CORRIGENDUM

Ref: e-Tender No. KoPT/Kolkata Dock System/PnR/4/1617/ET/146
Tender No. Plg/165/CCTV/2016/11204 dated 22/07/2016

Following specification in respect of BoQ Line Item at Sl.No. "N" was inadvertently excluded from Annexure-X (Technical Specifications) of the tender document for the aforesaid tender. The same is provided hereunder as addendum to the tender document:

	1. Tender Specification for Central Core Switch (Make : Cisco /HP/ Juniper/ Extreme/Avaya/ Dell/Allied Telesis)		
SN.	**Specification For Core Switch**	**Compliance YES/NO**	**Remarks**
	Managed Layer 3 -Core Switch		
1	**Port Density and Architecture**		
a	Switch should be of non-blocking architecture for all ports from day 1 , populated with internal power supply .		
b	Layer-3 Switch. 19" Rack Mountable. 24 * 10/100/1000T ports with 24*100/1000X SFP ports in combo .Should have Min 4 * SFP+ Ports . Min 2*QSFP+ port scalability in future by populating modules/cards in the same hardware.		
c	The Switch should support Active – Active Cluster switching technology using VSS or equivalent technology. The proposed VSS or equivalent technology should support high availability for both Layer 2 and Layer 3 (RIP, RIPng, OSPF, OSPF v3) Including for IP Multicasting (PIM v4,PIM v6) for CCTV video and VOIP applications.		
d	The proposed VSS or equivalent technology should support seamless switch over of traffic between the switches in case of any kind of link or hardware failure to ensure no traffic disruption for real time voice and video applications.		
e	Should have option for min 40 Gbps of VSS or equivalent interconnection bandwidth .The Active - Active technology should be available from day as software /hardware/accessories to be supplied from day 1 .		
f	Should have option for redundant hot swappable power supply.		

g	Should have option to achieve the VSS or equivalent active - active technology over a geographically diversified location for real time data mirroring or Disaster recovery mechanism for minimum 2 Kilometers.		
h	The proposed core switch act as centralized management / provision for proposed network switches using SDN or equivalent technology for easy field replacement of any failed unit as distribution/access switches (i.e. replaced switches should get automatically reconfigured).The core switch / Central Management Platform should act as single point of management, configuration roll out and troubleshooting with Instant access or equivalent technology for proposed switches. The SDN master / Central Management Platform should also provide the functionality of Software firmware roll out to the proposed access switches for easy of management and consistent software image across the network switches. The centralized management / provisioning for distribution switches /SDN technology should be achieved over LAN or WAN environment. The centralized management platform should be achieved from day 1		
2	**Performance**		
a	Forwarding Rate 200 Mpps or more, Switching Fabric 280 Gbps or more		
b	Extensive wire-speed traffic classification for ACLs and QoS		
c	Supports Jumbo frame		
d	Support Wire-speed multicasting		
e	Min 16K MAC addresses & 4K VLANs. The switch should have capability to act as wireless controller without the need of additional hardware to manage minimum 30 access points.		
f	Latency Should be less than 3.8 micro seconds for 1G and 2.7 micro seconds for 10G a for 64 bytes packets. The latency report (RFC2544) should be furnished /provided with the compliance.		
g	Switch should have inbuilt mechanism for proactively monitoring about any malfunction like power supply or internal temperature (full internal environment).		
3	**Reliability**		
a	STP, RSTP, MSTP		

b	Dynamic Link Failover		
c	Loop Protection - Loop Detection		
d	RFC 3768 Virtual Router Redundancy Protocol (VRRP)		
e	PVST+ compatibility mode		
f	Rapid Ring Protection /resiliency technology as per the IEEE 802.17 / RPR / ERPS or equivalent technology providing the convergence time as per the standards specified above for less than/sub 50 millisecond convergence		
g	The proposed Ring protection technology shall have the high reliability functionality to handle dual failures and ensure the convergence as mentioned at 3.(f) in case of more than one link broken in the ring.		
4	**VLAN support**		
a	Supports 4096 VLANs		
b	Private VLANs		
c	IEEE 802.1ad VLAN double tagging (Q-in-Q)		
d	IEEE 802.1Q Virtual LANs		
e	IEEE 802.1v VLAN classification by protocol & port		
6	**Routing from day 1**		
a	Should support RIP and RIPng		
b	Should support VRRP and VRRPv3		
c	Should support OSPF and OSPFv3		
d	Should support BGP and BGP4 for IPv6		
e	Support Virtual Routing and Forwarding (VRF) and Equal Cost Multi-Path (ECMP) routing		
7	**IPv6 Features**		
a	IPv4 and IPv6 Dual Stack		
b	IPv6 Management ,IPv6 ACL (hardware based)		
c	SNMPv6,Telnet v6,SSHv6		
d	NTPv6 Client and server (for time synchronization)		
e	RFC 2464 for IPv6 packet transmission over Ethernet network		
f	Neighbor Discovery for IPv6		
g	RFC 4862 (SLAAC)		
h	RFC 3596 DNS Extension		
i	Internet Control Message protocol (ICMPv6)		
k	Should support IPv6 Addressing Architecture		
8	**Multicast Support**		

a	Bootstrap Router for IGMP v1,IGMP v2, IGMPv3,IGMP Query Solicitation ,MLD Snooping (MLDv1,MLDv2), MLD for IPv6,PIMv4-SM,PIM-DM,PIM-SSM		
b	RFC 4607 Source specific multicast		
c	Interoperability Rules for Multicast Routing Protocols		
9	**Security**		
a	Support 802.1x support		
b	Should Support Dynamic & Private VLANs , Guest VLAN		
c	Network Access and Control (NAC) features or equivalent to manage end point security		
d	BPDU Protection and STP Root Guard, Access Control List based on Layer 3 and layer 4, Dynamic VLAN		
e	RFC 2865 RADIUS, TACACS + and RFC 2866 RADIUS accounting		
f	Should support MAC address filtering and MAC limiting / MAC Lock down functionality.		
g	The switch should support detection of Denial of Service (DoS) attack.		
h	MD5 Message-Digest algorithm , IP authentication using keyed MD5		
10	**Quality of Service**		
a	Policy based QoS features		
b	traffic classification on priority requirement		
c	Mixed scheduling or equivalent to support complex traffic queuing requirements		
d	8 QoS queues per port and support Voice VLAN,LLDP-MED		
e	Diffserv, Strict Priority, Round Robin.		
f	Access Control Lists (ACLs) and IEEE 802.1p Priority Tagging		
g	64 Kbps bandwidth limiting per port or per traffic class		
11	**Management :**		
a	GUI, Telnet, Industry-standard CLI with built-in Help-menu		
b	Should support software release files, configuration and other files to be stored for backup with SD card or USB drives.		
c	Port mirroring and RMON (4 Groups)		

d	Out of band 10/100/1000 Ethernet management port and console management port		
e	SSH and SNMPv3 for secure management, DDM – Optical digital diagnostic monitoring as per SFF – 8472 or equivalent standards		
f	NTP , Syslog and sFlow or equivalent		
g	Event-based triggers allow user-defined scripts to be executed upon selected system events based on Time , Date , day and Event based		
i	The switch shall have pro active intelligence to create an ICMP polling for service reachability based on IP address and configure pro active action upon loss or re establishment of the service reachability		
12	**Approvals**		
a	Restrictions on Hazardous Substances (RoHS) Compliance ,IEEE 802.3az Energy Efficient Ethernet (EEE),UL, cUL, TUV		
13	Warranty		
a	The vendor should propose for minimum 3 years replacement warranty certificate /document. The certificate /document should be from the respective OEM as on OEM letter head with duly stamped and signature.		
14	Document		
a	The documents claiming the feature availability should be enclosed with the proposed solution mentioning the page/reference /section no. to evaluate by the technical team. All the documents preferably should be available with data sheets /user manual/installation guide- should be available on the OEM official website. Anything other than these should be provided on OEM letter head with duly stamped and signed.		