



**NATIONAL INSTITUTE OF TECHNICAL TEACHERS TRAINING AND RESEARCH**  
[Government of India, Ministry of Human Resource Development,  
(Dept. of Higher Education)] Taramani, Chennai – 600 113  
☎ 044 - 2254 5436 / 2254 5406 Fax: 2254 1126 email: [dir@nitttrc.ac.in](mailto:dir@nitttrc.ac.in)

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## **TENDER DOCUMENT FOR**

**Modification of the Campus Network located at NITTTR premises Taramani, Chennai -600 113 .** The tender document can be downloaded from our website [www.nitttrc.ac.in](http://www.nitttrc.ac.in). The duly filled tender document should be submitted along with a **Tender document fee of Rs. 525/-** (Rupees five hundred and twenty five only) in the form of Demand Draft drawn in favour of **“The Director, NITTTR, Chennai”**.

Tender Document fee : Rs. 525/-

Details

BC/DD.No:

Date:

Amount:

Bank:

The tenderer should also produce the following declaration along with the filled tender document and tender documentation fee.

### **DECLARATION BY THE TENDERER**

We hereby declare that we have downloaded the Tender Document from the website [www.nitttrc.ac.in](http://www.nitttrc.ac.in) and printed the same without any alteration of the original format of the downloaded document

Signature of the Tenderer

Name & Address of the Tenderer

with Office Seal



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No. NITTTR/Campus Network/16-17

07.03.2017

**TENDER NOTICE**

S.No.	Name of work	Estimated Value (Rs.) Approx.	EMD (Rs.)	Tender Document Fee (Rs.)
1.	<b>Modification of the Campus Network located at NITTTR premises Taramani, Chennai -600 113.</b>	Rs.70,00,000/-	<b>Rs.1,50,000/- (Kindly see the Instruction to the Bidders Sl.no 19)</b>	525/-

Sealed tenders along with Earnest Money Deposit(EMD) of Rs.1,50,000/- (which will be refunded in respect of unsuccessful tenderers) by way of Demand draft from a nationalized / scheduled bank **drawn** in favour of **the Director, NITTTR, Chennai**, along with the **Bid documents super-scribing on the envelope Name of work and Tender Opening date**, should reach the “The Director, NITTTR, Taramani P.O., Chennai – 600 113” latest by **3.00 p.m.** on 21.03.2017. The Technical bid will be opened at **03.30 p.m.** on the same day in the presence of tenderers or their authorized representative, if any present.

NITTTR Chennai is following two bid system Technical Bid and Financial bid for the Modification of campus network and Commissioning. The vendor is requested to submit the Technical and Financial bid documents separately. The DD for the EMD should be attached in the Technical bid Documents.

Tenders received after **3.00 p.m.** on 21.03.2017, whether sent by post or delivered in person will be summarily rejected. Tenders submitted without EMD and Tender Document fee along with the Bid and incomplete tenders will be summarily rejected.

The Director, NITTTR, Chennai reserves the right to accept or reject any or all the tenders without assigning any reason thereof and his decision shall be final and binding.

If any firm / vendor like to visit the campus for the survey then they can visit the campus with an authorised letter on 10.03.2017, 15.03.2013 and 17.03.2017 during office hours preferably between 3.00 PM to 5.30 PM. Contact Dr. V.Shanmuganeethi, Asst. Prof, Dept. of CSE, NITTTR Chennai.

**DIRECTOR**

# Modification of the Campus Network

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# 1. Requirements

## 1. Passive Components

S.No	Description	Qty	UOM
1	Cat 6 Cable	Appx. 70 Box	
2	Cat6 I/O	383 nos	
3	Cat 6 24 Port loaded Patch Panel	22	Nos
4	Single Face Plate	383 nos	
5	Back Box	383 nos	
6	1 Mtr Patch Card	383 nos	
7	2 Mtr Patch Card	383 nos	
8	6 Core SM Fiber Cable	2000 mtrs	
9	12 Port LIU Loaded	10	Nos
10	Fiber Patch cable SC – LC	20	Nos
11	15U Rack with necessary Accessories – 1 no. min 5X5Amps Power manager, 2nos. of Horizontal Cable Manager and 1no. Horizontal tray from Reputed make	1	Nos
12	9U Rack with 1 no. min 5 X 5Amps Power manager, 2nos. of Horizontal Cable Manager from Reputed make	19	Nos
13	1inch PVC Pipe	3600 (Approx)	Mtrs
14	1.5inch PVC Channel	2100 (Approx)	Mtrs
15	1inch PVC Hose	700 (Approx)	Mtrs

## 2. Active Components

1	Core Switch - 24 Port Layer 3 Enterprise Managed Switch 24 Port Switch with Stacking Modules and Stacking Cable as per Technical Specification in Annexure 1.	2	Nos
2	Distribution Switch - 24 Port Layer 3 Enterprise Managed Switch 24 Port Switch with Stacking Modules and Stacking as per Technical Specification in Annexure 1.	15	Nos
3	Edge Switch -24 Port Layer 2 Switch as per the specification in Annexure 1.	20	Nos
4	Edge Switch – POE 24 Port as per the specification in Annexure 1.	4	Nos
5	Single Mode Gigabit SFP LX Module	36	Nos

### **3. Installation and Commissioning**

1	Installation and Commissioning Charges of Passive and Active Components	LS	LS
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**Note : The quantity of passive components may be vary (Increase or decrease => + / - 20%) depend upon the requirement of every department in NITTTR Chennai.**

## 2. Instruction to Bidders

1. Every page of the Request For Proposal (RFP) document shall be signed by the bidder or by a person duly authorized by the bidder.
2. Bidder shall submit a letter of authorization, to the person signing the RFP document on behalf of the bidder.
3. All changes, alterations, corrections in the RFP document shall be signed in full by the person(s) signing the RFP document, with date. No eraser and/or over writing without authentications is/are permissible.
4. The complete RFP document along with the documentary evidence should be numbered.
5. The Bidder shall submit its RFP in two (2) parts, namely; Part-I will contain **Technical Bid** (as enclosed as Annexure-A) and Part-II will contain **Financial Bid** (as enclosed as Annexure-B) in separate envelopes. Technical Bid and Financial Bid shall be submitted on the Bidder's letter head.
6. Duly filled in RFP shall be forwarded along with a covering letter in the prescribed format and shall also have the relevant documents including documentary evidences.
7. Bidder must submit the original 'Technical' and 'Financial Bid'. Each bid should be sealed separately and placed in a sealed envelope super scribing thereon "**Tender Name**"
8. The Bids completed in all respects as specified in this RFP shall be sent / submitted by post/courier/in-person to "**Address**".
9. The Bids shall be valid for a period of 90 days after the last date of the Bid.
10. Due Date & Time of submission of Bid: **21.03.2017 at 3.00 PM**
11. The complete bid document should be submitted before due date and time as given at Clause 10 above. Bid received after the due date would not be considered and are liable for rejection.
12. NITTTTR reserves the right to accept or reject any/all the bid(s) including the lowest bid without assigning any reason and no correspondence in this regard shall be

entertained. The Institute takes no responsibility for delay, loss, or non-receipt of response to this RFP.

13. The bidder shall carefully examine and understand the scope of work, specifications / conditions of RFP and seek written clarifications, if required, to ensure that they have understood all scope of work, specifications/conditions of RFP.
14. The bidders should have presence in India with one of their offices in Tamil Nadu particularly in Chennai, until completion of the contract. The Bidder shall authorize a representative for interacting with the Institute during evaluation of the Bid.
15. Submission of manipulated or illegible documents shall lead to disqualification of the bidder.
16. Date & Time of opening of Bids: Date & Time of opening of Technical Bid will be updated in the Institute website and communicated to the bidders.
17. If the bidder has NSIC certification they will get the NSIC benefits. The benefits of NSIC should be clearly mentioned in the Bid document.
18. If the bidder, after submission, revokes his bid or modifies the terms and conditions thereof during the validity of the bid except where the Institute has given opportunity to do so, the earnest money deposit submitted by Bidder shall be forfeited. The Earnest Money Deposit of unsuccessful bidders shall be returned within reasonable time, after award of contract.
19. The Earnest Money Deposit (EMD) for the Tender is Rs.1,50,000/- (Rupees One Lac and fifty thousand only). The EMD should be payable in favour of **“The Director, NITTTR Chennai”** in the form of Demand Draft(DD). The EMD should be in **INR**.
20. The EMD should be separately placed in the cover along with Technical bid and financial bid covers.
21. Tender submitted without EMD will not be considered for the scrutiny. The EMD by successful bidder shall be retained with additional 3% of quoted amount (Totally Rs. 1, 50,000 + 3% of Quoted Amount) as the Security deposit (SD) for the fulfilment of performance of the terms and conditions of the contract. This security deposit will be refundable after successful completion of the contract subject to the adjustment of

- dues against the Firm. EMD received from unsuccessful bidders would be returned without interest, after finalization of contract.
22. If the commissioning of the work is not completed within the stipulated time as mentioned (the time will be mentioned in the Tender agreement), the NITTTR Chennai has right to cancel the tender or levy fine for the delay.
  23. Proof of Concept / Proof of capability should be demonstrated whenever requested by the NITTTR Chennai.
  24. Datasheet should be provided by the bidder for each component quoted in the tender along with the technical documents.



### **3. Pre qualification Criteria**

- Bidder should be a Company registered under Companies Act, 1956 in India.
- The bidder should have been in operation for a period of at least 7 years as on 1<sup>st</sup> February 2017, relevant certificates/document issued by the Govt./Statutory body to be attached.
- Bidder should have a registered office in Tamil Nadu or the bidder should open an office within 15 days from the date of Letter for Intent (LOI) / Purchase Order (PO) of this tender.
- Bidder should provide Sales Tax, VAT and Service Tax registration certificates.
- Bidder should be a profit-making entity having Total turnover of at least INR 5 Crores during the last 3 financial years (including this year). – Financial Year of 2016-2017, 2015-2016, 2014-2015
- The bidder should have experience in implementing IT,ITES and ICT projects. Relevant copies of Purchase Order should be submitted along with the bid response.
- The bidder should have experience of having successfully completed similar works during the last 5 years ending should be either of the following:
  - i. 3 similar completed works costing not less than Rs. 60 lakhs and one of the Work should be in the last/ Current financial year (2015-16 / 2016-17)
  - ii. 2 similar completed works costing not less than Rs. 75 lakhs and one of the Work should be in the last / Current financial year (2015-16 /2016-17)
  - iii. 1 similar completed work costing not less than Rs. 1 Crore and it should be in the last / Current financial year (2015-16 /2016 -17)
- The Bidder should be an ISO Certified company.
- No second Brand or Class B product of any O.E.M's should be quoted
- OEM and their Brand quoted should have minimum 10 Years of Installation presence in India (Proof of Documents to be enclosed).
- The products quoted should not be declared End of Life at the time of delivery and OEM should support the products quoted for at least 3 years and a letter to this effect may be attached as a proof.
- Orders in the name of consortiums or subcontracts shall not be accepted.

- The bidder must quote for all the items /services mentioned in the tender. Part / incomplete quotes shall be summarily rejected
- The bidder must indicate familiarity and agreement with the scope of work as elucidated in the RFP.
- The firm must declare that there is no lawsuit pending against the company/directors with reference to any work-related order.
- A self declaration letter from the bidder stating that the commissioning of the work will be finished within the three months from the date of award of the Tender.
- The bidder should produce a certificate with the bid that the firm and OEM has not been debarred / black listed for any reason for any period by any Central / State Govt. Department / University / PSU etc. during last 7 years. Concealment of acts pertaining to the above shall not only lead to cancellation of the bid/order.
- The entire Active and the Passive Components proposed should be from a single Manufacturer for seamless integration.
- The bidder should have Good Strength of Service Engineers in the relevant field of Quoted items.
- OEM's participating with Multiple Bidders should submit 100% compliant Bill Of Materials (BOM) with all the bidders and the BOM proposed should be identical with all the Authorized bidders.
- Only the OEM or their dealers authorized for products relevant to this bid are permitted to participate the bid. The bidders shall append the Certificate of Authorization / MAF in original issued by the OEM for participation in this bid failing which the bid will be rejected.
- Tender compliance should be certified by OEM's of respective components along with all the supporting documents.
- The bidders must append the following documents with the bid:
  - Copies of PAN/ TAN.
  - Copies of Sales Tax registration
  - Copy of Service Tax registration

## 4. Active components specifications

### 1. Core Switch

SI No	Technical specification	Compliance (Yes / No)	Remarks
1	24 1G Combo ports and 4x 10G SFP+ ports, equipped with internal redundant power supplies		
2	4x 10G SFP+ ports should also support 1G SFP based on network requirement		
3	Should support active-active clustering technology for higher availability of Layer 2 and Layer 3 (RIP, OSPF, BGP, PIM) including video applications for hitless failover with active-active clustering bandwidth of 80Gbps per switch with no single point of failure. Vendors should offer required cables/modules from day-1		
4	Should support Static routing, RIP, RIPng, OSPF, OSPFv3, BGP4, BPG4+, PIM v4 SM, DM and SSM, IEEE 802.3az and OpenFlow 1.3 or above		
5	IEEE 802.17/equivalent for sub 50ms ring protection in following scenario: single, dual fibre cuts in ring and when fibre cut at common shared link in between two or more rings		
6	Security: ACL, DHCP(server, relay, client), DAI, Private VLAN, Authentication (MAC, Web and IEEE 802.3x), LLDP-MED, SSLv2 and SSLv3, TACACS+, IP source guard, IEEE 802.1x RADIUS / RADIUS Server.		
7	Management: CLI, GUI, USB interface for taking backup of software release files configurations, Digital optical monitoring, cable fault detector, s flow, DHCPv6, DNSv6, IPv4 and IPv6 dual stack, SNMPv6, Telnetv6 and SSHv6, IEEE802.3az, RMON 4 groups, SNMPv3		
8	Should be scalable to support inbuilt wireless controller for management of Wi-Fi access points		
9	Switch should support centralised management platform for zero touch replacement of any failed access switches across the network back bone without manual/human intervention		
10	Switch should support centralised management platform for single point of management, configuration roll out and troubleshooting with Instant access or equivalent technology		

11	The switch should also provide the functionality of Software firmware roll out across network switches for easy of management and maintain consistent software image across the network switches in line with Instant Access or equivalent technology		
12	For ease of integration, all switches should be of same OEM		

## 2. *Distribution Switch*

SI No	Technical specification	Compliance (Yes / No)	Remarks
1	24 10/100/1000- Base-T ports 4x 10G SFP+ ports which should be flexible to support 1G SFP as well based on network requirement. Should be equipped with internal redundant power supplies for higher reliability		
2	<b>Performance Specifications:</b> Switching Backplane: Non-Blocking Forwarding Rate: Wire Speed Non-Blocking Energy efficient Ethernet IEEE 802.3az		
3	<b>Network Resiliency</b> Should have the technology capability of Active-Active Clustering virtual chassis VSS / equivalent high availability technology for higher availability and resiliency. The proposed VSS or equivalent technology should support high availability for both Layer 2 and Layer 3 Including for IP Multicasting, for real time video surveillance and voice applications to ensure hitless failover IEEE 802.17/equivalent for sub 50ms ring protection in following scenario: single, dual fibre cuts in ring and when fibre cut at common shared link in between two or more rings		
4	<b>Layer 2/3 Features</b> Static Routing, Should be scalable to support RIP v2, RIPng, OSPF v2, OSPF v3, PIM-SM, PIM-DM without changing base hardware GVRP, IEEE 802.1ad, IEEE 802.1Q, IEEE 802.1v, IEEE 802.3ac, Voice VLAN, LLDP-MED, IEEE 802.1D MAC bridges, IEEE 802.1s (MSTP), IEEE 802.1w (RSTP), VRRP v3 IGMPv2, IGMPv3, MLDv2, IGMP and MLD snooping IPv4 and IPv6 dual stack Device management over IPv6 networks with SNMPv6, Telnetv6 and SSHv6+B35 ICMPv6, NTPv6, DNSv6, DHCPv6 relay, 6to4 tunnelling Should support OPenFlow 1.3 or above		

5	<p><b>Security</b>  SSH remote login, SSLv2 and SSLv3, TACACS+  IEEE 802.1X authentication protocols (TLS, TTLS, PEAP and MD5)  IEEE 802.1x, MAC-based and Web-based—can be enabled simultaneously on the same port.  IEEE 802.1X port-based network access control, RADIUS, RADIUS accounting, Secure Shell (SSHv2), ACL, DHCP (snooping, client, Server and relay)</p>		
6	<p><b>Management</b>  Event-based triggers allow user-defined scripts to be executed upon selected system events based on Time, Date, day and Event based Switch  should provide the ability to monitor events and take corrective action proactively  Control plane denial-of-service (DoS) protection  Switch should be able to support management via CLI, Web interface  SNMP v1,v2,v3 support, RMON (groups 1,2,3 and 9), SNMP traps, sflow, Optical digital diagnostic monitoring as per SFF – 8472 or equivalent Open standards on 1G SFP and 10G SFP+ ports  Switch should be manageable through both IPv4 &amp; IPv6  An External memory card / USB or equivalent, allowing switch firmware, configurations to be stored for backup and distribution to other switches  Full environmental monitoring of PSU internal temperature and internal voltages for Pro active monitoring  Should seamlessly integrate with Centralised Management platform/core Switch</p>		
7	UL-UL60950-1, EN 55024, CE, ROHS		
8	For ease of integration all active components (switches, SFP's) should be of same OEM		

### 3. Access Switch

S.No	Technical specification	Compliance (Yes / No)	Remarks
1	<b>Advanced Multi Layer switch.</b>		
	24 x 10/100/1000T with Min 4 x SFP+ Ports		
	IEEE 802.1AX Link aggregation (static and LACP)		
	IEEE 802.3ad Static and dynamic link aggregation		
	IEEE 802.3x Flow control - full duplex operation		
	The VSS or equivalent technology shall support Link Aggregation between different members in an Active – Active cluster for high reliability		
2	<b>Performance Specifications</b>		
	Min 128Gbps of switching capacity		
	Min 95 Mpps Switching throughput		
	Min 16K Address Table		
3	<b>Resiliency</b>		
	Sub 50Ms Resiliency for 10G ring based design as per the IEEE 802.17/RPR / ERPS or equivalent technology		
	Loop Detection and Loop protection		
	Control Plane Prioritization (CPP)		
	Dynamic link failover		
	Should be scalable to VRRP v2 and VRRP v3		
	RSTP , MSTP		
4	<b>VLAN</b>		
	VTP / GVRP		
	VLAN creation based on protocol ,Port and Subnet based		
	IEEE 802.1Q Virtual LAN		
	Q In Q		
	Up to 4K configurable VLAN 's		
5	<b>Scalable Layer 3 Features</b>		
	Support for interface loopback, Direct Routing, Static Routing, RIPv2, OSPFv2, ECMP over IPv4 & IPv6		
	Support policy base routing		

6	<b>Security</b>		
	Access Control Lists (ACLs)		
	Guest VLANs for enforcing security policies		
	BPDU protection		
	DHCP snooping, IP source guard and Dynamic ARP Inspection (DAI)		
	IP source guard or equivalent		
	Dynamic ARP Inspection (DAI)		
	Dynamic allocation of multiple VLAN s on one port for different user/devices		
	Port-based learn limits (intrusion detection) or equivalent		
	MAC address filtering and MAC address lock-down		
	Private VLANs provide security and port isolation		
	Secure Copy (SCP)		
	Strong password security and encryption		
	MAC-based, web-based IEEE 802.1x authentication		
	IEEE 802.1x with Web Authentication client monitoring		
	SSH , SSLv2 ,SSLv3 , SCP		
	TACACS+ accounting and authentication		
DoS attack blocking			
RSTP Root Guard			
OpenFlow 1.3			
7	<b>Quality of service</b>		
	IEEE 802.1p		
	DSCP Prioritization		
	Policy-based QoS based classifying traffic based on MAC , Port , VLAN , Protocol .		
	ASIC based remarking capabilities		
	Tail drop for queue congestion control		
	Strict priority/ weighted round robin		

8	<b>Should support IPv6 Features</b>		
9	<b>Management Features</b>		
	IEEE 802.1AB Link Layer Discovery Protocol (LLDP)		
	Web GUI		
	sFlow or equivalent		
	Industry-standard CLI with help menu and GUI		
	CLI script option		
	Built-in text editor		
	User-based Security Model (USM) for SNMPv3		
	View-based Access Control Model (VACM) for SNMP		
	Console management port		
	Port mirroring locally within switch and across VSS or equivalent cluster member		
	TFTP , NTP And Syslog,		
	An USB or equivalent memory card socket , allowing software release files, configuration and other files to be stored for backup and distribution to other switches.		
	DDM – Optical digital diagnostic monitoring as per SFF – 8472 or equivalent standards		
10	<b>Multicast Support</b>		
	IGMP/ MLD query solicitation, Snooping		
	IGMP/MLD multicast forwarding (IGMP/MLD proxy) , IGMP Snooping Fast - leave , IGMP Filtering , IGMP snooping report suppression , IGMP source address check , IGMP static entries		
11	<b>Pro Active Intelligence features</b>		
	Event-based triggers allow user-defined scripts to be executed upon selected system events based on Time , Date , day and Event based		
	The switch shall have pro active intelligence to create an ICMP polling for service reach ability based on IP address and configure pro active action upon loss or re establishment of the service reach ability		
	Eco-friendly mode		
	Switch should have inbuilt mechanism for proactively monitoring about any malfunction like power supply or internal temperature (full internal environment).		
12	<b>Voice over IP</b>		
	LLDP-MED ANSI/TIA-1057		
	Voice VLAN		
13	<b>Compliances</b>		
	ROHS compliant is must		
	Energy Efficient Ethernet (EEE)		
	UL, cUL, TUV		



#### 4. PoE Switch

SI No	Technical specification	Compliance (Yes / No)	Remarks
1	24 x 10/100/1000 Base-T PoE+ ports and additional 4 x 100/1000X SFP PORTS		
2	Should support PoE+ as per IEEE 802.3at with PoE budget of 370W or more		
3	<b>L2 Features:</b> Should support STP, RSTP, MSTP, IGMP v1/v2/v3 snooping, STP root guard, Voice VLAN, MLD snooping (MLDv1 and v2), IEEE 802.3ac VLAN tagging		
4	IEEE 802.17/equivalent for sub 50ms ring protection in following scenario : single, dual fibre cuts in ring and when fibre cut at common shared link in between two or more rings		
5	<b>Security:</b> Should support ACL- L2/L3, DHCP snooping, IP Source guard, DAI, Private VLAN, Authentication( MAC, Web and IEEE 802.3x), sflow, , TACACS+, LAG and port mirroring , Loop protection and loop detection, Dynamic VLAN assignment		
6	<b>Management :</b> CLI, GUI, Digital optical monitoring, fault detection in copper cables,DHCPv6, DNSv6, Telnetv6 and SSHv6, NTPv6, IEEE802.3az, RMON 4 groups, SNMPv3, LLDP-MED, IEEE 802.3az, USB interface for taking backup of software release files configurations, SSLv2 and SSLv3, Single IP management of at least 20 switches or more		
7	Operating temperature range: 0°C to 50°C (32°F to 122°F)		
8	For ease of integration, all switches should be of same OEM.		

#### 5. Single Mode Module

S.No.	Technical Specification	Compliance (Yes / No)	Remarks
1	Media Type - Single Mode Fibre		
2	Wavelength - 1310 nm		
3	Maximum Data Rate - 1.25Gbps		
4	Distance - 10 km		
5	<b>Environment Condition</b>		
5.1	Operating temperature - 0°C to 70°C (23°F to 158°F)		
5.3	Storage temperature - -40°C to 85°C (-40°F to 185°F)		
5.5	Fibre connectors - LC Type		

## 5. Passive Components

### 1. CAT 6 Cable

SI No	Type	Technical specification	Compliance (Yes / No)	Remarks
1	Type	Unshielded twisted pair cabling system, TIA / EIA 568-C.2 Category 6 Cabling system		
2	Network support	Supports ultrahigh speed data networks such as Gigabit Ethernet (1000 Base-T and 1000 Base-TX) and beyond.		
3	TIA / EIA 568-B.1	ETL Verified,		
4	Warranty	25-year systems warranty; Warranty to cover Bandwidth of the specified and installed cabling system, and the installation costs. Site certificate must be issued by OEM		
5	Performance characteristics to be provided along with bid	Attenuation, Pair-to-pair and PS NEXT, ELFEXT and PSELFEXT, Return Loss, ACR and PS ACR for 4-connector channel		
6	Manufacturer	All passive cabling must be from same OEM ( UTP and Fiber)		
7	Conductors	23 AWG solid bare copper		
8	Insulation	Polyethylene		
9	Approvals	UL Listed and UL Channel verified		
		ETL verified to TIA / EIA Cat 6		
10	Frequency tested up to	600 MHz minimum		
11	Packing	Box of 305 meters		
12	Impedance	100 Ohms + / - 15 ohms		
13	Performance characteristics to be provided along with bid	Attenuation, Pair-to-pair and PS NEXT, ELFEXT and PSELFEXT, Return Loss, ACR and PS ACR		
14	Delay Skew:	45ns Max		
15	Impedance:	100 ± 15 Ohms		
16	Current Rating:	1.5 A Max		
17	Conductor Resistance: DC	66.5Ω/km		
18	Voltage:	150VAC		
19	Propagation delay:	535ns/100m @250MHz		
20	Mutual Capacitance:	5.6nF/100m Nominal		
21	Insulation Resistance:	500 MΩ Minimum		
22	Dielectric Strength:	1000 V RMS		
23	Contact Resistance:	10 mΩ Max		

## 2. Cat 6 DataGate Jack

SI No	Type	Technical specification	Compliance (Yes / No)	Remarks
1	<b>Features and Benefits</b>	Patented Spring-Loaded Shutter:		
		prevents incomplete mating		
		protects from dust and contaminants		
		Patented IDC V-shaped contacts that flex not fatigue when terminated		
		Features pointed IDC towers to speed termination and enhance cable retention		
		Dual color-coding allows for 568 A/B wiring configuration		
		Can be terminated using industry standard punch-down tools		
		RJ-11 compatible		
		Molded category identification on jack face as well as optional port identification icons		
		USOC Wiring Sequences Available		
2	<b>Dust Proof</b>	RJ45 Jack should be supplied with Cap or Shutter to avoid Dust		
3	<b>RJ45 I/O Compatibility</b>	2a. Individual Compatible RJ45 Jack		
		2b. Pointed IDC Tower on RJ45 Jack for easy termination		
		2c. Half Plugged Patch Cord should be spitted out if not properly plugged in		
4	<b>Mechanical Characteristics</b>			
		Plastic Housing:	Thermoplastic UL94V-0 rated or equivalent	
		Operating Life:	Minimum 750 insertion cycles	
		Contact Material:	Copper Alloy	
		Contact Plating:	50 $\mu$ " Gold/100 $\mu$ " Nickel	
		Contact Force:	100g minimum	
Plug Retention Force:	11 lbf minimum			
5	<b>IDC Connector</b>			
		Plastic Housing:	Thermoplastic UL94V-0 rated or equivalent	
		Operating Life:	Minimum 20 reterminations	
		Contact Material:	Copper Alloy	
		IDC Contact Plating:	Tin/Lead Plate	
Wire Accommodation:	22-24 AWG solid			
6	<b>Electrical Characteristics</b>			
		Interface Resistance:	20 milliohms	
		Initial Contact Resistance:	2.5 milliohms	
		Insulation Resistance:	>100 Megaohms	
7	Parts List:	DataGate Plus Jack with Stuffer Cap		

### 3. Wall plates

SI No	Type	Technical specification	Compliance (Yes / No)	Remarks
1	<b>Features and Benefits</b>	The stylish unloaded Synergy Wallplates were designed specifically to accept the UTP Datagate Connector. The unloaded Synergy Wallplates are available in 1, 2 and 4 port variants, in five colours, to co-ordinate with any decor and any installation size.		
2	<b>Accommodates</b>	Accommodates UTP, STP Datagate jacks Accommodates Molex single bezel Fibre modules Accommodates Molex media configurable modules		
3	<b>Material</b>	VE10 ABS		

### 4. 24 Port loaded Patch Panel 1U Height

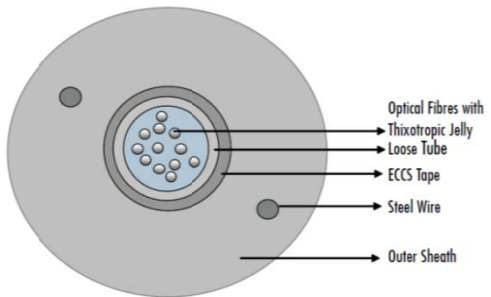
SI No	Type	Technical specification	Compliance (Yes / No)	Remarks
1	<b>Features and Benefits</b>	Available in 1U 24 Port and 2U 48 Port density		
		Each port features the patented spring-loaded shutter:		
		– prevents incomplete mating		
		– protects from dust and contaminants		
		Patented IDC V-shaped contacts that flex not fatigue when terminated		
		Features pointed IDC towers to speed termination and enhance cable retention		
		Dual colour-coding allows for 568 A/B wiring configuration		
		Front and rear port labelling (port sequence 1–480) as well as panel identification label		
		4 x 6 ganged jack configuration		
		Individually removable patch panel ports		
		Removable cable management shelf(s) ensure bend radius compliance		
		Available with either ANSI and metric hardware kit		
		Can be terminated using industry standard punch-down tools		
RJ45 port which is RJ-11 compatible				
Molded category identification on each port face as well as optional port identification icons				
2	<b>Rear Cable Manager</b>	Flat type metal with Perforated Rear Cable Manager to hold CAT6 UTP Cable with velcro cable ties		
3	<b>Dust Proof</b>	RJ45 Jack should be supplied with Cap or Shutter to avoid Dust		

4	<b>RJ45 I/O Compatibility</b>	2a. Individual Compatible RJ45 Jack		
		2b. Pointed IDC Tower on RJ45 Jack for easy termination		
		2c. Half Plugged Patch Cord should be spitted out if not properly plugged in		
5	<b>Mechanical Characteristics</b>			
	Material:	CRS (cold rolled steel)		
	Thickness:	.060" (1.52mm)		
	Coating:	Grey / Option for Black		
6	<b>Jack Connector</b>			
	Plastic Housing:	Thermoplastic UL94V-0 rated or equivalent		
	Operating Life:	Minimum 750 insertion cycles		
	Contact Material:	Phosphor Bronze		
	Contact Plating:	50μ" Gold/100μ" Nickel		
	Contact Force:	100g minimum		
	Plug Retention Force:	11 lbf minimum		
7	<b>IDC Connector</b>			
	Plastic Housing:	Thermoplastic UL94V-0 rated or equivalent		
	Operating Life:	Minimum 20 reterminations		
	Contact Material:	Phosphor Bronze		
	IDC Contact Plating:	Solder Plate (60% tin/40% lead)		
	Wire Accommodation:	22-24 AWG solid		
8	<b>Electrical Characteristics</b>			
	Interface Resistance:	20 milliohms		
	Initial Contact Resistance:	2.5 milliohms		
	Insulation Resistance:	>100 Megaohms		
9	<b>Standards</b>	ETL Verified to ANSI/TIA-568-C.2, ISO/IEC 11801 Category 6		

## 5. Cat 6 Patch cord

Sl No	Type	Technical specification	Compliance (Yes / No)	Remarks
1	Type	PowerCat 6 U/UTP End-to-End Solution and are designed to support data networks for 10/100BASE-T and 1000BASE-T applications.		
2	Conductor size:	24 AWG stranded copper wire		
3	Nom. O.D.:	5.9mm		
4	Sheath:	LS0H		
5	Bend radius:	4X O.D.		
6	Boots	Transparent Plug with anti-snap slip on boots		
7	RJ45 Plug Standard	ISO/IEC 60606-7-4 and FCC 47 Part 68		
8	Sheath Standards	Fire Propagation compliant with CSA FT1, IEC 60332-1, IEC 61034		
9	Operating temperature range:	-20°C to 60°C		
10	MIN operating life	: 750 insertion cycles		
11	RJ45 plug and boot material:	Clear polycarbonate		
12	Contact material:	0.35mm thick copper alloy		
13	Contact plating:	Selective gold		
14	RJ45 plug dimensions compliant with:	ISO/IEC 60603-7-4 and FCC 47 Part 68		
15	Commercial Standards	ISO/IEC 11801:2002/Amd 2:2010 Cat 6-, TIA-568-C.2 Cat 6		
16		ETL Verified		
17	Fire Propagation Tests:	LS0H Sheath: CSA FT1, IEC 60332-1, IEC 61034		
18	Standard length available	0.5mt to 10 mts		

## 6. Single mode 6Core Optical Fiber Cable

SI No	Type	Technical specification	Compliance (Yes / No)	Remarks
1	Type of Fiber	6 / 12 Core singlemode 9/125 micron Loose Tube armored with ROHS Compliant		
2	Application	Outdoor/ Underground		
3	Construction details	 <p>Optical Fibres with Thixotropic Jelly Loose Tube ECCS Tape Steel Wire Outer Sheath</p>		
3.1	Jacket	UV Stabilised Polyethylene HDPE Sheath		
3.2	Armouring	Corrugated Steel Tape Armour (ECCS Tape), Thickness > 0.15mm		
3.3	Strength Member	Two Steel GI Wires		
3.4	Fiber Protection	Polybutylene Terephthalate (PBT)		
3.5	Core Wrapping	Polyethylene Terephthalate		
3.6	Standard	ITU G652.D - LWP, Low water peak		
3.7	Dimensions and Mass			
3.7.1	Overall Cable (Nominal)	9.8mm		
3.7.2	Mass (Nominal)	95 Kg/km		

### 7. SC-LC Single Mode OFC Patch Cords

SI No	Type	Technical specification	Compliance (Yes / No)	Remarks
1	Type of connectors	SC or LC LSOH Jacket - Reduces toxic / corrosive		
2	Length	Minimum 1 meters		
3	Polishing	100% Factory polished and tested		
4	Insertion Loss	Less than 0.35dB per connector		
5	Attenuation	0.4dB/km over 1310nm to 1625nm		
6	Standards	ROHS Compliant		
7	Jacket colour	Industry Standard Colour - OS1-Yellow, OM3-Aqua, OM2-Grey, OM1-Orange		
8	Make and Type	SC to LC Duplex Fiber Optic Patch Cord 9/125 Micron		
9	Cable Sheath	LSZH		
10	Cable Diameter	1.6 mm		
11	Ferrule	Ceramic		
12	Buffer	Tight buffered		
13	Temperature Range	.-40 Degree C to +85 Degree C		
14	Buffer Diameter:	900µm		
15	Primary Coating :	245µm		
16	Strength Member:	Aramid Yarn		
17	Jacket Material:	LSOH IEC 61034-1 & 2, IEC-60332-1, IEC-60754- 1 & 2		

### 8. Single Mode Pigtail

SI No	Type	Technical specification	Compliance (Yes / No)	Remarks
1	Type of connectors	SC or LC LSOH Jacket - Reduces toxic / corrosive		
2	Length	1.5 Mtrs		
3	Polishing	100% Factory polished, tested and Guaranteed Performance		
4	Standards	ROHS Compliant		



## **6. Evaluation of Bids and Selection Procedure**

### **1. Evaluation Process**

Response to this RFP would be evaluated in two phases. Initially technical bids will be opened and evaluated. Those bidders who satisfy the technical requirements of the work, as per the requirements / specifications and the terms and conditions of this RFP, shall be short-listed. Financial bids shall be opened only for the short-listed bidders who have qualified in the technical bid.

### **2. Technical Evaluation**

The bids will be technically evaluated on various components. Each response to the RFP from each bidder will be judged on its own merit. As part of the Technical Bid Evaluation, bidders may be required to demonstrate to the Institute Committee appointed to evaluate this RFP, their works of similar nature, which forms part of the knowledge base of the bidder for the work and exhibits bidder's domain expertise.

### **3. Financial Evaluation**

The Financial bids of the short-listed bidders will be evaluated based on the amount quoted in the Bid.



**NATIONAL INSTITUTE OF TECHNICAL TEACHERS TRAINING AND RESEARCH**  
[Government of India, Ministry of Human Resource Development,  
(Dept. of Higher Education)] Taramani, Chennai – 600 113  
☎ 044 - 2254 5436 / 2254 5406 Fax: 2254 1126 email: [dir@nitttrc.ac.in](mailto:dir@nitttrc.ac.in)

**Modification of Campus Network located at NITTTR premises Taramani, Chennai -600 113 .**

Type the Part-A Technical Bid proforma and Part – B Financial Bid proforma on separate sheets of your letter head / Stationary; without leaving any item in the proforma. Do not quote any rate in Part – A Bid Document. Tenderers are requested to number each page of the Part-A and enclosures in Black / Blue Ink and indicate the total number of pages at the space indicated.

**TOTAL PAGES OF BID: \_\_\_\_\_**

**PART – A  
TECHNICAL BID PROFORMA**

<b>Sl.No.</b>	<b>Item</b>	<b>Details</b>	<b>Wherever supporting documents are provided, indicate page number</b>
1	Name of firm		
2	Address of Firm		
3	Registration No.		
4	Name of the authorized signatory		
5	Specimen Signature of the Authorized signatory.		
6	Telephone Number of the authorized signatory and other Telephone Number of the firm. Website Address ( If available) , Email ID		
7	Whether the firm had enclosed EMD. If “Yes: then DD/Pay order no.		

		Year	Amount in Rupees	
8	Details of the Government Ministries / Department / Organization / PSUs etc. for which the firm has been executing Network commissioning work for the F.Y 2014-15 to 2016-17. Copies of work orders to be enclosed.	2014-15		
		2015-16		
		2016-17		
9	Whether proof/copies of work order on items at S.No. 8 enclosed (Yes/No)			
10	List of copies of documents enclosed.			
11	Whether the Company / Firm had ever been debarred by any court of Law or penalised by any Govt. / Private Organizations?			
12	Is any of the relative of the Company / Firm work in NITTTR, Chennai. If yes 1. Name of the relative 2. Nature of the relationship 3. Designation			

**Signature of the Tenderer  
Name & Address of the Tenderer  
with Office Stamp**

**Place:**

**Date:**



**NATIONAL INSTITUTE OF TECHNICAL TEACHERS TRAINING AND RESEARCH**  
[Government of India, Ministry of Human Resource Development,  
(Dept. of Higher Education)] Taramani, Chennai – 600 113  
☎ 044 - 2254 5436 / 2254 5406 Fax: 2254 1126 email: [dir@nitttrc.ac.in](mailto:dir@nitttrc.ac.in)

**PART - B**  
**FINANCIAL BID PROFORMA**

Sl.no	Item	Details
1	Name of firm	
2	Address firm	
3	Name of authorized Signatory	
4	Specimen Signature of the Authorized signatory	
5	Telephone Number of the authorized signatory and other Telephone Number of the firm. Website Address ( If available) , Email ID	
6	Quoted Value in Rupees for the Modification of Campus Network	
7	EMD amount paid and DD Details	
8	Any Other Details ( If Required)	

Signature of the Tenderer

Name and address of the Tenderer with Office Stamp

Place:

Date :