CORRIGENDUM ISSUED

AND

IMPORTANT POINTS

FOR NATIONAL COMPETITIVE BIDDING UNDER TEQIP PHASE II

The prebid meeting for the packages to be purchased under National Competitive Bidding for TEQIP Phase II was held on 30.11.2012 at 3.00 PM in the Conference Hall. The meeting was presided by Dr. V. Lakshmiprabha, Principal, Government College of Technology, Coimbatore-641013. The items mentioned under NCB were taken up one by one, for clarification if any sought by the probable bidders. Discussion followed by clarifications were carried out.

The corrigendum is issued (if any) for each item respectively as below.

Sl. No. 1	TEQIP-II/ TN/TN2G01/2 **Digital Signal Processing Lab Solution**
	No changes in the specifications

Sl.No.2	TEQIP-II/TN/TN2G01/4 **Power System Lab Trainer**
	No changes in the specifications

Sl.No.3	TEQIP-II/TN/TN2G01/12 **UV Spectro photometer and accessories (Absorption)**
	No changes in the specifications

Sl. No. 4	TEQIP-II/TN/TN2G01/13 **Impedence Measurement Meter**
	No changes in the specifications

Sl. No. 5	TEQIP-II/TN/TN2G01/15 **Hall Effect Measurement System**
	No changes in the specifications

Sl.No.6	TEQIP-II/TN/TN2G01/25 **Simultaneous DTA-TGA System ,Thermal Analysis System Software and Interface**
	Corrections are given to be read along with the bid document specifications. The following are issued as **corrigendum**. ## Corrigendum (i) In para (1) - 346-68750-93 is deleted. (ii) In para (2) - 222-10200-93 is deleted. (iii) In para (3) - 201-51976 is deleted. (iv) In para (4) - 201-53843 is deleted.

Sl.No.7	TEQIP-II/TN/TN2G01/26 **Binary HPLC System with Chromatography Work Station**
	Corrections are given to be read along with the bid document specifications. The following are issued as **corrigendum**. ## Corrigendum (i) In para (1), read as **PUMP** instead of P100 PUMP (ii) In para (1), Dimension 450 mm * 300 mm *160 mm [length * width * height] is deleted. (iii) In para (2), read as **UV Detector** instead of UV100 UV Detector (iv) In para (2), read as **workstation** instead of WS100 workstation (v) In para (7), read as **100 PLUS** instead of LC 100 PLUS

Sl.No.8	TEQIP-II/TN/TN2G01/28 **TOC Analyser** No changes in the specifications

Sl.No. 9	TEQIP-II/TN/TN2G01/36 **Scanning Electron Microscope** No changes in the specifications

Sl.No.10	TEQIP-II/TN/TN2G01/52 **Optical microscope with photograph setter and micro hardness tester** Corrections are given to be read along with the bid document specifications. The following are issued as **corrigendum**. ## Corrigendum **Specifications of S.No. 4 and S.No.19 are changed and read as follows.**

S.No.	PARAMETERS	SPECIFICATIONS
4.	Force Duration	Time 1-50 secs or more
19.	Automatic Reading Method	Digital Image Analysis (Vickers, Knoop Hardness)
	Automatic Reading Time	Approx. 0.3 sec
	Test result storage format	Test conditions and results :CSV Images: Images can be copied to clipboard

Sl.No.11	TEQIP-II/TN/TN2G01/57 **Server, Nodes and High speed switches, router, Firewall** ## Corrigendum **ADDENDUM** **Refer Annexure (page 5) for REFRAMED specifications**

IMPORTANT POINTS
FOR NATIONAL COMPETITIVE BIDDING UNDER TEQIP PHASE II

Waiving of Customs Duty :

This is not possible under current stipulated time period.   However the

quotation shall be submitted indicating the duty component separately.

Quoting in currency other than rupees:

"Rates to be quoted only in rupees".

Quotations to be submitted:

Two copies in single cover

PRINCIPAL

SECTION VI: TECHNICAL SPECIFICATIONS

<u>1. Core Switch : Qty 1Nos.</u>

1.1. Port Density

　1.1.1.   24 * SFP Slots with Min 2 * SFP+ ports for 100/1000/10G connectivity and should be scalable to another 2 * SFP+ ports by adding line cards.

　1.1.2.   Should support Active – Active Clustering VSS technologie or équivalent for high availbility and qucik resiliency.

　1.1.3.   The VSS Bandwidth should be Min of 40Gbps between the switches.

　1.1.4.   The SFP slots / proposed SFP modules must support Digital Diagnostic monitoring as per the DDM standards SFF – 8472.

1.2. Performance

　1.2.1.   Forwarding Rate: 101Mpps, Switching Fabric: 136 Gbps

　1.2.2.   Extensive wire-speed traffic classification for ACLs and QoS

　1.2.3.   Supports 9KB Jumbo frame

　1.2.4.   Up to 32K MAC addresses

　1.2.5.   4K Active VLANs

　1.2.6.   Min 512MB DDR SDRAM or better, Min 64MB Flash Memory or better

　1.2.7.   Modular operating system, Redundant Power Supply option

　1.2.8.   VLAN Double Tagging

　1.2.9.   Full environmental monitoring of PSUs, fans, temperature and internal voltages, with SNMP traps to alert network managers in case of any failure

1.3. Full Layer 3 Routing Support

　1.3.1.   RIP,OSPF, RIPng

　1.3.2.   Route Maps

　1.3.3.   Route Redistribution (OSPF, BGP, RIP)

　1.3.4.   IPv6 switching and routing in hardware

1.4. Resiliency

　1.4.1.   STP, RSTP, MSTP (802.1s)

　1.4.2.   Link Aggregation (802.3ad LACP) – at least 31 groups

　1.4.3.   VRRP .

　1.4.4.   The switch should support for sub <50msec ring convergence, optimized for video or voice traffic as per IEEE 802.17 or equivalent.

1.5.23. Shall support Encryptions

1.6. Quality of Service

    1.6.1. Policy based QoS features

    1.6.2. Highly configurable traffic classification

    1.6.3. Extensive remarking capabilities, to fit in with any network's QoS scheme

    1.6.4. Control plane traffic prioritization

    1.6.5. Mixed scheduling, to support complex traffic queuing requirements

    1.6.6. 8 QoS queues per port

    1.6.7. Two-rate three-color (green, yellow, red) bandwidth metering, with burst sizes limited to 64Kbps

    1.6.8. ACLs Access Control Lists

    1.6.9. IEEE 802.1p Priority Tagging

1.7. Multicast Support

    1.7.1. Bootstrap Router for PIM-SM

    1.7.2. IGMP Proxy

    1.7.3. IGMP Snooping

    1.7.4. MLD Snooping (v1 and v2)

    1.7.5. 1112 Host extensions for IP multicasting

    1.7.6. Internet Group Management Protocol v2 (IGMPv2)

    1.7.7. PIM-SM

    1.7.8. Interoperability Rules for Multicast Routing Protocols

    1.7.9. IGMPv3

    1.7.10. PIM-DM

    1.7.11. IGMP & MLD snooping switches

1.8. Management

    1.8.1. Console management port on the front panel for ease of access

    1.8.2. An USB or equivalent memory card socket on the front panel, allowing software release files, configuration and other files to be stored for backup and distribution to other switches

    1.8.3. Port mirroring

    1.8.4. SSH and SNMPv3 for secure management

    1.8.5. RADIUS Authentication

    1.8.6. RMON (4 groups)

    1.8.7. Event-based Triggers

    1.8.8. Graphical User Interface (GUI)

1.8.9. Industry-standard CLI with built-in Help

1.8.10. Powerful CLI scripting tool

1.8.11. sFlow

1.8.12. RoHS Compliant

2. Distribution switches – Qty-2Nos

2.1. Port Density

2.1.1. 24 * SFP Slots with Min 2 * SFP+ ports for 100/1000/10G connectivity and should be scalable to another 2 * SFP+ ports by adding line cards.

2.1.2. Should support Active – Active Clustering VSS technologie or équivalent for High availability and qucik resiliency.

2.1.3. The VSS Bandwidth should be Min of 40Gbps between the switches. – if possible can be included

2.1.4. The SFP slots / proposed SFP modules must support Digital Diagnostic monitoring as per the DDM standards SFF – 8472. - if possible can be included

2.1.5. Switch should have full layer 3 supporting Routing Protocol RIP, OSPF and BGB Scalable

2.2. System Capacity

2.2.1. 512 MB RAM

2.2.2. 64MB flash memory

2.2.3. 32 K MAC address

2.2.4. Packet buffer memory 2Mbit

2.3. Performance

2.3.1. Throughput 101Mpps

2.3.2. Switch fabric speed 136Gbps

2.3.3. Supports 9216 jumbo packets

2.3.4. The switch should support for sub <50msec ring convergence, optimized for video or voice traffic as per IEEE 802.17 or equivalent.

2.4. VLANs

2.4.1. Supports up to 4094 Active VLANs

2.4.2. Port-based

2.4.3. IEEE 802.1Q VLAN tag

2.4.4. GVRP

2.4.5. GMRP

2.4.6. Dynamic Vlan

2.5. Features

    2.5.1. Auto-negotiation, duplex, MDI/MDI-X

    2.5.2. IEEE 802.3x flow control / back pressure

    2.5.3. Head of Line (HoL)

    2.5.4. Storm Control : Broadcast, multicast and unicast (DLF)

    2.5.5. Spanning-Tree Support

    2.5.6. IEEE 802.1D Spanning-Tree Protocol

    2.5.7. IEEE 802.1w Rapid Spanning-Tree

    2.5.8. Pass-through BPDU

    2.5.9. Link Aggregation

    2.5.10. Static port trunk

    2.5.11. IEEE 802.3ad LACP link aggregation

    2.5.12. Support for 12 groups per device

    2.5.13. Trunk can support up to eight members per group

    2.5.14. MAC address aging

    2.5.15. Port mirroring

    2.5.16. RFC 826 ARP

    2.5.17. DHCP

    2.5.18. RFC 2131 DHCP client

    2.5.19. sFlow

    2.5.20. Access control list

    2.5.21. LLDP and LLDP - MED

2.6. Quality of Service (QoS)

    2.6.1. IEEE 802.1p QoS

    2.6.2. Eight priority queues

    2.6.3. Strict priority and weighted round robin

2.7. Multicast Standards

    2.7.1. Layer 2 multicast forwarding and filtering up to 256 groups

    2.7.2. IGMPv1 /V2 and IGMP V3

2.8. Network Management

    2.8.1. RFC 1157 SNMPv1/v2c,RFC 2570 SNMPv3,RFC 1215 SNMP traps,RFC 1213 MIB-II

    2.8.2. RFC 1573 Extended interface MIB

    2.8.3. RFC 1757 RMON 4 groups: Stats, History, Alarms, Events

    2.8.4. Web-based GUI

       2.8.5.   Industry standard CLI

       2.8.6.   RFC 854 Telnet

       2.8.7.   Network Time Protocol

       2.8.8.   HTTP

       2.8.9.   TFTP

   2.9. Security

       2.9.1.   Port security (limited/dynamic)

       2.9.2.   IEEE 802.1x Basic port base

       2.9.3.   IEEE 802.1x Multiple host mode

       2.9.4.   IEEE 802.1x EAP-MD5

       2.9.5.   RFC 2865 Radius client

       2.9.6.   SSH server

       2.9.7.   Open standard NAC

3.   Access Layer switch : Qty -   25 Nos.

   3.1. Port Density

       3.1.1.   24 port stackable 10/100/1000T Layer 2 switch

       3.1.2.   4 standby SFP bays (unpopulated)

   3.2. Performance

       3.2.1.   Wirespeed switching on all Ethernet ports for all packet sizes including jumbo frames up to 9Kbytes

       3.2.2.   Throughput up to 50.6Mbps

       3.2.3.   Switch fabric speed 88Gbps

   3.3. System Capacity

       3.3.1.   128MB RAM

       3.3.2.   16MB flash memory

       3.3.3.   Up to 4,096 VLAN ID

       3.3.4.   8,000 MAC address

       3.3.5.   Packet buffer memory 12Mbit

   3.4. Management

       3.4.1.   Industry standard CLI

       3.4.2.   Web Interface

       3.4.3.   Secure encrypted Web and CLI management with SSHv2 and SSL

       3.4.4.   Two levels access privileges

       3.4.5.   SNMP

3.5. Switching Platform

    3.5.1. Single IP address stack management

    3.5.2. 20Gig resilient ring stacking architecture

    3.5.3. Redundant standby stack master

    3.5.4. Should support min 200 ports in single stack

3.6. QoS

    3.6.1. Eight priorities assigned to four queues

    3.6.2. IEEE 802.1p for Layer 2 QoS

    3.6.3. DSCP (DiffServ) for Layer 3 QoS

    3.6.4. IEEE 802.1p to DSCP remarking traffic ready for transport to the Layer 3 core of the network

    3.6.5. Layer 2 and Layer 3 Access Control Lists (ACL)

    3.6.6. Guest VLAN

    3.6.7. TACACS+: for ease of management security administration

    3.6.8. Layer 2 and Layer 3 Access Control Lists (ACL)

    3.6.9. MAC ACLs – classification fields are based on Layer 2 fields.

3.7. General Standards

    3.7.1. IEEE 802.1D Bridging

    3.7.2. IEEE 802.3x BackPressure/flow control

3.8. Redundancy Standards

3.9. IEEE 802.1D Spanning-Tree Protocol with optional fast link capability

3.10. IEEE 802.1W Rapid Spanning-Tree

3.11. IEEE 802.1s Multiple Spanning-Tree

3.12. IEEE 802.3ad LACP link aggregation

3.13. (with up to eight members per group and up to eight groups per device)

3.14. Static port trunk

3.15. Quality of Services (QoS)

3.16. QoS in Layer 2 (IEEE 802.1p compliant Class of Service)

3.17. Traffic prioritization using IEEE 802.1p, ToS, DSCP fields

3.18. Map IEEE 802.1p priorities to CoS queues to prioritize

3.19. traffic at egress

3.20. Strict scheduling and weighted round robin

3.21. VLANs

3.22. IEEE 802.1Q VLAN tagging

3.23.	Up to 256 active VLANs
3.24.	Port-based VLANs
3.25.	MAC-based VLANs
3.26.	Private VLANs
3.27.	GARP VLAN Registration Protocol (GVRP)
3.28.	Multicast Standards
3.29.	IGMP snooping (ver. 3)
3.30.	Management and Monitoring
3.31.	WEB, CLI, Telnet, SSH, serial console port
3.32.	RFC 1157 SNMPv1/v2c
3.33.	RFC 2570 SNMPv3
3.34.	RFC 2030 SNTP, Simple Network Time Protocol
3.35.	Syslog event
3.36.	Dual software images
3.37.	Security
3.38.	Management security: username and password protection
3.39.	SSHv2 for Telnet management
3.40.	SSLv3 for Web management
3.41.	RFC 1492 TACACS+
3.42.	RFC 2618 RADIUS authentication
3.43.	RFC 2865 IEEE 802.1x port-based network access control
3.44.	MAC-based network access control
3.45.	Guest VLANs
3.46.	ACL – Access Control Lists
3.47.	Fault Protection
3.48.	Broadcast storm control
3.49.	ROHS compliant

4. Layer 2 Managed POE Switch : Qty 10 Nos

    4.1. Port Density

        4.1.1. 24-port POE stackable 10/100TX

        4.1.2. 2 x SFP bays or 2 x 10/100/1000T ports (RJ-45)

    4.2. Power over Ethernet

        4.2.1. Provides standards based 802.3af

        4.2.2. Power over Ethernet to all 24 10/100 ports

4.2.3. Support for up to 24 class 2 Powered devices at 7.3 watts

4.2.4. Support for up to 12 class 3 Powered devices at 15.4 watts

4.3. Performance

4.3.1. Chipset switching capacity 12.8Gbps

4.3.2. 64MB RAM

4.3.3. 16MB Flash Memory

4.3.4. Up to 4,096 VLAN ID

4.3.5. 8,000 MAC address

4.4. Management

4.4.1. Industry Standard CLI & WebGUI with SSH v2 and SSL

4.4.2. SNMP v3

4.5. General Features

4.5.1. Single IP address Stack management

4.5.2. Should support Min 200 Ports in a Single stack.

4.5.3. Across Stack Link Aggregation, Stack VLAN configuration, Stack Port Mirroring, Trunking across stack

4.6. Quality of Services

4.6.1. 8 Priorities assigned to 4 queues

4.6.2. 802.1p for Layer 2 QoS, DSCP (Diffserv) for Layer 3 QoS

4.6.3. 802.1p to DSCP remarking traffic, Traffic prioritization using 802.1p, ToS, DSCP fields

4.6.4. Strict Scheduling and Weighted Round Robin

4.7. Security

4.7.1. Guest VLAN

4.7.2. IP & MAC ACLs

4.7.3. SSHv2 for Telnet management

4.7.4. SSLv3 for WEB management

4.7.5. RFC 1492 TACACS+

4.7.6. RFC 2138 RADIUS Authentication

4.7.7. IEEE 802.1x Port-based network access control

4.7.8. Broadcast, Multicast Storm Control

4.8. General Standards

4.8.1. 802.1d Bridging

4.8.2. 802.3x BackPressure/ Flow Control

4.8.3. Redundancy Standards

4.8.4.　802.1D Spanning Tree Protocol

4.8.5.　802.1W Rapid Spanning Tree

4.8.6.　802.1s Multiple Spanning Tree

4.8.7.　802.3ad LACP Link Aggregation

4.8.8.　Static port trunk

4.8.9.　IGMP snooping v3

4.8.10.　VLANs

4.8.10.1.　IEEE 802.1Q VLAN Tagging

4.8.10.2.　Up to 256 VLANs

4.8.10.3.　Port-based VLANs

4.8.10.4.　MAC-based VLANs

4.8.10.5.　Private VLANs

4.8.10.6.　GARP VLAN Registration Protocol (GVRP)

4.9.　Power Characteristics

4.9.1.　Voltage input 100- 240VAC

4.9.2.　Max Power consumption 54W

4.10.　　Environmental Specifications

4.10.1.　Operating Temp 0°C to 45°C (32F to 113F)

4.11.　　Electrical/ Mechanical Approvals

4.11.1.　Safety UL 1950 (UL/cUL), EN60950 (TUV), EMI FCC Class A, EN55022 Class A, VCCI Class A, C-Tick, EN61000-3-2, EN61000-3-3, Immunity EN55024

4.11.2.　RoHS compliant

5.　Fiber Modules for Core and Distribution Switches : 46 Nos.

Media type : Single Mode Fibre
Wavelength 1310nm
Maximum data rate 1.25Gbps
Distance 10km
Transmit power (min) -9dBm
Transmit power (max) -3dBm
Receive sensitivity
at 1.25Gbps (min) -20dBm
at 1.25Gbps (max) -36dBm
Fiber connectors: LC
Operating temp. -5°C to 70°C
Operating humidity 0% to 85% (non-condensing)
Storage temp. -40°C to 85°C
Storage humidity 0% to 85% (non-condensing)