPS, IMAP, IMAPS, POP3, POP3S, NNTP, and IM(AIM, ICQ, Yahoo, MSN) or provide an equivalent external DLP appliance solution which can be integrated with firewall		
3.1.1.5.10	IPS	Vendor to Confirm & furnish details as applicable	
A	Should support integrated Intrusion Prevention System (IPS). Firewall CPU & memory should not cross beyond 60 to 70% with full network nodes load while all IPS signatures are actively scanning the traffic along with Protocol anomalies and detecting 99% of Attacks with very low false positive rate. If required we would ask bidders to show either LIVE POC or some credible testing reports.		
B	The IPS detection methodologies shall consist of Signature based detection using real time updated database & Anomaly based detection that is based on thresholds		
C	The proposed system shall support One-arm IDS (sniffer mode)		
D	Administrator shall be able to configure DoS policies that are used to associate DoS settings with traffic that reaches an interface based on defined services, source and destinations IP/Range.		
E	The device shall allow administrators to create Custom IPS signatures		

Sl. No.	DESCRIPTION / SPECIFICATION		BIDDER'S OFFER
F	IPS Signatures can be updated in three different ways: manually, via pull technology or push technology. Administrator can schedule to check for new updates or if the device has a public IP address, updates can be pushed to the device each time an update is available.		
G	When a signature is matched, configurable actions can be taken automatically like Detailed attack logging with hyperlink to IPS encyclopaedia references, Inbuilt email alerts, SNMP traps, Packet logging for forensic studies if hard disk available Pass, block or reset sessions		
H	The device shall allow administrators gradual IPS anomaly implementation by: Multiple Anomaly profiles based on source and destination Ips, Each profile allow administrator to configure variable thresholds and actions		
I	In event if IPS should cease to function, it will fail open by default and is configurable. This means that crucial network traffic will not be blocked and the Firewall will continue to operate while the problem is resolved.		
J	IPS should scan entire SSL encrypted traffic without any performance degradation		
K	IPS should also include Botnet filtering and detecting and preventing Botnet command and control traffic etc and appropriate licences if required need to be provided along with solution		
3.1.1.5.11	AV	Vendor to Confirm & furnish details as applicable	
A	Should support integrated Gateway level Antivirus. Firewall CPU & memory should not cross beyond 60 to 70% with full network nodes load while all Antivirus / spyware signatures are actively scanning the traffic along with Hurestic scan and detecting 98-99% of malware which includes archived file malware as well. If required we would ask bidders to show either LIVE POC or some credible testing reports.		
B	The proposed system should be able to block, allow or monitor only using AV signatures and file blocking based on per firewall policy based or based on firewall authenticated user groups with configurable selection of the following services: HTTP, SMTP, POP3, IMAP, Instant Messenger (AIM, YAHOO!, MSN, ICQ, SIMPLE), NNTP as well as all SSL based protocols like SMTPs, IMAPs, POP3s, etc		

Sl. No.	DESCRIPTION / SPECIFICATION		BIDDER'S OFFER
3.1.1.5.12	URL filtering	Vendor to Confirm & furnish details as applicable	
A	Firewall should support integrated Manual as well as dynamic category based web filtering should be supported and URL database size should not be less than 30 million or provide an equivalent external Web filtering appliance based solution which can be seamlessly integrated with firewall		
3.1.1.5.13	Anti spam	Vendor to Confirm & furnish details as applicable	
A	Firewall should support first level of Anti spam functionality		
3.1.1.5.14	Log support	Vendor to Confirm & furnish details as applicable	
A	Firewall should support logging to multiple syslog servers and should generate reports by integrating with other solutions. Reporting should not be done on firewall appliance as it would degrade the firewall security performance		
B	The Firewall must send log information to an external log server / appliance via an encrypted connection.		
C	The reporting tool needs to be bundled or quoted along with the solution. The logging and analysis should either be an appliance or on a dedicated PC / Server platform. The bidder should take the responsibility of supplying the hardware and the OS with suitable warranty.		
D	The hardware / appliance should have a minimum capacity of 1TB HDD, 2 x 10 / 100 / 1000 Copper Gigabit interfaces		
3.1.1.6	Blade Chassis / Enclosure Specification:	Vendor to Confirm & furnish details as applicable	
3.1.1.6.1	The blade chassis should support at least 14 Blade Servers.		
3.1.1.6.2	The blade chassis should be offered with a completely passive backplane/mid plane or a redundant active midp lane architecture		
3.1.1.6.3	The blade chassis should offer support for FC, iSCSI, FCOE and Infini band interconnects offering Hot Pluggable & Redundancy as a feature.		
3.1.1.6.4	The blade chassis should support both Intel and AMD blades on the same chassis		
3.1.1.6.5	The blade chassis should be configured with redundant remote management controllers		
3.1.1.6.6	The blade chassis should have support for IPv6 on Management Interfaces		
3.1.1.6.7	The blade chassis should be configured with an Integrated KVM switch or Must have a real time Virtual KVM functionality and be able to perform a remote Power sequence. Must provide both Java & Java-free browsing options.		

Sl. No.	DESCRIPTION / SPECIFICATION		BIDDER'S OFFER
3.1.1.6.8	The blade chassis should have a passive backplane architecture or redundant active mid plane architecture		
3.1.1.6.9	The blade chassis should have at least 6 I/O Modules, in addition to the redundant remote management		
3.1.1.6.10	Modules / controllers.		
3.1.1.6.11	The blade chassis should be configured with all the fans required to cool a fully populated enclosure. And all fans should be hot swappable.		
3.1.1.6.12	The blade chassis should be configured with power supplies required for N+N redundancy. All the power supplies should be hot swappable.		
3.1.1.6.13	The blade chassis should be configured with cables and accessories required to connect the Power distribution units to the power supplies.		
3.1.1.6.14	The chassis should support for providing MAC & WWN address across the slots or chassis instead of individual Host Bus Adapter/NIC of the Blade. The solution provided must not have any single point of failure and must be configured in failover.		
3.1.1.6.15	The chassis should have minimum 1 DVD ROM (Internal or external) which can be used by all the blade servers		
3.1.1.6.16	Remote Management : The system software should have features for remotely managing - the blade chassis/enclosure, including blade servers, I/O Modules, power supplies, fans, etc.		
3.1.1.6.17	Cables & Connectors- Should supply all the necessary fiber cables/connectors/ power cables etc and other necessary accessories, as part of setup of blade servers/chassis		
3.1.1.6.18	The chassis should have minimum 1 USB Port which can be used by all the blade servers.		
3.1.1.7	Blade Server Specification:	Vendor to Confirm & furnish details as applicable	
3.1.1.7.1	The blade server should be configured with 2 Nos. of Intel E5-2640 6-core processors, 15M Cache AND each of 2.5 GHz or above frequency rating.		
3.1.1.7.2	The blade server should be configured with 32GB memory using 8GB 1333MHz Dual ranked DDR3 modules as mentioned in the specs sheet.		
3.1.1.7.3	The blade server should have support for 16GB DIMM modules and should support a memory of up to 256GB.		
3.1.1.7.4	The blade server should be configured with 2 No's of minimum 900GB 10K RPM Hot Plug 6Gbps SAS HDD.		
3.1.1.7.5	The blade server should be configured with a RAID controller with min. 512MB cache and with support for RAID 0 and RAID-1.		

Sl. No.	DESCRIPTION / SPECIFICATION	BIDDER'S OFFER	
3.1.1.7.6	The blade server should have dual 8 Gbps FC HBA ports(auto negotiable to 4Gbps) - to connect to the SAN		
3.1.1.7.7	The blade server should have dual 10 Gbps Ethernet Ports (Auto negotiable to 1Gbps Ethernet).		
3.1.1.7.8	The blade server should be provided with enterprise level remote management features.		
3.1.1.7.9	The blade server should be certified for Red hat enterprise Linux, VMWARE, Microsoft server 2012/2008, Microsoft Hyper-V and latest editions SUSE Linux enterprise.		
3.1.1.7.10	The systems management software should provide System Hardware and Firmware Inventory Display.		
3.1.1.7.11	The systems management software should support Virtual Media.		
3.1.1.7.12	The systems management software should support console redirection.		
3.1.1.7.13	The systems management software should alert the systems administrator on potential issues through SNMP traps or E-mail alerts.		
3.1.1.7.14	The systems management software should support SSL and IPMI.		
3.1.1.7.15	The systems management software should support power management functions like shutdown and reset, from a management console. Should support Remote Management.		
3.1.1.7.16	The systems management software should provide password-level security management and role based authority.		
3.1.1.7.17	Support for VMware ESX/ESXi , Microsoft Hyper-V		
3.2	Bill Of Material – Passive		
	Description of Passive Items	Unit	Qty
A	Cat6 4 UTP cable	m	25000
B	Cat 6 Single Information Outlets	Nos	500
C	Cat 6 Patch Panel	Nos	40
D	Cat6 UTP patch cord – 2m	Nos	500
E	Cat6 UTP patch cord – 5 m	Nos	500
F	Outdoor single mode Fiber optic cable	m	22000
G	24 port rack mount LIU	Nos	35
H	SM Pigtail - 1mtr	Nos	840
I	Duplex SC-LC Single Mode Fiber Patch Cord - 3 Meter	Nos	70
J	Duplex SC-SC Single Mode Fiber Patch Cord - 3 Meter	Nos	30
K	Floor Mount Rack - 42 U	Nos	2
L	Floor Mount Rack - 24 U	Nos	2
M	Wall Mount Rack - 12U	Nos	25
N	Cable Route Marker	Nos	300

Sl. No.	DESCRIPTION / SPECIFICATION		BIDDER'S OFFER
3.2.1	Material Specification – Passive		
3.2.1.1	Cat 6 UTP cable:	Vendor to Confirm & furnish details as applicable	
3.2.1.1.1	Make	Molex / Panduit / Schneider / Systimax / ADC Krone / AMP / Legrand	
3.2.1.1.2	Category	Should meet minimum Category 6 requirements	
3.2.1.1.3	Type of Conductors and Grade	4 Pair Solid Conductors 23 AWG	
3.2.1.1.4	Standards	EIA/TIA 568-C.2, Class E 11801-2002	
3.2.1.1.5	Gigabit Requirements	Should meet or exceed Gigabit Ethernet requirements at 100 meters	
3.2.1.1.6	Separator	Cross / Star Spine to separate 4 Pairs of UTP Cable	
3.2.1.1.7	Pull Thread / Strip Thread	Cable Pull Tension Thread inside the UTP Cable	
3.2.1.1.8	Certification	UL Listed, ETL Tested and Verified and ROHS Compliant	
3.2.1.1.9	Colour	Blue	
3.2.1.2	Cat 6 Single Information Outlet:	Vendor to Confirm & furnish details as applicable	
3.2.1.2.1	Make	Molex / Panduit / Schneider / Systimax / ADC Krone / AMP / Legrand	
3.2.1.2.2	Category	Should meet minimum Category 6 requirements	
3.2.1.2.3	Connector contacts	Copper alloy with contact plating of 50Micron Gold / 100Micron Nickel	
3.2.1.2.4	Insertion Cycles	2500	
3.2.1.2.5	IDC Contact Plating	Tin/Lead Plate	
3.2.1.2.6	Standards	EIA/TIA 568-B, ETL Verified CAT6 Component, UL Listed and ROHS Compliant	
3.2.1.2.7	Gigabit Requirements	Should meet or exceed Gigabit Ethernet Requirements	
3.2.1.2.8	Faceplate	Polycarbonate Hi-Grade Plastic FR Grade & UV Resistant shuttered face plate.	
3.2.1.2.9	Mount box	Surface Mount Box with screws	
3.2.1.3	Cat 6 Patch Panel:	Vendor to Confirm & furnish details as applicable	
3.2.1.3.1	Make	Molex / Panduit / Schneider / Systimax / ADC Krone / AMP / Legrand	
3.2.1.3.2	No. of Ports	Fully loaded 24 ports with modular 6 blocks	

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3.2.1.3.3	Mounting	Standard 19" rack mount	
3.2.1.3.4	Panel	DC01 galvanized steel sheet	
3.2.1.3.5	Standards	EIA/TIA 568A/B, ETL Verified CAT6 Component, UL Listed and ROHS Compliant	
3.2.1.3.6	Insulation resistance	≤ 500 mΩ at 100 V DC	
3.2.1.4	Cat 6 UTP patch cord:	Vendor to Confirm & furnish details as applicable	
3.2.1.4.1	Make	Molex / Panduit / Schneider / Systimax / ADC Krone / AMP/Legrand	
3.2.1.4.2	Type of conductor	4 Pair 23 AWG stranded copper wire	
3.2.1.4.3	Copper	Multistranded copper in conductor PVC	
3.2.1.4.4	Standards	EIA/TIA 568A/B, ETL Verified CAT6 Component, UL Listed and ROHS Compliant	
3.2.1.5	Outdoor Single mode Fiber Optic cable:	Vendor to Confirm & furnish details as applicable	
3.2.1.5.1	Make	Molex / Panduit / Schneider / Systimax / ADC Krone / AMP/Legrand	
3.2.1.5.2	Type of Fiber	12 Single mode 9/125 micron Loose Tube armored with ROHS Compliant	
3.2.1.5.3	Application	Outdoor / Underground	
3.2.1.5.4	Jacket	UV Stabilized Polyethylene MDPE Sheath	
3.2.1.5.5	Armouring	Corrugated Steel Tape Armour (ECCS Tape), Thickness > 0.15mm	
3.2.1.5.6	Strength Member	Water blocked E-Glass fiber elements OR Two Steel Wires	
3.2.1.5.7	Standard	ISO IEC 11801 TIA/EIA 598	
3.2.1.5.8	Attenuation	0.4dB/km over 1310nm to 1625nm	
3.2.1.6	24 Port Rack mount LIU:	Vendor to Confirm & furnish details as applicable	
3.2.1.6.1	Make	Molex / Panduit / Schneider / Systimax / ADC Krone / AMP/Legrand	
3.2.1.6.2	Rack Mount	19" rack mounted with 1U height, Sliding Drawer Type	
3.2.1.6.3	Material	Fully Powder Coated Steel Body	
3.2.1.6.4	Accommodation	Accept 24 SC Duplex Adaptors	
3.2.1.6.5	Labelling	Labelling for port identification	
3.2.1.6.6	Certification	ROHS Compliant	
3.2.1.6.7	Coupler	Fully Loaded SC Duplex Type with ROHS Compliant	
3.2.1.6.8	Specification Standard	ISO/IEC 11801	

Sl. No.	DESCRIPTION / SPECIFICATION		BIDDER'S OFFER
3.2.1.7	Single mode Pigtail:	Vendor to Confirm & furnish details as applicable	
3.2.1.7.1	Make	Molex / Panduit / Schneider / Systimax / ADC Krone / AMP/Legrand	
3.2.1.7.2	Type of connectors	SC Connector	
3.2.1.7.3	Polishing	100% Factory polished	
3.2.1.7.4	Standards	ROHS Compliant	
3.2.1.7.5	Insertion Loss	Less than 0.3 db dB per connector	
3.2.1.8	Duplex Single Mode Fiber Patch cord:	Vendor to Confirm & furnish details as applicable	
3.2.1.8.1	Make	Molex / Panduit / Schneider / Systimax / ADC Krone / AMP/Legrand	
3.2.1.8.2	Type of connectors	SC-SC / SC-LC	
3.2.1.8.3	Polishing	100% Factory polished	
3.2.1.8.4	Insertion Loss	Less than 0.3 db dB per connector	
3.2.1.8.5	Standards	ROHS Compliant	
3.2.1.8.6	Jacket colour	Yellow	
3.2.1.9	Floor-Mount Rack - 42 U:	Vendor to Confirm & furnish details as applicable	
3.2.1.9.1	Make	APW President / HCL / Netrack	
3.2.1.9.2	Size	19" width	
3.2.1.9.3	Height	42U	
3.2.1.9.4	Depth	800 mm	
3.2.1.9.5	Side Panels	Both Side panels shall be of removable type and access-protected with lock and key.	
3.2.1.9.6	Back Panel	Back panel shall be of hinged type and access-protected with lock and key.	
3.2.1.9.7	Front Panel	Full length Glass Front door of hinged type and access-protected with lock and key	
3.2.1.9.8	Mounting hardware	42 Nos.	
3.2.1.9.9	Power strip	Power strip with 12 Nos. of 5A, 3 pin socket	
3.2.1.9.10	Provision for cable entry	Bottom & top	
3.2.1.9.11	Fan	230V AC 90CFM fan at the top - 2 No	
3.2.1.9.12	Cable Manager	Horizontal cable manager - 6 Nos.	
3.2.1.9.13	Keys	All the racks shall have common key for all the doors	

Sl. No.	DESCRIPTION / SPECIFICATION		BIDDER'S OFFER
3.2.1.10	Floor-Mount Rack - 24 U:	Vendor to Confirm & furnish details as applicable	
3.2.1.10.1	Make	APW President / HCL / Netrack	
3.2.1.10.2	Size	19" width	
3.2.1.10.3	Height	24U	
3.2.1.10.4	Depth	600 mm	
3.2.1.10.5	Side Panels	Both Side panels shall be of removable type and access-protected with lock and key.	
3.2.1.10.6	Back Panel	Back panel shall be of hinged type and access-protected with lock and key.	
3.2.1.10.7	Front Panel	Full length Glass Front door of hinged type and access-protected with lock and key	
3.2.1.10.8	Mounting hardware	24 Nos.	
3.2.1.10.9	Power strip	Power strip with 8 Nos. of 5A, 3 pin socket	
3.2.1.10.10	Fan	230V AC 90CFM fan at the top - 1 No	
3.2.1.10.11	Cable Manager	Horizontal cable manager - 3 Nos.	
3.2.1.10.12	Provision for cable entry	Bottom & top	
3.2.1.10.13	Keys	All the racks shall have common key for all the doors	
3.2.1.11	Wall-Mount Rack - 12 U:	Vendor to Confirm & furnish details as applicable	
3.2.1.11.1	Make	APW President / HCL / Netrack	
3.2.1.11.2	Size	19" width	
3.2.1.11.3	Height	12 U	
3.2.1.11.4	Depth	600 mm	
3.2.1.11.5	Side Panels	Both Side panels shall be of removable type and access-protected with lock and key.	
3.2.1.11.6	Front	Full length Glass Front door, hinged type and access-protected with lock and key	
3.2.1.11.7	Mounting hardware	12 Nos.	
3.2.1.11.8	Power strip	Power strip with 6 Nos. of 5A, 3 pin socket	
3.2.1.11.9	Fan	230V AC 90CFM fan at the top - 2 No	
3.2.1.11.10	Cable Manager	Horizontal cable manager - 2 Nos.	
3.2.1.11.11	Provision for cable entry	Bottom & top	
3.2.1.11.12	Keys	All the racks shall have common key for all the doors	

Sl. No.	DESCRIPTION / SPECIFICATION			BIDDER'S OFFER
3.2.1.12	Cable route marker:	Vendor to Confirm & furnish details as applicable		
1	Material	RCC slab		
2	Marking	BHPV OFC		
3	Height	700 mm		
4	Width	300 mm		
5	Thickness	60 mm		
6	Top	Semi-circular		
7	Painting	Orange		
3.3	Installation of passives:	Vendor to Confirm & furnish details as applicable		
	Description	Unit	Qty.	
A	Outdoor Fiber laying in soft soil	m	8000	
B	Outdoor Fiber laying in hard soil	m	8000	
C	Outdoor Fiber laying in road	m	2000	
D	Outdoor Fiber laying in trench	m	4000	
E	Splicing of pigtail	No	840	
F	Fixing of wall mount rack 12U	No	25	
G	I/O fixing and termination	No	500	
H	Patch panel termination	No	40	
I	UTP cable laying	m	23000	
J	UTP cable laying with wall/floor concealing	m	2000	
3.3.1	Specification for Installation of passives	Vendor to Confirm & furnish details as applicable		
3.3.1.1	<p>Outdoor Fiber optic cable laying in soft soil: The cable shall be laid in HDPE pipe, underground by excavating the earth to a depth of 1 meter. Cable route markers shall be installed at intervals of 50 meters and at turning points. The excavated portion shall be refilled to about 60 cms. and warning tape shall be placed. The balance soil shall be refilled up to the ground level. Bidder shall supply and use the necessary HDPE pipe of ISI standard.</p>			
3.3.1.2	<p>Outdoor Fiber optic cable laying in hard soil: The cable shall be laid in HDPE pipe, underground by excavating the earth to a depth of 0.5 meter. Cable route markers shall be installed at intervals of 50 meters and at turning points. The excavated portion shall be refilled to about 30 cms. and warning tape shall be placed. The balance soil shall be refilled upto the ground level. Bidder shall supply and use the necessary HDPE pipe of ISI standard.</p>			

Sl. No.	DESCRIPTION / SPECIFICATION	BIDDER'S OFFER
3.3.1.3	<p>Outdoor Fiber optic cable laying in road: The cable shall be laid underground by excavating the earth to a depth of 0.5 meter. The cable shall be laid in a HDPE pipe within a GI pipe (Medium duty). The excavated portion shall be refilled fully with the excavated earth and shall be finished by cementing. Bidder shall supply and use the necessary HDPE pipe and GI Pipe of ISI standard.</p>	
3.3.1.4	<p>Outdoor Fiber optic cable laying in trench: In some places fiber cable shall be laid along existing trenches. This involves removal of cement slabs/ MS Sheets at few locations, laying of HDPE pipe, laying of fiber cable inside HDPE pipe and replacement of cement slabs / MS Sheets. Bidder shall supply and use the necessary HDPE pipe of ISI standard as per the requirement.</p>	
3.3.1.5	<p>Splicing: The pigtailed shall be spliced to the ends of fiber cables and neatly arranged using splice holders in the LIU and the LIU shall be fixed in the racks. Test the connectivity using fiber tester.</p>	
3.3.1.6	<p>Information Outlet installation: Installation of I/O involves mounting of surface mount box, punching UTP cable in the I/O jack, ferruling the cable, labeling the I/O and testing connectivity.</p>	
3.3.1.7	<p>UTP Patch panel installation: Installation of UTP patch panel in rack involves mounting of patch panel, punching UTP cable in the patch panel, ferruling the cable, dressing, labeling and testing connectivity.</p>	
3.3.1.8	<p>UTP cable laying: UTP cables are required to be laid on brick walls or along steel girders or in modular workstations. In case of brick walls, UTP cable shall be laid in PVC channel / PVC wire duct. In case of laying along steel girders, the cable shall be laid in PVC conduit. In modular work stations cable shall be routed through guides within the workstations securing with cable ties. The bidder shall supply and use the necessary PVC channel /conduit /cable duct of ISI standard as per the requirement.</p>	
3.3.1.9	<p>UTP cable laying with wall / floor concealing: In some places, concealing in wall / floor is required. In such cases, breaking the wall / floor, installing the conduit, laying the cable and plastering shall be done by the bidder. The bidder shall supply and use the necessary PVC conduits of ISI standard as per requirement.</p>	

Sl. No.	DESCRIPTION / SPECIFICATION	BIDDER'S OFFER
4	MAINTENANCE	
	<p>The active, blade servers, UTM appliance and other network components supplied and installed as per this tender shall be maintained for a period of 5 years.</p> <p>At least one resident certified engineer and two ITI /Diploma Technicians shall be posted to maintain the network. Timings of resident engineer will be as per BHPV Officials. The engineers should be available 24 X 7 on call. Engineers will adhere to BHPV's holiday calendar. Maintenance activities include the following:</p> <ol style="list-style-type: none"> 1. Daily report showing status of all switches. 2. Configuration changes as per the requirement of BHPV. 3. Troubleshooting and resolution of network complaints. 4. Upgrade of OS on switches as and when required. 5. Labeling of all fiber and UTP cables 6. Attending to user complaints on network connectivity 7. Attending to minor changes and relocations in connectivity 8. Identifying faults 9. Rectifying UTP problem 10. Testing for identifying fiber cable problems and failure locations (within 6 hours) 11. Cleaning and dressing of network racks 12. Maintenance of all the supplied items as per the scope given in this tender. 13. Any fiber cut during the maintenance period up to 300 core splicing is under maintenance of bidder. <p>The activities given above are only indicative. The engineer / technicians shall carry out relevant activities as per the instructions of the BHPV Network Manager.</p> <p>Tools required for performing the above activities are under the scope of the bidder.</p> <p>If bidder fails to deploy the service engineer / technicians, deduction of payment shall be as decided by BHPV on pro rata basis.</p>	
5	SERVICE LEVEL AGREEMENT	
5.1	Bidder shall be responsible for continuous and smooth operation of the LAN for the entire lease period.	
5.2	Maintenance and services shall cover services, repairs and replacements necessary to keep the hardware and software in good working condition.	
5.3	Bidder shall maintain sufficient spares, in BHPV Visakhapatnam to ensure immediate attention in case of breakdown.	

Sl. No.	DESCRIPTION / SPECIFICATION	BIDDER'S OFFER
6.8	BHPV reserves the right to retain the hardware, software and other items supplied in this procurement at the end of the lease period on payment of Re. 1/- (Rupee One only) for each item.	
6.9	Bidder to submit duly filled in and signed copy of No Deviation Certificate as per format enclosed at Annexure I	
6.10	Bidder to submit duly filled in and signed copy of THIRD PARTY NON-DISCLOSURE AGREEMENT as per format enclosed at Annexure II	
6.11	Bidder to submit duly filled in and signed copy of Past Experience of Similar Executed Projects as per format enclosed at Annexure III	

BHPV - VISAKHAPATNAM	THIRD PARTY NON-DISCLOSURE AGREEMENT	
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I, _____, on behalf of the (Name of Company),
acknowledge that the information received or generated, directly or indirectly, while
working with BHPV, Visakhapatnam on contract is confidential and that the nature of the
business of the BHPV, Visakhapatnam is such that the following conditions are reasonable,
and therefore:

I warrant and agree as follows:

I, or any other personnel employed or engaged by our company, agree not to disclose, directly
or indirectly, any information related to the BHPV, Visakhapatnam Without restricting the
generality of the foregoing, it is agreed that we will not disclose such information consisting
but not necessarily limited to:

- **Technical information:** Methods, drawings, processes, formulae, compositions, systems, techniques, inventions, computer programs/data/configuration and research projects.
- **Business information:** Customer lists, project schedules, pricing data, estimates, financial or marketing data,

On conclusion of contract, I, or any other personnel employed or engaged by our company shall return to BHPV, Visakhapatnam all documents and property of BHPV, Visakhapatnam, including: drawings, blueprints, reports, manuals, computer programs/data/configuration, and all other materials and all copies thereof relating in any way to BHPV, Visakhapatnam's business, or in any way obtained by me during the course of contract. I further agree that I, or any others employed or engaged by our company shall not retain copies, notes or abstracts of the foregoing.

This obligation of confidence shall continue after the conclusion of the contract also.

I acknowledge that the aforesaid restrictions are necessary and fundamental to the business of the BHPV, Visakhapatnam and are reasonable given the nature of the business carried on by the BHPV, Visakhapatnam I agree that this agreement shall be governed by and construed in accordance with the laws of country.

I enter into this agreement totally voluntarily, with full knowledge of its meaning, and

without duress. Dated at _____, this _____ day of _____, 20__.

Name of the Company

Signature

[RESTRICTED USE]

Past Experience of Similar Executed Projects

SL NO.	DESCRIPTION OF WORK	POSTAL ADDRESS OF CLIENT & NAME OF OFFICER IN CHARGE	CONTRACT VALUE	STARTING DATE	E-mail	Fax Number

SIGNATURE OF BIDDER :

NAME OF BIDDER :

COMPANY SEAL :

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Annexure-IV

5 Years Finance Lease Option for Actives (Quarterly Rental)

Sl.No	Item Description	Item Quantity (In Nos.)	Quarterly Principal For Total Quantity (In Rs.)	Quarterly Interest (In %)	Quarterly Interest For Total Quantity (In Rs.)	Quarterly Maintenance Charge For Total Quantity (In Rs.)	Lease Tax/ Service Tax (In %)	Quarterly Lease Tax / Service Tax For Total Quantity (In Rs.)	Total Quarterly Rental Charge Including Tax (In Rs.)
			A	B	C=B×A/100	D	E	F=D×E/100	G=A+C+D+F
1	Core Switch	2							
2	Distribution Switch	2							
3	Access Switch - I	5							
4	Access Switch - II	17							
5	Access Switch - III	16							
6	Network Management System	1							
7	UTM Appliance	1							
8	Blade Chassis	1							
9	Blade Server	6							
10	Windows 2012 R2 Standard Edition	4							
11	Redhat 6 Linux Enterprise Server	2							
	Total	----		----				----	
	Quarterly AMC charges from 6th year valid for 2 years. (In Rs.)	----	----	----	----		----	----	----

Annexure-V

Outright Purchase for Actives (Including AMC up to 5th year)

Sl.No	Item Description	Item Quantity (In Nos.)	Price For Total Qty.With Standard Warranty Excluding Taxes (In Rs.) A	Standard Warranty Period (In No. Of Years) B	Tax And Duties (In %) C	Tax Value For Total Quantity (In Rs.) D=A×C/100	AMC Value For Total Qty. After Warranty Period Up to End Of Fifth Year Including Taxes (In Rs.) E	Total Price Including Taxes, Duties And AMC For Total Qty. (In Rs.) F=A+D+E
1	Core Switch	2						
2	Distribution Switch	2						
3	Access Switch - I	5						
4	Access Switch - II	17						
5	Access Switch - III	16						
6	Network Management System	1						
7	UTM Appliance	1						
8	Blade Chassis	1						
9	Blade Server	6						
10	Windows 2012 R2 Standard Edition	4						
11	Redhat 6 Linux Enterprise Server	2						
	Total							
	Quarterly AMC charges from 6th year valid for 2 years.							

COMMERCIAL TERMS AND CONDITIONS FOR SUBMISSION OF OFFER**1.0 QUOTATIONS**

Bidders shall submit the offer in TWO INNER ENVELOPES as indicated below which shall be sealed in one outer envelope.

Envelope I: This sealed envelope should contain all the copies of technical bid together with un-priced commercial bid. This envelope should be clearly marked “**Part I – Technical and Un-priced commercial bid**” Indicating Tender No., Due Date and Address & Reference of the Bidder.

Envelope II: This sealed envelope should contain price details this envelope should be clearly marked “**Part II - Price bid**” indicating Tender No., Due Date and Address & Reference of the Bidder.

Both the envelopes (Part I & II) shall be put in one cover, duly sealed, super scribing as Part I and Part II of Tender No., due date of opening and the address and reference of the Bidder

The above offer should reach this office on or before the due date by 14.00 Hrs (IST)
Tender should not be addressed to any Individuals name but only designation to

Dy. General Manager (MM)
BHARAT HEAVY PLATE & VESSELS LIMITED
VISAKHAPATNAM - 530 012 (A P), INDIA.

Tenders should be free from CORRECTION AND ERASURES. Corrections if any must be attested. All amounts shall be indicated both in words as well as in figures. Where there is difference between amount quoted in words and figures, amount quoted in words shall prevail.

Offers should be in ENGLISH and accompanied by technical literature catalogue and detailed dimensional drawings in ENGLISH or otherwise the offers will not be considered.

2.0 PART I (TECHNICAL & UN-PRICED COMMERCIAL BID)**2.1 Technical**

This part shall include / indicate the following:

- 2.1.1. Offer should contain complete scope of supply with all technical details, specifications, delivery and other commercial terms and conditions.
- 2.1.2. Point by point confirmation for the Technical Specification enclosed is to be provided. If there are any deviations the same should be clearly specified. Offers received without conformation to our specification will be rejected.
- 2.1.3. List of customers to whom same or similar equipment have been supplied along with performance certificates to be enclosed.
- 2.1.4. Relevant catalogue to be attached.
- 2.1.5. List of spares parts (with part numbers) for two years operation and maintenance should be attached.
- 2.1.6. Information on shipping weight and cubage (length, width & height) to be provided
- 2.1.7. In case of foreign bidder offer, the Principal's technical offer only should be enclosed.

2.2 Un-Priced Commercial

This part shall include / indicate the following

- 2.2.1. Port of shipment / Station of dispatch

- 2.2.2. Terms of payment
- 2.2.3. FOB/FCA price along with freight charges up to Chennai port (for foreign bidders) Ex-works/FOR Dispatch Station price along with freight charges up to BHPV Visakhapatnam (for Indian bidders)
- 2.2.4. Taxes, Service tax & duties including Cess applicable.
- 2.2.5. Delivery Schedule
- 2.2.6. Filled-in check list to be enclosed
- 2.2.7. Offer validity
- 2.2.8. Country of origin
- 2.2.9. Percentage of agency commission if any along with a copy of Agency agreement The FOB/FCA/CFR Prices quoted shall include the agency commission.
- 2.2.10. A copy of "Un-Priced Part II" i.e., a copy of the Price Bid without the price details to be enclosed.
- 2.2.11. BHPV is eligible for availing CENVAT / VAT credit on both inputs and capital inputs. The suppliers invoice should separately indicate the amount of duty / taxes and should invariably mention the following details:
 1. The Central excise registration number, range division and commission rate of the supplier's jurisdiction.
 2. The rate of duty and 8 digit central excise tariff heading of the item supplied.
 3. The TIN, VAT, CST registration number of the supplier.

The duplicate copy of the invoice is required for availing CENVAT credit and original copy for availing VAT credit, if purchased within the state.

In case of foreign bidders the duplicate copy of the electronic Bill of Entry along with TR6 challan should be made available for availing CENVAT credit on CVD, Cess (S) and SAD.

3.0 **PART II (PRICE –BID)**

This part should contain the schedule of price particulars and to be co-related to the technical details provided in Part-I

4.0 **OPENING OF TENDERS**

The Part I – Technical & un-priced commercial bid alone would be opened on the Tender opening date. The Part II – Price bid of technically suitable Bidders alone would be opened. The Technically suitable Bidders would be informed about the Price Bid opening date. Clarifications if any required by BHPV FOR Technical evaluation / commercial evaluation would be sought from Bidders before opening of Part II – price bid.

GENERAL

- 5.1 Incomplete offers will not be considered.
- 5.2 **Fixed priced:** Prices quoted by the bidder shall be fixed and not subject to any escalation whatsoever during the period of bid validity and execution of the Purchase Order A bid submitted with an adjustable price will be treated as non- responsive and rejected Prices shall be written in words and figures. In the event of difference, the price in words shall be valid and binding. Unit prices shall be considered correct in the event of any discrepancy with regards to total price.
- 5.3 **Bid currency:** Indian bidders should submit the prices only in Indian Rupees. Foreign bidders may submit their bid in their home currency, which should be clearly indicated in the un-priced commercial bid as well as in the price bid. Price bid opening date/ RA date will be considered as effective date for considering exchange rate to evaluate the offers.
- 5.4 **Delivery Schedule:**
 1. Supply of Actives, Blade servers and UTM - 8 weeks from the date of PO/LOI
 2. Supply of Passives - 6 weeks from the date of PO/LOI
 3. Installation of passives - 16 weeks from the date of PO/LOI

Total project (installation of Actives, Blade servers, UTM and passives, configuration and sign-off) should be completed within 20 weeks from the date of PO/LOI.

- 5.5 **Taxes and Duties:** All Taxes and Duties payable as extra to the quoted price should be specifically stated in offers along with CST & TIN No/ Tariff No. etc, failing which the purchaser will not be liable for payment of such Taxes and Duties (Our TIN No.28280189432, APGST No. VSP/04/1/1023 dated 24.08.1968. CST No.VSP/04/1/1012 dated 24.08.1968 & BHPV ECC No AAA CB 7076 N-XM001. Assessment circle Visakhapatnam.)
- 5.6 **Validity:** The offers for main equipment and spares shall be kept open for acceptance for a period of 120 days (one hundred and twenty days) from the dates of opening of the tender (part I)
- 5.7 **Terms of Payment:**
- 5.7.1 **Indian Bidders:**
- 5.7.1.1 **For Outright Purchase of Actives:** 100% payment will be made within 45 days of receipt of material at BHPV, Visakhapatnam and on submission of Performance Bank Guarantee for 10%.
- 5.7.1.2 **For 5 Years Finance Lease Option of Actives:** Quarterly lease rental charges become payable at the end of each quarter after certification by BHPV Visakhapatnam. Bidder shall submit the invoice after each quarter. 100% quarterly payment will be made within 45 days from the date of submission of invoice and on submission of Performance Bank Guarantee for 10%.
- 5.7.1.3 **Payment terms for Passives:** 90% payment (90% of basic price + 100% Taxes) will be made within 45 days of receipt of material and balance 10% will be made after acceptance of material/commissioning of the equipment at BHPV, Visakhapatnam and on submission of Performance Bank Guarantee for 10%.
- 5.7.2 **Foreign Bidders**
An Irrevocable letter of Credit shall be established for 80% of FOB/FCA/CFR/ (excluding Indian Agent's commission) 2 months prior to shipment and valid for 3 months for negotiation against shipment Letter of Credit shall be opened through a branch of State Bank of India in the country where order shall be placed. In case, in the country where order is placed, State Bank of India is not there, Letter of Credit will be confirmed by foreign banker. Balance 20% of FOB/FCA/CFR value shall be paid through sight draft on Commissioning & acceptance of the equipment at BHPV Visakhapatnam, against submission of 10% performance bank guarantee. All Bank charges outside India are to supplier's account. Lump sum erection and commissioning charges if any, shall be payable after satisfactory erection & commissioning of the equipment by sight draft against certificate issued by the competent authority.
- 5.7.3 **Common to both India & Foreign Bidders.**
Erection & Commissioning (E&C) charges will be released after deduction of Income Taxes as per the Govt. of India rules. The TDS certificate will be issued by BHPV. Applicable service tax on E&C charges will be payable extra. The liability of depositing the same to the Govt. will be of the supplier.
- 5.7.4 **Loading criteria common to both Indian and foreign bidders:** Vendor should accept the payment terms specified above. However for any deviation to the payment terms offered with reference to the above criterion will be loaded with prime lending rate of SBI prevailing on date of opening of price bid + 2%, which shall be computed for the differential period between BHPV terms of payment and the offered basic price.
- 5.8 DUNS number (allotted by M/s. DUN & Bradstreet) shall be mentioned in your offer.

- 5.9 **Guarantee:** The equipment shall be guaranteed for a period of 18 months from the date of supply or 12 months from the date of commissioning and acceptance whichever is earlier.
Offers from vendors not accepting to the requested guarantee period will be rejected.
- 5.10 **Contract Execution Bank Guarantee (CEBG):** The successful tenderer shall furnish a Bank Guarantee from any Nationalized Bank for 5% of Purchase Order value (FOR Dispatching station value – Excluding taxes, duties, freight & insurance – for Indian bidders) & (FOB/FCA value – excluding freight & insurance – for foreign bidders) confirming that the order will be executed as per the terms and conditions and this should be valid till final dispatch date (LR/GR/BL/AWB) with additional 2 months claim period. Letter of Credit will be processed only after receipt of CEBG. The CEBG is to be furnished within 3 weeks from the date of Purchase order.
Offers from vendors not accepting to submit CEBG will be rejected.
- 5.11 **Performance Bank Guarantee (PBG):** The supplier shall furnish a Bank guarantee from any Indian Nationalized Bank approved by BHPV in the format, given by BHPV along with purchase order for 10% of the Purchase Order value (FOR Dispatching station value – Excluding taxes, duties, freight & insurance – for Indian bidders) & (FOB/FCA value – excluding freight & insurance – for foreign bidders) valid for period of guarantee with additional claim period of 2 months.
Offers from vendors not accepting to submit PBG will be rejected.
- The CEBG & PBG shall be obtained from any Indian Nationalized Bank
- 5.12 **Liquidated damages:** Delivery of the goods specified in the purchase order should be made within the time prescribed. Failure to dispatch the materials in the time as per the delivery quoted in our Purchase Order would make the supplier liable to an un-conditional penalty at the rate of ½% of the value of goods for each week of delay subject to a maximum of 10% of the Purchase Order value.
- 5.12.1 **Loading Criteria for Liquidated Damages:** Any deviation from above LD Clause to the extent for which LD is not agreed by the vendor i.e., differential % value will be loaded on basic price, e.g. If some vendor agrees for say maximum of 6% LD then his price will be loaded by 4% (10 – 6) of his quoted basic price.
- 5.13 **Risk purchase:** If the supplier fails to deliver the goods within the delivery specified in the Purchase Order, BHPV will be entitled to terminate the contract and to purchase elsewhere at the risk and cost of the seller either the whole of the goods or any part which the supplier has failed to deliver or dispatch within the delivery period mentioned in the Purchase Order.
Offers from vendors not accepting the above Risk Purchase terms will be rejected.
- 5.14 **Indian Agent & Agency commission:** An Indian Agent can represent only one Foreign Manufacturer against a particular Tender. The FOB/FCA/CFR price quoted by the Foreign bidder shall include the agency commission. However, the agency commission component payable to their Indian Agents shall be shown separately in the offer. This will be paid by BHPV in India Rupees, on satisfactory commissioning & acceptance of the equipment. Copies of current Agency Agreement / Authorization Letter in respect of Agency Commission shall be furnished along with offer. For calculation of Rupee equivalent of Agency Commission exchange rate as prevailing on the date of Purchase Order will be taken.
- 5.15 **Short shipment / Warranty replacement:** In case of any short shipment in the main equipment / spares, customs duty levied on such supplies, shall be borne by the supplier. Any warranty replacement during the warrantee period shall be on FOR, BHPV - Visakhapatnam, basis.

- 5.16 **Inspection & Testing:** All goods shall be subject to inspection by BHPV or its authorized representatives at supplier's works or at BHPV stores. The supplier will not charge for the facilities provided for inspection of goods. In case of machine tools the machine would be inspected and proved at supplier's works prior to dispatch however, final inspection and acceptance of the machine will be carried after installation of the machine at BHPV, Visakhapatnam.
- 5.17 **Operating and Maintenance manuals:** The Bidders shall clearly mention in their offer that Operating Maintenance Manuals as called for in the Technical Specification in the required number of copies will be provided.
- 5.18 **Cenvat & VAT credit. (for Indian Bidders only):** The quotation must indicate Tariff item number and rate of Excise Duty applicable. The original Excise Duty Gate Pass will be required to be furnished in case charges to us. If the bidder is availing Cenvat credit for his input materials, the effect of proforma credit should be passed on to the purchaser.
- 5.19 **Packing:** The Supplier shall arrange for packing suitably in all respects considering the peculiarity of the material involves for normal transport by sea / air / rail road and suitably protected against effect of tropical salt laden atmosphere in the event of shipment being delayed at ports.
- 5.20 **Salient Points of HSE** (Health, Safety & Environment) that are to be considered while submissions of offer are:
- 5.20.1 Consumption benchmarks related to output shall be provided wherever applicable for key input resources (energy/fuels/chemicals)
- 5.20.2 Competency requirements for operation, maintenance and calibration, if any, shall be communicated
- 5.20.3 If any Hazardous chemicals as per MSIHC (Manufacturing, Storage and import of Hazardous Chemicals) Rules 1989/94/2000 are used, the MSDS shall be provided, along with on site & OFF site emergency plan (as applicable).
- 5.20.4 The noise level at operator level shall be within 90 Dba
- 5.20.5 OH&S (Occupational Health and Safety) control measures for safe working of machine as applicable shall be specified
- 5.20.6 The machine/equipment shall be fitted with guard for rolling and moving parts and shall comply with applicable OH&S legislations and Factories Act 1948
- 5.20.7 The supplier shall submit the layout drawing of operating controls, displays etc and operating instructions to enable ergonomics evaluation and approval
- 5.20.8 The recommended PPE (Personal Protective Equipment) for the equipment shall be furnished
- 5.20.9 Alarm System (both visual and audible) and Automatic switch off of the equipment shall be provided for any intrusion, overloading, short circuiting or any malfunctioning of the equipment.
- 5.20.10 Details of all hazardous / harmful substances discharges as by-products / wastes during operations of the machine / equipment, such as fumes, gases, dust particles, aerosols UV./IR (Ultra violet / Infra red) radiations, etc shall be furnished, along with their concentrations and their TLV, (Threshold Limit Value)
- 5.20.11 Appropriate pollution control measures shall be proposed to keep the emissions from the machinery / processes within the prescribed limit as stated in Environment Protection Rules 1986.

- 5.20.12 All furnaces, process units, DG sets, paint booths, shot blasting chambers, etc shall be provided with stack(s) of sufficient height as per guidelines laid down in the Environment Protection Rules 1986.
- 5.20.13 wherever industry specific standards are not available for control of pollutants, general emission standards shall be used
- 5.20.14 Chemicals banned due to their negative impact on the environment shall not be used on the process
- 5.20.15 Fuels with sulphur content less than 0.05% shall be proposed.
- 5.20.16 Details regarding nature of waste generated and appropriate disposal practices available shall be provided, along with the operation procedure of the plant / process.
- 5.20.17 Hazardous chemicals and flammable substances shall be transported only through authorized transporters and all safety practices as laid down in applicable legislative requirements such as Central Motor Vehicle Rules, Manufacture, Storage and Import of Hazardous Chemical 1989, etc. shall be followed.
- 5.20.18 Primary materials used in the equipment shall be specified and they shall be eco - friendly.
- 5.21 Evaluation of offers shall be on the basis of delivered cost (Net cash outflow to BHPV).
- 5.22 BHPV also reserves its right to allow to the Public Sector Enterprises ordering and price preference facilities as admissible under the existing policy.
- 5.23 BHPV reserves its right to reject a tender due to unsatisfactory past performance in the execution of a contract at another project / unit.
- 5.24 BHPV shall be at liberty to reject or accept any tender, part or in full, at their own discretion and any such action is not liable for any question or claim against BHPV.
- 5.25 BHPV reserves the right to go for a Reverse Auction (RA) instead of opening the submitted sealed bid, which will be decided after technical evaluation. Information and general terms and conditions governing RA are given below.

GENERAL TERMS AND CONDITIONS OF RA (REVERSE AUCTION)

Against this enquiry for the subject item/system with detailed scope of supply as per enquiry specifications. BHPV may resort to "REVERSE AUCTION PROCEDURE" i.e., ON LINE BIDDING ON INTERNET.

1. For the proposed reverse auction, technically and commercially acceptable bidders only shall be eligible to participate.
2. BHPV will engage the services of a service provider who will provide all necessary training and assistance before commencement of on line bidding on internet.
3. BHPV will inform the vendor in writing in case of reverse auction, the details of service provider to enable them to contact & get trained.

4. Business rules like event date, time, start price, bid decrement, extensions etc. also will be communicated through service provider for compliance.
5. Vendors have to fax the Compliance form in the prescribed format (provided by Service provider) before start of Reverse auction. Without this, the vendor will not be eligible to participate in the event.
6. BHPV will provide the calculation sheet (e.g., EXCEL sheet) which will help to arrive at "Total Cost to BHPV like Packing & Forwarding charges, taxes and Duties, Freight charges, Insurance, Service Tax for Services and loading factors (for non-compliance to BHPV standard Commercial terms & conditions) for each of the vendor to enable them to fill-in the price and keep it ready for keying in during the Auction.
7. Reverse auction will be conducted on scheduled date & time.
8. At the end of Reverse Auction event, the lowest bidder value will be known on the network.
9. The lowest bidder has to Fax the duly signed Filled-in prescribed format as provided on case-to-case basis to BHPV through Service provider within 24 hours of Auction without fail.
10. Any variation between the on-line bid value and the signed document will be considered as sabotaging the tender process and will invite disqualification of vendor to conduct business with BHPV as per prevailing procedure.
11. In case BHPV decides not to go for Reverse Auction procedure for this tender enquiry, the Price bids and price impacts, if any, already submitted and available with BHPV shall be opened as per BHPV's standard practice.

5.26 **Force Majeure clause:** If at the time during the continuance of this contract the performance in whole or in part by either party of any obligations under this contract shall be prevented or delayed by reason, of any war, hostilities, acts of the public enemy, civil commotion, sabotage, fires, explosions epidemics, quarantine, restrictions or acts of GOD (hereinafter referred to as events) then provided notice of happening of any such events is given by either party to other within twenty one days from the date of occurrence thereof neither party shall reason of such events be entitled to terminate this contract nor shall either party have any such non performance and delay is resumed as soon as practicable after such events has come to an end or ceased to exist, if the performance in whole or part of any obligation under this contract is prevented or delayed by reason or any such event claims for extension of time shall be granted for period considered reasonable by the purchaser subject to prompt notification by the seller to the purchaser of the particulars of the events and supply to the purchaser if required of any supporting evidence. Any waiver of time in respect of partial installment shall not be deemed to be a waiver of time in respect of remaining deliveries.

CHECK LIST

Bidder's acceptance to BHPV's Standard Commercial Terms & Conditions.

Applicable for Indian bidders

(To be submitted along with the offer – please do not change the format)

BHPV Tender No: & Date:	Bidders Confirmation / response
Technical Confirmation to BHPV's Specification	Furnished /Not Furnished
Prices have been quoted on "FIRM PRICE" basis only.	Yes / No
Prices have been quoted on "F.O.R BHPV" basis only.	Yes / No
Validity of offer (we require a minimum period of 120 days from the date of Tender Opening – please Specify)	
Sales Tax (please Specify)	
Excise Duty (please Specify)	
Delivery period from the date of Purchase Order (please Specify). A loading @ ½ % of the Purchase Order value per week will be done for the grace period requested. For evaluation 4 weeks will be considered as one month. Vendors quoting a delivery period beyond the 'the requested delivery plus the allowed grace period' is liable for rejection.	
Liquidated damages as per clause 5.12 (we require acceptance to @ ½% per week subject to a maximum of 10%).	
Risk Purchase as per clause 5.13 (Offers from vendors not accepting the Risk Purchase terms will be rejected)	Yes / No
Payment terms (Accepted / Not Accepted):	
Contract Execution Bank Guarantee (CEBG) as per Clause 5.10 (Offers from vendors not accepting to submit CEBG will be rejected)	Yes / No
Performance Bank Guarantee (PBG) as per Clause 5.11 (Offers from vendors not accepting to submit PBG will be rejected)	Yes / No
Guarantee as per clause 5.9 (The equipment shall be guaranteed for a period of 18 months from the date of supply or 12 months from the date of commissioning and acceptance whichever is earlier). (Offers from vendors not accepting to the requested guarantee period will be rejected)	Yes / No
Approximate Net Weight of the total Consignment	
Approximate Gross Weight of the total Consignment	

Signature & Office Seal of the bidder

CHECK LIST

Bidder's acceptance to BHPV's Standard Commercial Terms & Conditions.

Applicable for foreign bidders (To be submitted along with the offer – please do not change the format)

BHPV Tender No: & Date:	Bidders Confirmation / response
Technical Confirmation to BHPV's Specification	Furnished / Not Furnished
Prices have been quoted on "FIRM PRICE" basis only.	Yes / No
Prices have been quoted on "F.O.R BHPV" basis only.	Yes / No
Validity of offer (we require a minimum period of 120 days from the date of Tender Opening – please Specify)	
Currency in which quoted (please Specify)	
Port of loading (please Specify)	
Country of Origin (please Specify)	
Sales Tax (please Specify)	
Excise Tax (please Specify)	
Delivery period from the date of Letter of Intent (please Specify)	
Liquidated damages as per clause 5.12 (we require acceptance to @ ½% per week subject to a maximum of 10%)	
Risk Purchase as per clause 5.13 (Offers from vendors not accepting the Risk Purchase terms will be rejected)	Yes / No
Payment terms (Accepted / Not Accepted):	
Agency commission (refer clause 5.14)	Acceptable / Not acceptable
Contract Execution Bank Guarantee (CEPG) as per Clause 5.10 (Offers from vendors not accepting to submit CEBG will be rejected)	Yes / No
Performance Bank Guarantee (PBG) as per Clause 5.11 (Offers from vendors not accepting to submit PBG will be rejected)	Yes / No
Guarantee as per clause 5.9 (The equipment shall be guaranteed for a period of 18 months from the date of supply or 12 months from the date of commissioning and acceptance whichever is earlier). (Offers from vendors not accepting to the requested guarantee period will be rejected)	Yes / No
Approximate Net Weight of the total Consignment	
Approximate Gross Weight of the total Consignment	

Signature & Office Seal of the bidder