CSIR-NATIONAL PHYSICAL LABORATORY
Dr. KS Krishnan Marg,
New Delhi-110 012 (INDIA)

Tel : 91 11 4560 8645/8639
Email : cosp@nplindia.org

From : Director, CSIR-National Physical Laboratory

No. 14-VI/MD(1087)2021PB/T-153 Dated : 09.03.2022

CORRIGENDUM

With reference to NPL's Global Tender No. 14-VI/MD(1087)2021PB/T-153 for the procurement of "Router". Kindly note the following extension in **date** of submission & date of opening of the said tender :-

For : Due date & Time of tender submission
Read as : 30.03.2022 up to 03.00 PM (IST)

For : Date & Time of Tender Opening
Read as : 31.03.2022 from 3.00 PM (IST) onward

Apart from above, it is hereby informed that there are some change in Technical Specification of said Tender also. Hence revised broad based Technical Specification after PBC is ATTACHED with this Corrigendum. Accordingly, all the interested bidders may submit their offer accordingly.

Please also note that bids submitted without taking these changes into consideration will be rejected summarily.

All other terms & conditions will remain the same. The Corrigendum is also available on CSIR-NPL official website http:/www.nplindia.org under Tender link.

Sd/-

(Controller of Stores & Purchase)

REVISED SPECIFICATIONS OF ROUTER

Serial No. in the final approved list	23
Item	Router
Quantity	14
Warranty	Standard Warranty for 5 Years
Point of Delivery	IDSN, ISTRAC, ISRO, Bangalore

Detailed Specifications	
1. Ports	
1.1	The router must provide at least 12 1Gbit SFP and at least 12 10Gbit SFP/SFP+ ports
1.2	The router must have one console port and one for management LAN port
1.3	The router must have a throughput of at least 160 Mpps
1.4	The device must be supplied with 12 Nos. of 1000 BaseT 1G copper transceiver, and 8 Nos. 1G LR optical transceivers, 4 Nos. 10G LR optical transceivers
2. Layer 2 features	
2.1	The router must support Layer 2 forwarding and bridging, Bridge Domains (BD)
2.2	The router must support IEEE 802.1Q VLANs
2.3	The router must have the capability to configure Ethernet Link Aggregation Group (LAG), Link Aggregation Control Protocol (LACP) 802.3ad
2.4	The router must support Jumbo frames on all ports
3. Layer 3 features	
3.1	The router must support IPv4 and IPv6 unicast routing
3.2	Layer 3 interfaces: physical interfaces and sub-interfaces
3.3	The router must support Virtual Routing and Forwarding (VRF)
3.4	The router must support Open Shortest Path First (OSPFv2, OSPFv3)
3.5	The router must support Intermediate System to Intermediate System (ISIS, ISISv6)
3.6	The router must support Multiprotocol Border Gateway Protocol (MP-BGP)
3.7	The router must support Equal-Cost Multipath (ECMP) routing
3.8	The router must support Bidirectional Forwarding Detection (BFD)
3.9	The router must support Virtual Router Redundancy Protocol (VRRP)
3.10	The router must support Integrated Routing Bridging (IRB)
3.11	The router must support Generic Routing Encapsulation (GRE)
4. MPLS	
4.1	The router must support Label switching (LER, LSR)

4.2	The router must support Label Distribution Protocol (LDP)
4.3	The router must support BGP Labeled Unicast (BGP-LU)
4.4	The router must support MPLS Traffic Engineering with RSVP-TE
4.5	Point-to-point L2VPN – Static, T-LDP, EVPN-VPWS
4.6	Multipoint L2VPN –EVPN
4.7	L2/L3 EVPN with Anycast IRB
4.8	IPv6 over IPv4-only : 6PE, 6VPE
4.9	The router must support IP Loop-Free Alternate (LFA) Fast Reroute (FRR), RSVP-TE Fast Reroute (FRR)
4.10	Segment Routing with MPLS data plane (SR-MPLS), with IPv6 data plane (SRv6), Traffic Engineering (SRTE)
4.11	ISIS, OSPF, BGP extensions to segment routing
4.12	BGP Egress Peering Engineering (BGP-EPE)
4.13	Topology Independent Loop-Free Alternate (TI-LFA)
4.14	Segment Routing On-Demand Next-hop (SR-ODN) or equivalent
5. Quality of service(QoS)	
5.1	The router must support Class-based QoS, Policing, Shaping, Classification based on L2/L3/L4 fields
5.2	The router must support Virtual Output Queueing (VOQ)
5.3	The router must support Weighted Random Early Detection (WRED)
6. Timing	
6.1	The router must support SyncE with ESMC
6.2	The router must support IEEE 1588-2008 PTPv2 T-GM, T-BC, T-TSC
6.3	The router must support the following PTP profiles :G.8265.1, G.8275.1, G.8275.2, G.8273.2 Class B/C
7. Security	
7.1	The router must provide control-plane and management plane protection
7.2	Authentication, Authorization, and Accounting (AAA)
7.3	Terminal Access Controller Access-Control System Plus (TACACS+)
7.4	Secure Shell (SSH)
7.5	Layer 3 ingress and egress ACLs for IPv4 and IPv6
7.6	Layer 2 ingress ACLs
7.7	Unicast Reverse Path Forwarding (Unicast RPF)
8. Management	
8.1	CLI for router configuration
8.2	Out of band monitoring with SNMP
9. Power	

9.1	Unit shall accept dual AC/DC power supply and shall be capable of operating with single power supply. If the unit accepts DC power, suitable AC to DC adapters shall be offered along with the units. The AC input shall be as per Indian standards at 220V 50Hz. Required no of power cables (IEC-13/14 Power Cord 2 Meter) shall be offered with each unit.
10. Regulatory standards compliance	
10.1	FCC and CE norms, RoHS compliance
11. Quality	
11.1	The specified product must have active services and support and must not be nearing EOL
11.2	Any software licenses that are required to realize the solution must be incorporated in the system
11.3	All accessories needed to realize the system must be sourced from one manufacturer
11.4	The design and production of critical subsystems like system board, controllers etc., shall be under the control of manufacturer & international quality certified realization process. All subsystems of the system shall have been selected to achieve optimal performance and high reliability.
11.5	The system architecture shall ensure maximum performance for data forwarding. The subsystems, the processor boards, the interconnections among subsystems and the software shall be properly matched to ensure maximum performance.
11.6	Systems shall be only from a proven product line from highly reputed manufacturers. The product line shall be an internationally established brand reputed for high quality and with wide acceptance in deployment for mission critical and business critical functions in the industry.
11.7	The manufacturer of the system shall be in total control of the lifecycle (Design, release, support, obsolescence and termination of the critical subsystems like motherboard, controllers etc.,) of the product
12. **Product Demo and Configuration**	
	The manufacturer/vendor shall install and configure the item based on the specifications mentioned above. The vendor shall provide necessary technical documents and configuration manual for the product. The vendor shall also provide an overview of the product and detailed procedure to configure the device as per requirements and for troubleshooting