

## **Kerala Start-Up Mission (KSUM)**

Formerly Technopark Technology Business Incubator (T-TBI)

G3B, Thejaswini, Technopark Campus

Thiruvananthapuram 695 581

Kerala State, India

Phone No: 0471 2700270

### **NOTICE INVITING TENDER**

SCHEDULE		
Sl No	Activity Description	Schedule
1	Tender Enquiry No	KSUM/T/NWI/F17/2018-19/01
2	Sale of Tender Document	<b>March 19, 2019 to March 25 , 2019 upto 6:00 pm</b> Tender document can be downloaded from <a href="http://www.startupmission.kerala.gov.in/tender">www.startupmission.kerala.gov.in/tender</a>
3	No of Covers	2 (Technical & Financial)
4	Delivery time	In 1 weeks
5	Warranty period	Limited lifetime with next business day advance replacement (where available)
6	Tender Validity	7 days
7	Services to be offered	Supply and installation of Network Manageable Switches, Cable Organizer for Kerala Startup Mission. (Please refer Tender Documents for more details)
8	Tender Fee	Rs 300
9	Earnest Money Deposit (EMD)	Rs 1100
10	Time and last date of online submission of Tender/bid	March 25, 2019 upto 6:00 pm
11	Time and Date of Opening of Technical Bid	March 26, 2019 at 10:00 am

All communications shall be addressed to the Chief Executive Officer, Kerala Start-Up Mission (Formerly Technopark-TBI), G3B, Thejaswini, Technopark Campus, Kariyavattom, Trivandrum 695581



The bid documents and other details may be downloaded from the website [www.etenders.kerala.gov.in](http://www.etenders.kerala.gov.in). The EMD of **Rs.1,100/-** and non-refundable bid submission fee of **Rs.300/-** shall be remitted as Demand Draft separately.

Bidder should ensure that bid submission fees and EMD are remitted as separate transactions/DDs, such that EMD should be a separate DD and Tender Fee Shall be separate DD. Combined remittance for bid submission fee and EMD shall be treated as invalid transaction.

All Bid documents are to be submitted as hardcopy in the specified format in address given below. Please specify tender documents for more details.

**The Chief Executive Officer**

Kerala Start-Up Mission (Formerly Technopark-TBI),  
G3B, Thejaswini, Technopark Campus,  
Kariyavattom, Trivandrum 695 581  
Phone No: 0471 2700270  
Email: [procurement@startupmission.in](mailto:procurement@startupmission.in)

Place: Trivandrum  
Date: 19-03-2019

**Procurement Officer**  
Kerala Start-Up Mission

**Note:** - If the date of opening of bids happens to be a holiday; the actual date for the same will be the next working day. No separate intimation in this regard will be issued.

**Kerala Start-Up Mission**  
 (Formerly Technopark TBI)  
 G3B, Thejaswini, Technopark Campus  
 Thiruvananthapuram 695 581  
 Kerala

**TENDER DOCUMENT**  
 KSUM/T/NWI/FI7/2018-19/01

**Item required**

<b>Supply and installation of Switch, Patch cord cable, cable organizer, Screw set</b>				
<b>Sl No</b>	<b>Description of items required</b>	<b>Qty</b>	<b>Warranty</b>	<b>Delivery</b>
<b>1</b>	<b>Switch 28 Port Manageable</b>	<b>1</b>	<b>Limited lifetime with next business day advance replacement (where available)</b>	<b>Within 1 week</b>
<b>2</b>	<b>Swtich 52 Port Manageable</b>	<b>1</b>		
<b>3</b>	<b>Patch Cord Cat6 UTP Cable - 1 Metre</b>	<b>100</b>	<b>NA</b>	
<b>4</b>	<b>Patch Cord Cat6 UTP Cable - 2 Metre</b>	<b>100</b>	<b>NA</b>	
<b>5</b>	<b>Horizontal Cable Organizer</b>	<b>3</b>	<b>NA</b>	
<b>6</b>	<b>Rack Mounting Hardware Screw Set (Nut-10, Screw -10, Washer-10) (for mounting Switch and cable oraganizer)</b>	<b>1 Packet</b>	<b>NA</b>	

## Detailed Specification

### 1. 28 Port Manageable Switch Specification -1 nos

Sl No.	Items	Specifications
1	General Features	<ul style="list-style-type: none"> <li>The Switch should have Minimum 24 x 10/100/1000 + 4 x Gigabit SFP (2 combo).</li> <li>The Switch should support non-blocking architecture with minimum switching capacity of 56 Gbps</li> <li>The Offered switch should support minimum 38 mpps of forwarding rate (64-byte packets)</li> <li>RAM-512 MB</li> <li>Flash Memory- 256 MB</li> </ul>
2	layer 3 Switching features	<ul style="list-style-type: none"> <li>Should support Wirespeed routing of IPv4 packets, support Up to 1K static routes and up to 128 IP interfaces</li> <li>Should Support for CIDR</li> <li>Should support Configuration of Layer 3 interface on physical port, LAG, VLAN interface, or loopback interface</li> <li>Switch should functions as an IPv4 DHCP server serving IP addresses for multiple DHCP pools/scopes &amp; Support for DHCP options</li> <li>Should Support UDP</li> </ul>
3	layer 2 Switching features	<ul style="list-style-type: none"> <li>Switch should support Standard 802.1d Spanning Tree support, Fast convergence using 802.1w (Rapid Spanning Tree [RSTP]), enabled by default 8 instances are supported, Multiple Spanning Tree instances using 802.1s (MSTP)</li> <li>Switch should support for IEEE 802.3ad Link Aggregation Control Protocol (LACP), Up to 8 groups, Up to 8 ports per group with 16 candidate ports for each (dynamic) 802.3ad link aggregation</li> <li>Switches should support for up to 4096 VLANs simultaneously, Port-based and 802.1Q tag-based VLANs, MAC-based VLAN, Management VLAN</li> <li>Private VLAN Edge (PVE), also known as protected ports, with multiple uplinks, Guest VLAN, Unauthenticated VLAN, Dynamic VLAN assignment via Radius server along with 802.1x client authentication and CPE VLAN</li> <li>Switch should support Guest VLAN, Voice VLAN,GVRP/GARP. Support Dynamic Host Configuration Protocol (DHCP) Relay at Layer 2 with option 82, Internet Group Management Protocol (IGMP) versions 1,2 and 3 snooping and atleast 900 multicast groups.</li> <li>The Offered switch should be able to support source based multicasting.</li> <li>The offered switch should support Head-of-line (HOL) blocking prevention.</li> </ul>
4	Security features	<ul style="list-style-type: none"> <li>Should Support SSH protocols &amp; SSL Support</li> <li>The Switch must have IEEE 802.1X: RADIUS authentication and accounting, Single/multiple host mode, Single/multiple sessions Support for time-based 802.1X, and Dynamic VLAN assignment</li> <li>Switch Should Support Web based authentication,</li> <li>The Switch should support DHCP Snooping, STP Root Guard, STP BPDU</li> <li>The switch should have DOS prevention &amp; Storm Control</li> <li>Switch should support Secure Core technology</li> <li>Switch should support IP/MAC/Port Binding (IPMB) &amp; Dynamic ARP Inspection</li> <li>Should support RADIUS and TACACS authentication</li> </ul>

		<ul style="list-style-type: none"> <li>The Switch should support ACL's up to 512 rules</li> </ul>
5	Quality of Services features	<ul style="list-style-type: none"> <li>The offered switch should support Priority levels with 8 hardware queues.</li> <li>The Switch should support scheduling using Strict priority and weighted round-robin (WRR) and Queue assignment based on DSCP and class of service (802.1p/CoS)</li> <li>The Switch should be capable of supporting Class of service based on following:- Port based; 802.1p VLAN priority based; IPv4/v6 IP precedence/type of service (ToS)/DSCP based; differentiated services (DiffServ); classification and remarking ACLs, trusted QoS.</li> <li>Should Support Ingress policer; egress shaping and rate control; per VLAN, per port, and flow based.</li> <li>Should support TCP congestion avoidance.</li> <li>The Switch should support rate limiting using Ingress policer; egress shaping and rate control; per VLAN, per port, and flow based.</li> </ul>
6	IP V6 Features	<p>The Offered switch should support following</p> <ul style="list-style-type: none"> <li>IPv6 host mode</li> <li>IPv6 over Ethernet</li> <li>Dual IPv6/IPv4 stack</li> <li>IPv6 neighbor and router discovery (ND)</li> <li>IPv6 stateless address auto-configuration</li> <li>Path maximum transmission unit (MTU) discovery</li> <li>Duplicate address detection (DAD)</li> <li>ICMP version 6</li> <li>IPv6 over Ipv4 network with Intra-Site Automatic Tunnel Addressing Protocol (ISATAP)</li> <li>The switch should have support for IPv6 application such as Web/SSL, Telnet server/SSH, ping, trace route, Simple Network Time Protocol (SNTP), Trivial File Transfer Protocol TFTP), SNMP, RADIUS, syslog, DNS client, protocol-based VLANs.</li> </ul>
7	Management features	<ul style="list-style-type: none"> <li>The offered switch should have Built-in switch configuration utility of easy browser-based device configuration (HTTP/HTTPS).</li> <li>The built-in web based utility should be support configuration, system dashboard, system maintenance, and monitoring</li> <li>The Switch should support SNMP version 1, 2c and 3 with support for traps, and SNMP version 3 user-based security model (USM)</li> <li>The Switch should support remote monitoring with Embedded RMON software agent with support of 4 RMON groups (history, statistics, alarms, and events) for enhanced traffic management monitoring, and analysis.</li> <li>Should Support Vlan Mirroring, Port Mirroring</li> <li>Should Support Cloud Services and GUI Localization</li> <li>The Switch should support Text-editable config files easier and faster mass deployments.</li> <li>The Switch should support minimum 16K mac addresses and jumbo frames with Frame sizes up to 9 KB supported on Gigabit interfaces.</li> <li>Should have Energy Detect option for Power efficiency &amp; Saving</li> <li>The Switch should support Time- Based port operation</li> </ul>
8	Standards	<ul style="list-style-type: none"> <li>Switch should support IEEE 802.3 10BASE-T Ethernet, IEEE 802.3u 100BASE-TX Fast Ethernet, IEEE 802.3ab 1000BASE-T Gigabit Ethernet, IEEE 802.3ad LACP, IEEE 802.3z Gigabit Ethernet, IEEE 802.3x Flow Control, IEEE 802.1D (STP, GARP,</li> </ul>

		and GVRP),IEEE 802.1Q/p VLAN, IEEE 802.1w RSTP, IEEE 802.1s Multiple STP, IEEE 802.1X Port Access Authentication, IEEE 802.3af, IEEE 802.3at, <ul style="list-style-type: none"> <li>Should have UL (UL 60950), CSA (CSA 22.2), CE mark, FCC Part 15 (CFR 47) Class A Certifications</li> </ul>
9	Warranty	3 year

## 2. 52 Port Manageable Switch Specification -1 nos

Sl No.	Items	Specifications
1	General Features	<ul style="list-style-type: none"> <li>The Switch should have Minimum 48 x 10/100/1000 + 2 SFP slots, 2 Gigabit Ethernet combo.</li> <li>The Switch should support non-blocking architecture with minimum switching capacity of 104 Gbps</li> <li>The Offered switch should support minimum 77 mpps of forwarding rate (64-byte packets)</li> <li>RAM-512 MB</li> <li>Flash Memory- 256 MB</li> </ul>
2	layer 3 Switching features	<ul style="list-style-type: none"> <li>Should support Wirespeed routing of IPv4 packets, support Up to 1K static routes and up to 128 IP interfaces</li> <li>Should Support for CIDR</li> <li>Should support Configuration of Layer 3 interface on physical port, LAG, VLAN interface, or loopback interface</li> <li>Switch should functions as an IPv4 DHCP server serving IP addresses for multiple DHCP pools/scopes &amp; Support for DHCP options Should Support UDP</li> </ul>
3	layer 2 Switching features	<ul style="list-style-type: none"> <li>Switch should support Standard 802.1d Spanning Tree support, Fast convergence using 802.1w (Rapid Spanning Tree [RSTP]), enabled by default 8 instances are supported, Multiple Spanning Tree instances using 802.1s (MSTP)</li> <li>Switch should support for IEEE 802.3ad Link Aggregation Control Protocol (LACP), Up to 8 groups, Up to 8 ports per group with 16 candidate ports for each (dynamic) 802.3ad link aggregation</li> <li>Switches should support for up to 4096 VLANs simultaneously, Port-based and 802.1Q tag-based VLANs, MAC-based VLAN, Management VLAN</li> <li>Private VLAN Edge (PVE), also known as protected ports, with multiple uplinks, Guest VLAN, Unauthenticated VLAN, Dynamic VLAN assignment via Radius server along with 802.1x client authentication and CPE VLAN</li> <li>Switch should support Guest VLAN, Voice VLAN,GVRP/GARP. Support Dynamic Host Configuration Protocol (DHCP) Relay at Layer 2 with option 82, Internet Group Management Protocol (IGMP) versions 1,2 and 3 snooping and atleast 900 multicast groups.</li> <li>The Offered switch should be able to support source based multicasting.</li> <li>The offered switch should support Head-of-line (HOL) blocking prevention.</li> </ul>
4	Security features	<ul style="list-style-type: none"> <li>Should Support SSH protocols &amp; SSL Support</li> <li>The Switch must have IEEE 802.1X: RADIUS authentication and accounting, Single/multiple host mode, Single/multiple sessions Support for time-based 802.1X, and Dynamic VLAN assignment</li> </ul>

		<ul style="list-style-type: none"> <li>• Switch Should Support Web based authentication,</li> <li>• The Switch should support DHCP Snooping, STP Root Guard, STP BPDU</li> <li>• The switch should have DOS prevention &amp; Storm Control</li> <li>• Switch should support Secure Core technology</li> <li>• Switch should support IP/MAC/Port Binding (IPMB) &amp; Dynamic ARP Inspection</li> <li>• Should support RADIUS and TACACS authentication</li> <li>• The Switch should support ACL's up to minimum 512 rules.</li> </ul>
5	Quality of Services features	<ul style="list-style-type: none"> <li>• The offered switch should support Priority levels with 8 hardware queues.</li> <li>• The Switch should support scheduling using Strict priority and weighted round-robin (WRR) and Queue assignment based on DSCP and class of service (802.1p/CoS)</li> <li>• The Switch should be capable of supporting Class of service based on following:- Port based; 802.1p VLAN priority based; IPv4/v6 IP precedence/type of service (ToS)/DSCP based; differentiated services (DiffServ); classification and remarking ACLs, trusted QoS.</li> <li>• Should Support Ingress policer; egress shaping and rate control; per VLAN, per port, and flow based.</li> <li>• Should support TCP congestion avoidance.</li> <li>• The Switch should support rate limiting using Ingress policer; egress shaping and rate control; per VLAN, per port, and flow based.</li> </ul>
6	IP V6 Features	<p>The Offered switch should support following</p> <ul style="list-style-type: none"> <li>• IPv6 host mode</li> <li>• IPv6 over Ethernet</li> <li>• Dual IPv6/IPv4 stack</li> <li>• IPv6 neighbor and router discovery (ND)</li> <li>• IPv6 stateless address auto-configuration</li> <li>• Path maximum transmission unit (MTU) discovery</li> <li>• Duplicate address detection (DAD)</li> <li>• ICMP version 6</li> <li>• IPv6 over Ipv4 network with Intra-Site Automatic Tunnel Addressing Protocol (ISATAP).</li> <li>• The switch should have support for IPv6 application such as Web/SSL, Telnet server/SSH, ping, trace route, Simple Network Time Protocol (SNTP), Trivial File Transfer Protocol TFTP), SNMP, RADIUS, syslog, DNS client, protocol-based VLANs.</li> </ul>
7	Management features	<ul style="list-style-type: none"> <li>• The offered switch should have Built-in switch configuration utility of easy browser-based device configuration (HTTP/HTTPS).</li> <li>• The built-in web based utility should be support configuration, system dashboard, system maintenance, and monitoring.</li> <li>• The Switch should support SNMP version 1, 2c and 3 with support for traps, and SNMP version 3 user-based security model (USM).</li> <li>• The Switch should support remote monitoring with Embedded RMON software agent with support of 4 RMON groups (history, statistics, alarms, and events) for enhanced traffic management monitoring, and analysis.</li> <li>• Should Support Vlan Mirroring, Port Mirroring.</li> <li>• Should Support Cloud Services and GUI Localization.</li> <li>• The Switch should support Text-editable config files easier and faster mass deployments.</li> <li>• The Switch should support minimum 16K mac addresses and jumbo frames with</li> </ul>

		<p>Frame sizes up to 9 KB supported on Gigabit interfaces.</p> <ul style="list-style-type: none"> <li>• Should have Energy Detect option for Power efficiency &amp; Saving.</li> <li>• The Switch should support Time- Based port operation.</li> </ul>
8	Standards	<ul style="list-style-type: none"> <li>• Switch should support IEEE 802.3 10BASE-T Ethernet, IEEE 802.3u 100BASE-TX Fast Ethernet, IEEE 802.3ab 1000BASE-T Gigabit Ethernet, IEEE 802.3ad LACP, IEEE 802.3z Gigabit Ethernet, IEEE 802.3x Flow Control, IEEE 802.1D (STP, GARP, and GVRP), IEEE 802.1Q/p VLAN, IEEE 802.1w RSTP, IEEE 802.1s Multiple STP, IEEE 802.1X Port Access Authentication, IEEE 802.3af, IEEE 802.3at,</li> <li>• Should have UL (UL 60950), CSA (CSA 22.2), CE mark, FCC Part 15 (CFR 47) Class A Certifications</li> </ul>
9	Warranty	3 year

### 3. Patch Cord Cat6 UTP Cable – 1 Metre – 100 nos

SI No.	Items	Specifications
1	General Features	<ul style="list-style-type: none"> <li>• Should use high quality unshielded four pair Category 6 stranded cable.</li> <li>• Should be available in a range of colors.</li> <li>• Pre-terminated with RJ45 plugs and feature cable strain relief boots with a plug latch protection cap.</li> <li>• Independently tested and verified by ETL SEMKO.</li> <li>• Cable Length: 1 Metre</li> </ul>
2	Mechanical Characteristics- Cable	<ul style="list-style-type: none"> <li>• Conductor Size: 24 AWG stranded bare copper</li> <li>• Jacket: LSZH</li> <li>• Max O.D: 5.6mm</li> </ul>
3	Mechanical Characteristics- Plug	<ul style="list-style-type: none"> <li>• Operating Life: Minimum 700 insertion cycles</li> <li>• Contact Material: Copper alloy</li> <li>• Contact plating: 1.25 micrometres Au/Ni</li> </ul>
4	Electrical Characteristics	<ul style="list-style-type: none"> <li>• Max voltage: 150VAC(max)</li> <li>• Max current: 1.5A</li> </ul>

### 4. Patch Cord Cat6 UTP Cable – 2 Metre – 100 nos

SI No.	Items	Specifications
1	General Features	<ul style="list-style-type: none"> <li>• Should use high quality unshielded four pair Category 6 stranded cable.</li> <li>• Should be available in a range of colors.</li> <li>• Pre-terminated with RJ45 plugs and feature cable strain relief boots with a plug latch protection cap.</li> <li>• Independently tested and verified by ETL SEMKO.</li> <li>• Cable Length: 2 Metre</li> </ul>
2	Mechanical Characteristics- Cable	<ul style="list-style-type: none"> <li>• Conductor Size: 24 AWG stranded bare copper</li> <li>• Jacket: LSZH</li> <li>• Max O.D: 5.6mm</li> </ul>



3	Mechanical Characteristics- Plug	<ul style="list-style-type: none"> <li>Operating Life: Minimum 700 insertion cycles</li> <li>Contact Material: Copper alloy</li> <li>Contact plating: 1.25 micrometres Au/Ni</li> </ul>
4	Electrical Characteristics	<ul style="list-style-type: none"> <li>Max voltage: 150VAC(max)</li> <li>Max current: 1.5A</li> </ul>

### 5. Horizontal Cable Organizer – 3 nos

Sl No.	Items	Specifications
1	General Features	<ul style="list-style-type: none"> <li>Horizontal Cable Organizer – 1U/Channel on Front.</li> <li>Should contain steel sheet punched back panel and loop type will have ABS loops fixed on steel sheet punched back panel with highest quality standards under stringent ISO 9001-2008 Manufacturing &amp; Quality management system to ensure highest quality product.</li> </ul>

### 6. Rack Mounting Hardware Screw Set (Nut-10, Screw -10, Washer-10) – 1 packet

Sl No.	Items	Specifications
1	General Features	<ul style="list-style-type: none"> <li>M6 x 20mm Screws – 10 Piece</li> <li>Square Cage Nuts - 10 Piece</li> <li>Plastic Washers - 10 Piece</li> </ul>

## General Terms & Conditions

### 1. Eligibility Criteria:

- Should be a Firm/Company Incorporated in India.
- Bidder should have a fully functional service centre with spares stock for attending the breakdown calls. Details of the service centre must be provided.

### 2. Scope of Supply:

- The tenders shall be submitted as per the technical specifications as per **Annexure – I** (Part A and Part B)
- Submission of the tender implies that these conditions of tender have been read by the tenderer and is aware of the scope of the supply and the quality of the material to be supplied. The final acceptance of the tender rests with the Chief Executive Officer, Kerala Startup Mission who reserves the right to accept or reject any or all tenders without assigning any reason thereof.

### 3. Submission of bids

The tender should be submitted in two parts as under

- I. Technical Bid
- II. Financial Bid

The documents shall include the following:

1. Company registration details
2. Company profile
3. Work completion report
4. Copy of GST registration
5. Tender form
6. Annexure 1

#### Financial Bid

1. As per the Format given in Annexure 2
- **Tender fee:** The tender fee is **Rs.300/-** (Rs. Three Hundred Only) (Non -refundable)
  - **Earnest money deposit:** The tenderer must pay earnest money along with the tender as given in the notice inviting tenders failing which the tender will be summarily rejected. Earnest Money deposit of Rs. **1,100.00/-** (Rupees One Thousand one Hundred Only) is to be remitted as DD. No interest shall be paid by KSUM on the Earnest Money Deposited by the tenderer. The Earnest Money deposited by successful tenderer will be retained towards the security deposit for the fulfillment of the contract. EMD of unsuccessful bidders will be returned without any interest, directly to their account.
  - All details as mentioned in Technical Bid

#### 4. Validity of Tender

- a) The tender shall be valid for a period of one week from the date of opening of the tender.
- b) Tenderer for any reason whatever, withdraws the tender after it is accepted or become unable or fails to execute the orders within stipulated delivery period, KSUM shall be at liberty to cancel the order forthwith and the EMD of the tender in such a case will be forfeited by the KSUM.
- c) No representation for the enhancement of the prices of the accepted tender or alteration of the terms and conditions will be entertained till supplies are completed.

#### 5. Guarantee of Quality and Warranty of goods supplied:

- a. **Guarantee/Warranty and Support and defects liability period-**The supplier shall guarantee that all equipments are free from any defects due to the defective materials and poor workmanship, that the equipments are not less than the guaranteed values. The Guarantee

shall be valid for the period mentioned against each item above after successful testing and taking over. Any part found defective shall be replaced free of cost by the supplier.

## 6. Packing

- a. The supplier shall provide packing of the goods, as required to prevent their damages or deterioration during the transit to their final destination as indicated in the contract. The packing shall be sufficient to withstand, without limitation, rough handling during transit.
- b. The equipment shall be securely boxed, crated and protected from mechanical damage, moisture etc. suitable for both storage and transit according to the nature of the material and mode of transport.

## 7. Price

- a) The price shall be firm and shall include all applicable taxes and charges. Any variation in the duties, levies etc. during the period of supplies shall be charged to the tenderer account. The rates quoted shall be all inclusive, with the delivery, up to destination i.e. KSUM, Trivandrum.
- b) The Tenderer shall submit the copy of PAN Number, GST Number registration details along with the tender.

## 8. Delivery

- a. The successful tenderer shall complete supplies strictly within the accepted delivery period. Material ordered by the KSUM shall be delivered to destination securely packed as may be necessary.
- b. The Equipments shall have to be delivered and installed at KSUM, Trivandrum to the satisfaction of concerned Authority within 7 days.

## 9. Payment

The payment will be made by KSUM by Transfer to the bank account as mentioned in the bank mandate. The tenderer shall submit the documents, which shall clearly indicate that the Proper Installation & successful Testing of Equipment are done.

## 10. Service Facility

In order to ensure proper and timely after sales service, contact details with addresses of service centre nearest to KSUM, Trivandrum shall be provided along with the bid.

## 11. Taxes

Suppliers shall be entirely responsible for all taxes, duties, license fees, octroi, road permits, etc., incurred until delivery of the contracted Goods to the Purchaser.

## 12. Termination for Default

The purchaser may, without prejudice to any other remedy for breach of contract, by written notice of default sent to the supplier, terminate the Contract in whole or part:

- a. If the supplier fails to deliver any or all of the Goods within the period(s) specified in the order, or within any extension thereof granted by the Purchaser; or
- b. If the Supplier fails to perform any other obligation(s) under the Contract.
- c. If the Supplier, in the judgment of the Purchaser has engaged in corrupt or fraudulent practices in competing for or in executing the Contract.

☑ For the purpose of this Clause:

- a. “Corrupt practice” means the offering, giving, receiving or soliciting of anything of value to influence the action of a public official in the procurement process or in contract execution.
- b. “Fraudulent practice” means a misrepresentation of facts in order to influence a procurement process or the execution of a contract to the detriment of Borrower, and includes collusive practice among Tenderers(prior to or after bid submission) designed to establish bid prices at artificial non-competitive levels and to deprive the Borrower of the benefits of free and open competition”.

In the event the Purchaser terminates the Contract in whole or in part, the Purchaser may procure, upon such terms and in such manner, as it deems appropriate, Goods or Services similar to those undelivered, and the Supplier shall be liable to the Purchaser for any excess costs for such Goods or Services. However, the Supplier shall continue the performance of the contract to the extent not terminated.

### **13. Claims:**

- a. If the material supplied are found to be off size and shape different than those in the accepted offer and are of specifications lower than those stipulated in the accepted offer, KSUM shall have the right to totally reject the goods and/or to prefer a claim for compensation for the part of goods, which are rejected.
- b. The supplier shall reimburse to KSUM, the actual expenditure incurred, on such goods, within 15 (fifteen) days of its demand.
- c. The supplier shall be responsible for arranging the rejected goods to be removed at his/her cost from KSUM, Trivandrum premises.
- d. The supplier shall also compensate for losses, if any, sustained by KSUM due to defective packing and/or wrong marking of the goods.

### **14. Performance Guarantee:**

The successful tenderer shall deposit an amount equal to 5% of the value of contract inclusive of E.M.D. within 7 days from the date of receipt of Purchase Order as DD payable at Trivandrum, from any Scheduled Bank or Nationalized Bank in favour of Chief Executive Officer, Kerala Start-Up Mission (KSUM) OR the selected tenderer shall deposit an amount equal to 5% of the value of contract towards security deposit as DD from a nationalized or scheduled bank and valid till the end of defects liability period of 12 months in favor of Chief Executive Officer, Kerala Start-Up Mission, G3B, Thejaswini, Technopark Campus, Trivandrum . Bank Guarantee shall be forwarded directly by bank to KSUM. EMD will be forfeited if security deposit is not remitted as mentioned above.



**We confirm with our acceptance to the Commercial & General Terms & Conditions Sl. No. 1 to 14 as given above.**

**Date:**

**Name, Signature and seal of tenderer**



## TENDER FORM

### **The Chief Executive Officer**

Kerala Start-Up Mission (Formerly Technopark TBI),  
G3B, Thejaswini,  
Technopark Campus,  
Trivandrum 695581

Dear Sir,

Sub: Bid form

Ref: Tender No.: KSUM/T/NWI/FI7/2018-19/01

1. Having examined the conditions of tender contract, the receipt of which is hereby duly acknowledged. i/we undersigned, offer to supply all hardware & software and execute all works in conformity with tender specifications referred above and also to the said terms & conditions from the sum shown in the commercial bid(s) attached herewith and made part of this bid.
2. I/We undertake, if our Bid is accepted to complete delivery & commissioning of all Items specified in the contract within 1 week calculated from the date of issue of your purchase order/LOI.
3. We understand that you are not bound to accept the lowest or any bid, you may receive.
4. I / We affirm that I / We have enclosed the acceptance of all terms and conditions and also all brochures detailing the technical specification of the items quoted by me/us.
5. I / We hereby confirm that all the items supplied are in proper working condition and tested successfully.
6. The tender document for the works mentioned above have been obtained by me from the URL: <https://startupmission.kerala.gov.in/tender>, and I / we hereby certify that I / we have read the entire terms and conditions of the tender document, which shall form part of the contract agreement and I / we shall abide by the conditions / clauses contained therein.
7. My /our GST & PAN Numbers are as follows.
8. GST Registration Number. ....
9. PAN Number. ....
10. Dated this .....day of..... 201.....
11. Signature of
12. In capacity of
13. Duly authorized to sign the bid for and on behalf of -----
14. Witness 1. -----
15. Signature
16. Witness 2. -----
17. Signature

**Annexure I**  
**Technical Specification for the supply and installation of Switch, horizontal cable organizer, patch cord cable, screw set**

**Switch 28 Port Manageable - 1 nos**

Sl No.	Items	Specs	Compliance (Yes/No)	If No, Specify exact specification
1	General Features	<ul style="list-style-type: none"> <li>The Switch should have Minimum 24 x 10/100/1000 + 4 x Gigabit SFP (2 combo).</li> <li>The Switch should support non-blocking architecture with minimum switching capacity of 56 Gbps</li> <li>The Offered switch should support minimum 38 mpps of forwarding rate (64-byte packets)</li> <li>RAM-512 MB</li> <li>Flash Memory- 256 MB</li> </ul>		
2	layer 3 Switching features	<ul style="list-style-type: none"> <li>Should support Wirespeed routing of IPv4 packets, support Up to 1K static routes and up to 128 IP interfaces</li> <li>Should Support for CIDR</li> <li>Should support Configuration of Layer 3 interface on physical port, LAG, VLAN interface, or loopback interface</li> <li>Switch should functions as an IPv4 DHCP server serving IP addresses for multiple DHCP pools/scopes &amp; Support for DHCP options</li> <li>Should Support UDP</li> </ul>		
3	layer 2 Switching features	<ul style="list-style-type: none"> <li>Switch should support Standard 802.1d Spanning Tree support, Fast convergence using 802.1w (Rapid Spanning Tree [RSTP]), enabled by default 8 instances are supported, Multiple Spanning Tree instances using 802.1s (MSTP)</li> <li>Switch should support for IEEE 802.3ad Link Aggregation Control Protocol (LACP), Up to 8 groups, Up to 8 ports per group with 16 candidate ports for each (dynamic) 802.3ad link aggregation</li> <li>Switches should support for up to 4096 VLANs simultaneously, Port-based and 802.1Q tag-based VLANs, MAC-based VLAN, Management VLAN</li> <li>Private VLAN Edge (PVE), also known as protected ports, with multiple uplinks, Guest VLAN, Unauthenticated VLAN, Dynamic VLAN assignment via Radius server along with 802.1x client authentication and CPE VLAN</li> <li>Switch should support Guest VLAN, Voice</li> </ul>		

		<p>VLAN,GVRP/GARP. Support Dynamic Host Configuration Protocol (DHCP) Relay at Layer 2 with option 82, Internet Group Management Protocol (IGMP) versions1, 2 and 3 snooping and atleast 900 multicast groups.</p> <ul style="list-style-type: none"> <li>The Offered switch should be able to support source based multicasting. The offered switch should support Head-of-line (HOL) blocking prevention.</li> </ul>		
4	Security features	<ul style="list-style-type: none"> <li>Should Support SSH protocols &amp; SSL Support.</li> <li>The Switch must have IEEE 802.1X: RADIUS authentication and accounting, Single/multiple host mode, Single/multiple sessions Support for time-based 802.1X, and Dynamic VLAN assignment</li> <li>Switch Should Support Web based authentication,</li> <li>The Switch should support DHCP Snooping, STP Root Guard, STP BPDU.</li> <li>The switch should have DOS prevention &amp; Storm Control</li> <li>Switch should support Secure Core technology.</li> <li>Switch should support IP/MAC/Port Binding (IPMB) &amp; Dynamic ARP Inspection.</li> <li>Should support RADIUS and TACACS authentication</li> <li>The Switch should support ACL's up to 512 rules</li> </ul>		
5	Quality of Services features	<ul style="list-style-type: none"> <li>The offered switch should support Priority levels with 8 hardware queues.</li> <li>The Switch should support scheduling using Strict priority and weighted round-robin (WRR) and Queue assignment based on DSCP and class of service (802.1p/CoS)</li> <li>The Switch should be capable of supporting Class of service based on following:-Port based; 802.1p VLAN priority based; IPv4/v6 IP precedence/type of service (ToS)/DSCP based; differentiated services (DiffServ); classification and remarking ACLs, trusted QoS.</li> <li>Should Support Ingress policer; egress shaping and rate control; per VLAN, per port, and flow based.</li> <li>Should support TCP congestion avoidance.</li> <li>The Switch should support rate limiting using Ingress policer; egress shaping and rate control; per VLAN, per port, and flow based.</li> </ul>		
6	IP V6	The Offered switch should support following		



	Features	<ul style="list-style-type: none"> <li>• IPv6 host mode</li> <li>• IPv6 over Ethernet</li> <li>• Dual IPv6/IPv4 stack</li> <li>• IPv6 neighbor and router discovery (ND)</li> <li>• IPv6 stateless address auto-configuration</li> <li>• Path maximum transmission unit (MTU) discovery</li> <li>• Duplicate address detection (DAD)</li> <li>• ICMP version 6</li> <li>• IPv6 over Ipv4 network with Intra-Site Automatic Tunnel Addressing Protocol (ISATAP).</li> <li>• The switch should have support for IPv6 application such as Web/SSL, Telnet server/SSH, ping, trace route, Simple Network Time Protocol (SNTP), Trivial File Transfer Protocol TFTP), SNMP, RADIUS, syslog, DNS client, protocol-based VLANs.</li> </ul>		
7	Management features	<ul style="list-style-type: none"> <li>• The offered switch should have Built-in switch configuration utility of easy browser-based device configuration (HTTP/HTTPS).</li> <li>• The built-in web based utility should be support configuration, system dashboard, system maintenance, and monitoring</li> <li>• The Switch should support SNMP version 1, 2c and 3 with support for traps, and SNMP version 3 user-based security model (USM)</li> <li>• The Switch should support remote monitoring with Embedded RMON software agent with support of 4 RMON groups (history, statistics, alarms, and events) for enhanced traffic management monitoring, and analysis.</li> <li>• Should Support Vlan Mirroring, Port Mirroring</li> <li>• Should Support Cloud Services and GUI Localization</li> <li>• The Switch should support Text-editable config files easier and faster mass deployments.</li> <li>• The Switch should support minimum 16K mac addresses and jumbo frames with Frame sizes up to 9 KB supported on Gigabit interfaces.</li> <li>• Should have Energy Detect option for Power efficiency &amp; saving.</li> <li>• The Switch should support Time- Based port operation</li> </ul>		
8	Standards	<ul style="list-style-type: none"> <li>• Switch should support IEEE 802.3 10BASE-T Ethernet, IEEE 802.3u 10BASE-TX Fast</li> </ul>		

		<p>Ethernet, IEEE 802.3ab 1000BASE-T Gigabit Ethernet, IEEE 802.3ad LACP, IEEE 802.3z Gigabit Ethernet, IEEE 802.3x Flow Control, IEEE 802.1D (STP, GARP, and GVRP), IEEE 802.1Q/p VLAN, IEEE 802.1w RSTP, IEEE 802.1s Multiple STP, IEEE 802.1X Port Access Authentication, IEEE 802.3af, IEEE 802.3at.</p> <ul style="list-style-type: none"> <li>• Should have UL (UL 60950), CSA (CSA 22.2), CE mark, FCC Part 15 (CFR 47) Class A Certifications</li> </ul>		
9	Warranty	3Year		

### Switch 52 Port Manageable - 1 nos

Sl No.	Items	Specs	Compliance (Yes/No)	If No, Specify exact specification
1	General Features	<ul style="list-style-type: none"> <li>• The Switch should have Minimum 48 x 10/100/1000 + 2 SFP slots, 2 Gigabit Ethernet combo.</li> <li>• The Switch should support non-blocking architecture with minimum switching capacity of 104 Gbps</li> <li>• The Offered switch should support minimum 77 mpps of forwarding rate (64-byte packets)</li> <li>• RAM-512 MB</li> <li>• Flash Memory- 256 MB</li> </ul>		
2	layer 3 Switching features	<ul style="list-style-type: none"> <li>• Should support Wirespeed routing of IPv4 packets, support Up to 1K static routes and up to 128 IP interfaces</li> <li>• Should Support for CIDR</li> <li>• Should support Configuration of Layer 3 interface on physical port, LAG, VLAN interface, or loopback interface.</li> <li>• Switch should functions as an IPv4 DHCP server serving IP addresses for multiple DHCP pools/scopes &amp; Support for DHCP options.</li> <li>• Should Support UDP</li> </ul>		
3	layer 2 Switching features	<ul style="list-style-type: none"> <li>• Switch should support Standard 802.1d Spanning Tree support, Fast convergence using 802.1w (Rapid Spanning Tree [RSTP]), enabled by default 8 instances are supported, Multiple Spanning Tree instances using 802.1s (MSTP)</li> <li>• Switch should support for IEEE 802.3ad Link Aggregation Control Protocol (LACP), Up to 8 groups, Up to 8 ports per group with 16 candidate ports for each (dynamic) 802.3ad link aggregation</li> </ul>		

		<ul style="list-style-type: none"> <li>Switches should support for up to 4096 VLANs simultaneously, Port-based and 802.1Q tag-based VLANs, MAC-based VLAN, Management VLAN</li> <li>Private VLAN Edge (PVE), also known as protected ports, with multiple uplinks, Guest VLAN, Unauthenticated VLAN, Dynamic VLAN assignment via Radius server along with 802.1x client authentication and CPE VLAN</li> <li>Switch should support Guest VLAN, Voice VLAN, GVRP/GARP. Support Dynamic Host Configuration Protocol (DHCP) Relay at Layer 2 with option 82, Internet Group Management Protocol (IGMP) versions 1, 2 and 3 snooping and atleast 900 multicast groups.</li> <li>The Offered switch should be able to support source based multicasting. The offered switch should support Head-of-line (HOL) blocking prevention.</li> </ul>		
4	Security features	<ul style="list-style-type: none"> <li>Should Support SSH protocols &amp; SSL Support.</li> <li>The Switch must have IEEE 802.1X: RADIUS authentication and accounting, Single/multiple host mode, Single/multiple sessions Support for time-based 802.1X, and Dynamic VLAN assignment</li> <li>Switch Should Support Web based authentication,</li> <li>The Switch should support DHCP Snooping, STP Root Guard, STP BPDU.</li> <li>The switch should have DOS prevention &amp; Storm Control</li> <li>Switch should support Secure Core technology.</li> <li>Switch should support IP/MAC/Port Binding (IPMB) &amp; Dynamic ARP Inspection.</li> <li>Should support RADIUS and TACACS authentication.</li> <li>The Switch should support ACL's up to minimum 512 rules.</li> </ul>		
5	Quality of Services features	<ul style="list-style-type: none"> <li>The offered switch should support Priority levels with 8 hardware queues.</li> <li>The Switch should support scheduling using Strict priority and weighted round-robin (WRR) and Queue assignment based on DSCP and class of service (802.1p/CoS)</li> <li>The Switch should be capable of supporting Class of service based on following: -Port based; 802.1p VLAN priority based; IPv4/v6 IP precedence/type of service (ToS)/DSCP based; differentiated services (DiffServ); classification and remarking ACLs, trusted QoS.</li> </ul>		

		<ul style="list-style-type: none"> <li>• Should Support Ingress policer; egress shaping and rate control; per VLAN, per port, and flow based.</li> <li>• Should support TCP congestion avoidance.</li> <li>• The Switch should support rate limiting using Ingress policer; egress shaping and rate control; per VLAN, per port, and flow based.</li> </ul>		
6	IP V6 Features	<p>The Offered switch should support following</p> <ul style="list-style-type: none"> <li>• IPv6 host mode</li> <li>• IPv6 over Ethernet</li> <li>• Dual IPv6/IPv4 stack</li> <li>• IPv6 neighbor and router discovery (ND)</li> <li>• IPv6 stateless address auto-configuration</li> <li>• Path maximum transmission unit (MTU) discovery</li> <li>• Duplicate address detection (DAD)</li> <li>• ICMP version 6</li> <li>• IPv6 over Ipv4 network with Intra-Site Automatic Tunnel Addressing Protocol (ISATAP).</li> <li>• The switch should have support for IPv6 application such as Web/SSL, Telnet server/SSH, ping, trace route, Simple Network Time Protocol (SNTP), Trivial File Transfer Protocol TFTP), SNMP, RADIUS, syslog, DNS client, protocol-based VLANs.</li> </ul>		
7	Management features	<ul style="list-style-type: none"> <li>• The offered switch should have Built-in switch configuration utility of easy browser-based device configuration (HTTP/HTTPS).</li> <li>• The built-in web based utility should be support configuration, system dashboard, system maintenance, and monitoring</li> <li>• The Switch should support SNMP version 1, 2c and 3 with support for traps, and SNMP version 3 user-based security model (USM)</li> <li>• The Switch should support remote monitoring with Embedded RMON software agent with support of 4 RMON groups (history, statistics, alarms, and events) for enhanced traffic management monitoring, and analysis.</li> <li>• Should Support Vlan Mirroring, Port Mirroring</li> <li>• Should Support Cloud Services and GUI Localization</li> <li>• The Switch should support Text-editable config files easier and faster mass deployments.</li> <li>• The Switch should support minimum 16K mac addresses and jumbo frames with Frame sizes up to 9 KB supported on Gigabit interfaces.</li> <li>• Should have Energy Detect option for Power</li> </ul>		

		efficiency & saving. The Switch should support Time- Based port operation		
8	Standards	<ul style="list-style-type: none"> <li>Switch should support IEEE 802.3 10BASE-T Ethernet, IEEE 802.3u 100BASE-TX Fast Ethernet, IEEE 802.3ab 1000BASE-T Gigabit Ethernet, IEEE 802.3ad LACP, IEEE 802.3z Gigabit Ethernet, IEEE 802.3x Flow Control, IEEE 802.1D (STP, GARP, and GVRP), IEEE 802.1Q/p VLAN, IEEE 802.1w RSTP, IEEE 802.1s Multiple STP, IEEE 802.1X Port Access Authentication, IEEE 802.3af, IEEE 802.3at.</li> <li>Should have UL (UL 60950), CSA (CSA 22.2), CE mark, FCC Part 15 (CFR 47) Class A Certifications</li> </ul>		
9	Warranty	3Year		

### Patch Cord Cat6 UTP Cable – 1 Metre – 100 nos

Sl No.	Items	Specs	Compliance (Yes/No)	If No, Specify exact specification
1	General Features	<ul style="list-style-type: none"> <li>Should use high quality unshielded four pair Category 6 stranded cable.</li> <li>Should be available in a range of colors.</li> <li>Pre-terminated with RJ45 plugs and feature cable strain relief boots with a plug latch protection cap.</li> <li>Independently tested and verified by ETL SEMKO.</li> <li>Cable Length: 1 Metre</li> </ul>		
2	Mechanical Characteristics- Cable	<ul style="list-style-type: none"> <li>Conductor Size: 24 AWG stranded bare copper</li> <li>Jacket: LSZH</li> <li>Max O.D: 5.6mm</li> </ul>		
3	Mechanical Characteristics- Plug	<ul style="list-style-type: none"> <li>Operating Life: Minimum 700 insertion cycles</li> <li>Contact Material: Copper alloy</li> <li>Contact plating: 1.25 micrometres Au/Ni</li> </ul>		
4	Electrical Characteristics	<ul style="list-style-type: none"> <li>Max voltage: 150VAC(max)</li> <li>Max current: 1.5A</li> </ul>		

### Patch Cord Cat6 UTP Cable – 2 Metre – 100 nos

SI No.	Items	Specs	Compliance (Yes/No)	If No, Specify exact specification
1	General Features	<ul style="list-style-type: none"> <li>Should use high quality unshielded four pair Category 6 stranded cable.</li> <li>Should be available in a range of colors.</li> <li>Pre-terminated with RJ45 plugs and feature cable strain relief boots with a plug latch protection cap.</li> <li>Independently tested and verified by ETL SEMKO.</li> <li>Cable Length: 2 Metre</li> </ul>		
2	Mechanical Characteristics- Cable	<ul style="list-style-type: none"> <li>Conductor Size: 24 AWG stranded bare copper</li> <li>Jacket: LSZH</li> <li>Max O.D: 5.6mm</li> </ul>		
3	Mechanical Characteristics- Plug	<ul style="list-style-type: none"> <li>Operating Life: Minimum 700 insertion cycles</li> <li>Contact Material: Copper alloy</li> <li>Contact plating: 1.25 micrometres Au/Ni</li> </ul>		
4	Electrical Characteristics	<ul style="list-style-type: none"> <li>Max voltage: 150VAC(max)</li> <li>Max current: 1.5A</li> </ul>		

### Horizontal Cable Organizer – 3 nos

SI No.	Items	Specs	Compliance (Yes/No)	If No, Specify exact specification
1	General Features	<ul style="list-style-type: none"> <li>Horizontal Cable Organizer – 1U/Channel on Front.</li> <li>Should contain steel sheet punched back panel and loop type will have ABS loops fixed on steel sheet punched back panel with highest quality standards under stringent ISO 9001-2008 Manufacturing &amp; Quality management system to ensure highest quality product.</li> </ul>		

### Rack Mounting Hardware Screw Set (Nut-10, Screw -10, Washer-10) – 1 packet

SI No.	Items	Specs	Compliance (Yes/No)	If No, Specify exact specification
1	General Features	<ul style="list-style-type: none"> <li>M6 x 20mm Screws – 10 Piece</li> <li>Square Cage Nuts - 10 Piece</li> <li>Plastic Washers - 10 Piece</li> </ul>		

## Annexure 2

### Financial Bid submission format

Sl No	Item	Quantity	Amount
1	Switch 28 Port Manageable	1	
2	Switch 52 Port Manageable	1	
3	Patch Cord Cat6 Cable - 1 Meter	100	
4	Patch Cord Cat6 Cable - 2 Meter	100	
5	Cable Manager	3	
6	Rack Mounting Hardware Screw Set (Nut-10, Screw -10, Washer-10)	1 packet	

The rate quoted to be inclusive of all taxes and duties