Government eProcurement System

eProcurement System Government of India

Tender Details

Date : 14-Jul-2023 05:30 PM

Print

Basic Details

Organisation Chain	Indian Institute of Technology Ropar		
Tender Reference Number	1805-23		
Tender ID	2023_IITRP_761710_1	**Withdrawal Allowed**	Yes
Tender Type	Open Tender	**Form of contract**	Buy
Tender Category	Goods	**No. of Covers**	2
General Technical Evaluation Allowed	No	**ItemWise Technical Evaluation Allowed**	No
Payment Mode	Offline	**Is Multi Currency Allowed For BOQ**	No
Is Multi Currency Allowed For Fee	No	**Allow Two Stage Bidding**	No

Payment Instruments

	S.No	Instrument Type
Offline	1	R-T-G-S
	2	NEFT

Cover Details, No. Of Covers - 2

Cover No	Cover	Document Type	Description
1	Fee/PreQual/Technical	.pdf	Tender for Supply Installation and Commissioning of Active and Passive Components at IIT Ropar
2	Finance	.xls	Tender for Supply Installation and Commissioning of Active and Passive Components at IIT Ropar

Tender Fee Details, [Total Fee in ₹ * - 0.00]

Tender Fee in ₹	0.00		
Fee Payable To	Nil	**Fee Payable At**	Nil
Tender Fee Exemption Allowed	No		

EMD Fee Details

EMD Amount in ₹	30,00,000	**EMD through BG/ST or EMD Exemption Allowed**	Yes
EMD Fee Type	fixed	**EMD Percentage**	NA
EMD Payable To	IIT Ropar Revenue Account	**EMD Payable At**	Ropar

Work /Item(s)

Title	Tender for Supply Installation and Commissioning of Active and Passive Components at IIT Ropar				
Work Description	Tender for Supply Installation and Commissioning of Active and Passive Components at IIT Ropar				
Pre Qualification Details	Please refer Tender documents.				
Independent External Monitor/Remarks	NA				
Tender Value in ₹	NA	**Product Category**	Miscellaneous Goods	**Sub category**	Networking Equipments
Contract Type	Tender	**Bid Validity(Days)**	180	**Period Of Work(Days)**	30
Location	IIT Ropar	**Pincode**	140001	**Pre Bid Meeting Place**	NA

Pre Bid Meeting Address	NA	**Pre Bid Meeting Date**	NA	**Bid Opening Place**	M Visvesvaraya Block
Should Allow NDA Tender	No	**Allow Preferential Bidder**	No		

Critical Dates

Publish Date	14-Jul-2023 05:30 PM	**Bid Opening Date**	03-Aug-2023 03:30 PM
Document Download / Sale Start Date	14-Jul-2023 05:30 PM	**Document Download / Sale End Date**	03-Aug-2023 03:00 PM
Clarification Start Date	14-Jul-2023 05:30 PM	**Clarification End Date**	26-Jul-2023 11:00 AM
Bid Submission Start Date	14-Jul-2023 05:30 PM	**Bid Submission End Date**	03-Aug-2023 03:00 PM

Tender Documents

NIT Document

S.No	Document Name	Description	Document Size (in KB)
1	Tendernotice_1.pdf	Tender for Supply Installation and Commissioning of Active and Passive Components at IIT Ropar	6422.70

Work Item Documents

S.No	Document Type	Document Name	Description	Document Size (in KB)
1	Tender Documents	UPLOADNETWORKING14072023.pdf	Tender for Supply Installation and Commissioning of Active and Passive Components at IIT Ropar	6408.39
2	BOQ	BOQ_800787.xls	BOQ FOR QUOTING RATES	370.00

Tender Inviting Authority

Name	Deputy Registrar
Address	Store and Purchase Section M Visvesvaraya Block Indian Institute of Technology Ropar Rupnagar 140001

भारतीय प्रौद्योगिकी संस्थान रोपड़
INDIAN INSTITUTE OF TECHNOLOGY ROPAR
रूपनगर, पंजाब-140001/ Rupnagar, Punjab-140001
Ph. 01881-231285, 231283, e-mail: purchase@iitrpr.ac.in

File No. 1805-23/AD-HODIT/INSTT/PS/ Dated 14/07/2023

भारतीय प्रौद्योगिकी संस्थान रोपड़ निम्नलिखित मदों की खरीद की प्रक्रिया में है।

Indian Institute of Technology Ropar is in the process of purchasing following item(s) as per details as given as:-

मद का विवरण **Details of the item**	**Tender for Supply, Installation and Commissioning of Active and Passive Components at IIT Ropar**
बयाना जमा करने के लिए जमा राशि **Earnest Money Deposit to be submitted**	Rs. 30,00,000.00
वितरणसमय-सारणी **Delivery Schedule**	As per Tender

निविदा दस्तावेज केंद्रीय सार्वजनिक खरीद पोर्टल http://eprocure.gov.in/eprocure/app से डाउनलोड़ हो सकते हैं। ई-प्रोक्योरमेंट में पंजीकृत नहीं होने वाले इच्छु बोलीदाताओं को वेबसाइट http://eprocure.gov.in/eprocure/app के माध्यम से भाग लेने से पहले पंजीकरण करना चाहिए। पोर्टल नामांकन मुफ्त है बोलीदाताओं को सलाह दी जाती है 'आनलाइन बोली के निर्देश' पर दिए गए निर्देशों के माध्यम से जाने की सलाह दी जाए।

Tender Documents may be downloaded from Central Public Procurement Portal http://eprocure.gov.in/eprocure/app.AspiringBidders who have not enrolled / registered in e-procurement shouldenroll / register before participating through the website http://eprocure.gov.in/eprocure/app. The portal enrolment is free of cost. Bidders are advised to go through instructions provided at 'Instructions for online Bid Submission'.

निविदाकर्ता वेबसाइट पर निविदा दस्तावेज का उपयोग कर सकते हैं (एनआईसी साइट में खोज के लिए, कृपया निविदा खोज विकल्प और 'आईआईटी' टाइप करें। उसके बाद, सभी आईआईटी रोपड़ निविदाओं को देखने के लिए "गो" बटन पर क्लिक करें) उपयुक्त निविदा का चयन करें और उन्हें सभी प्रासंगिक सूचनाओं से भरें और वेबसाइट पर http://eprocure.gov.in/eprocure/app पूरा निविदा दस्तावेज अगले पृष्ठ में दिए गए कार्यक्रम के अनुसार आनलाइन जमा करें।

Tenderers can access tender documents on the website (For searching in the NIC site, kindly go to Tender Search option and type 'IIT'. Thereafter, Click on "GO" button to view all IIT Ropar tenders). Select the appropriate tender and fill them with all relevant information and submit the completed tender document online on the website http://eprocure.gov.in/eprocure/appasper the schedule given in the next page.

कोई मैन्युअल बोली स्वीकार नहीं की जाएगी। सभी कोटेशन (दरसूची) (तकनीकी और वित्तीय दोनों को ई-प्रोक्योरमेंट पोर्टल में जमा करनी चाहिए)।

No manual bids will be accepted. All quotation (both Technical and Financial should be submitted in the E-procurement portal).

(कुलसचिव / Registrar)

SCHEDULE		
Name of Organization	Indian Institute of Technology Ropar	
Tender Type (Open/Limited/EOI/Auction/Single/Global)	Open	
Tender Category (Services/Goods/works)	Goods	
Type/Form of Contract (Work/Supply/Service/Buy/Empanelment)	Work and Supply	
Product Category (Civil Works/Electrical Works/Fleet Management/ Computer Systems/Lab Equipment/ Networking Equipments)	Networking Equipments	
Date of Issue/Publishing	14/07/2023 (17:30 Hrs)	
Document Download/Sale Start Date	14/07/2023 (17:30 Hrs)	
Document Download/Sale End Date	03/08/2023 (15:00 Hrs)	
Last Date and Time for Uploading of Bids	03/08/2023 (15:00 Hrs)	
Date and Time of Opening of Technical Bids	03/08/2023 (15:30 Hrs)	
Tender Fee/EMD	Rs.___NIL_____/- (For Tender Fee) **Rs. 30,00,000.00** (For EMD)	
	(To be paid through RTGS/NEFT. IIT Ropar Revenue Account Bank details are as under:	
	Name of the Bank A/C	: IIT Ropar Revenue Account
	SBI A/C No.	: 37360100716
	Name of the Bank	: State Bank of India
	IFSC Code	: SBIN0013181
	MICR Code	: 140002008
	EMD to be paid through RTGS/NEFT into IIT Ropar Revenue Account Bank details are as mentioned in the schedule. The Technical Bid without EMD would be considered as UNRESPONSIVE and will not be accepted. The EMD will be refunded without any interest to the unsuccessful bidders after the award of contract. In case of successful Tenderer, it will be retained till the successful and complete installation of the equipment. This is mandatory that UTR Number is provided in the on- line quotation/bid.	
No. of Covers (1/2/3/4)	2	
Bid Validity days (180/120/90/60/30)	180 days (From last date of opening of tender)	
Address for Communication	Deputy Registrar, Store & Purchase, M. Visvesvaraya Building, Indian Institute of Technology Ropar, Rupnagar – 140001	
Contact No.	01881-231283,85	
Email Address	purchase@iitrpr.ac.in, drsp@iitrpr.ac.in	

Registrar

आनलाइन बोली (बिड) के लिए निर्देश / **Instructions for Online Bid Submission:**

व्यय विभाग के निर्देशों के अनुसार, यह निविदा दस्तावेज केंद्रीय सार्वजनिक प्रापण पोर्टल (यूआरएलः URL:http://eprocure.gov.in/eprocure/app) पर प्रकाशित किया गया है। बोलीदाताओं को मान्य डिजीटल हस्ताक्षर प्रमाणपत्र का उपयोग करते हुए सीपीपी पोर्टल पर इलेक्ट्रानिक रुप से अपनी बोलियों की सॉफ्ट प्रतियां जमा करना आवश्यक है। सीपीपी पोर्टल पर पंजीकरण करने के लिए निविदाकर्ताओं की सहायता करने के लिए नीचे दिए गए निर्देशों तात्पर्य है, सीपीपी पोर्टल पर आवश्यकताओं के अनुसार अपनी बोलियां तैयार करें और अपनी बोलियां आनलाइन जमा करें।

As per the directives of Department of Expenditure, this tender document has been published on the Central Public Procurement Portal (URL:http://eprocure.gov.in/eprocure/app). The bidders are required to submit soft copies of their bids electronically on the CPP Portal, using valid Digital Signature Certificates. The instructions given below are meant to assist the bidders in registering on the CPP Portal, prepare their bids in accordance with the requirements and submitting their bids online on the CPP Portal.

अधिक जानकारी सीपीपी पोर्टल पर आनलाइन बोलियां जमा करने के लिए उपयोगी हो सकती है।

More information useful for submitting online bids on the CPP Portal may be obtained at:

http://eprocure.gov.in/eprocure/app

पंजीकरण / **REGISTRATION**

1) बोलिदाताओं को "नामांकन के लिए यहां क्लिक करें " लिंक पर क्लिक करके सेंट्रल पब्लिक प्रोक्युरमेंट पोर्टल (यूआरएलः :http://eprocure.gov.in/eprocure/app) के ई-प्रोक्योरमेंट मोड्युल पर भर्ती करना आवश्यक है। सीपीपी पोर्टल पर नामांकन निःशुल्क है।

   Bidders are required to enroll on the e-Procurement module of the Central Public Procurement Portal (URL:http://eprocure.gov.in/eprocure/app) by clicking on the link "Click here to Enroll". Enrolment on the CPP Portal is free of charge.

2) नामांकन प्रक्रिया के भाग के रुप में, बोलीदाताओं को अपने खाते के लिए एक अद्वितीय उपयोगकर्ता नाम चुनना होगा और एक पासवर्ड प्रदान करना होगा।

   As part of the enrolment process, the bidders will be required to choose a unique username and assign a password for their accounts.

3) बोलीदाताओं को सलाह दी जाती है कि पंजीकरण प्रक्रिया के भाग के रुप में अपना वैध ईमेल पता और मोबाइल नंबर पंजीकृत करें। इनका उपयोग सीपीपी पोर्टल से किसी भी संचार के लिप किया जाएगा।

   Bidders are advised to register their valid email address and mobile numbers as part of the registration process. These would be used for any communication from the CPP Portal.

4) नामांकन पर, बोलीदाताओं को सीसीए इंडिया द्वारा मान्यता प्राप्त किसी प्रमाणन प्राधिकरण द्वारा जारी किए गए अपने मान्य डिजीटल हस्ताक्षर प्रमाण पत्र (कक्षा द्वितीय या कक्षा IIIप्रमाण पत्र के साथ महत्वपूर्ण उपयोग पर हस्ताक्षर करने) की आवश्यकता होगी। (जेसे सीफी/टीसीएस/एनकोड/ई-मुद्रा आदि), इनके प्रोफाइल के साथ

   Upon enrolment, the bidders will be required to register their valid Digital Signature Certificate (Class II or Class III Certificates with signing key usage) issued by any Certifying Authority recognized by CCA India (e.g. Sify / TCS / nCode / eMudhra etc.), with their profile.

5) केवल एक मान्य डीएससी एक बोलीदाता द्वारा पंजीकृत होना चाहिए। कृपया ध्यान दें कि निविदाकर्ता यह सुनिश्चित करने के लिए जिम्मेदार है कि वे अपने डीएससी को दूसरों को उधार नहीं देते हैं जिससे दुरुपयोग हो सकता है।

Only one valid DSC should be registered by a bidder. Please note that the bidders are responsible to ensure that they do not lend their DSCs to others which may lead to misuse.

6) बोलीदाता फिर अपने यूजर आईडी / पासवर्ड और डीएससी/ईटीकेन के पासवर्ड को दर्ज करके सुरक्षित लॉग-इन के माध्यम से साइट पर लॉग आन करता है।

Bidder then logs in to the site through the secured log-in by entering their userID / password and the password of the DSC / eToken.

निविदा दस्तावेजों के लिए खोजना / SEARCHING FOR TENDER DOCUMENTS/

1) सीपीपी पोर्टल में निर्मित विभिन्न खोज विकल्प है, ताकि बोलीदाओं को कई मापदंड़ों से सक्रिय निविदाएं खोज सकें। इन मापदंड़ों में निविदा आईडी, संगठन का नाम, स्थान, तिथि, मूल्य आदि शामिल हो सकते हैं। निविदाओं के लिए उन्नत खोज का एक विकल्प भी है, जिसमें बोलीदाता कई नामों को जोड़ सकते हैं जैसे संगठन का नाम, अनुबंध का स्थान, स्थान, सीपीपी पोर्टल पर प्रकाशित निविदा की खखोज के लिए तारीख, अन्य कीवर्ड आदि।

There are various search options built in the CPP Portal, to facilitate bidders to search active tenders by several parameters. These parameters could include Tender ID, organization name, location, date, value, etc. There is also an option of advanced search for tenders, wherein the bidders may combine a number of search parameters such as organization name, form of contract, location, date, other keywords etc. to search for a tender published on the CPP Portal.

2) बोलीदाताओं ने एक बार निविदाएं चुनी हैं जिसमें वें रुचि रखेत हैं, उसका वे आवश्यक दस्तावेज / निविदा कार्यक्रम डाउनलोड़ कर सकते हैं। ये निविदाएं ''मेरी निविदाएं'' फोल्डर में ले जाई जा सकती हैं। इससे सीपीपी पोर्टल को बोलीदाताओं को एसएमएस / ई-मेल के माध्यम से सूचित किया जा सकता है, यदि निविदा दस्तावेज में कोई शुद्धि जारी की गई है।

Once the bidders have selected the tenders they are interested in, they may download the required documents / tender schedules. These tenders can be moved to the respective 'My Tenders' folder. This would enable the CPP Portal to intimate the bidders through SMS / e-mail in case there is any corrigendum issued to the tender document.

3) बोलीदाता को प्रत्येक निविदा को निर्दिष्ट अद्वितीय निविदा आईडी का नोट बनाना चाहिए, अगर वे हेल्पडेस्क से कोई स्पष्टीकरण / सहायता प्राप्त करना चाहते है।

The bidder should make a note of the unique Tender ID assigned to each tender, in case they want to obtain any clarification / help from the Helpdesk.

बोली की तैयारी / PREPARATION OF BIDS

1) बोलीदाता को अपनी बोलियां जमा करने से पहले निविदा दस्तावेज पर प्रकाशित किसी भी शुद्धि को ध्यान में रखना चाहिए।

Bidder should take into account any corrigendum published on the tender document before submitting their bids.

2) कृपया बोली के भाग के रुप में जमा किए जाने वाले दस्तावेजों को समझन के लिए निविदा विज्ञापन और निविदा दस्तावेज ध्यान से देखें। कृपया उन अंकों की संख्या पर ध्यान दें जिन में बोली दस्तावेज जमा करना है, दस्तावेजों की संख्या- जिसमें प्रत्येक दस्तावेज के नाम और सामग्री शामिल हैं, जिन्हें प्रस्तुत करने की आवश्यकता है। इनमें से कोई भी विचलन बोली को अस्वीकार कर सकता है।

Please go through the tender advertisement and the tender document carefully to understand the documents required to be submitted as part of the bid. Please note the number of covers in which the bid documents have to be submitted, the number of

documents - including the names and content of each of the document that need to be submitted. Any deviations from these may lead to rejection of the bid.

3) बोलीदाता, अग्रिम में, निविदा दस्तावेज/ अनुसूची में बताए अनुसार प्रस्तुत करने क लिए बोली दस्तावेज तैयार करना चाहिए और आम तौर पर, वे पीडीएफ/एक्सएलएस/आरएआर/डीडब्ल्यूएफ स्वरुपों में हो सकते हैं। बोली दस्तावेजों को 100 डीपीआई के साथ काले और सफेद विकल्प स्कैन किया जा सकता है।

Bidder, in advance, should get ready the bid documents to be submitted as indicated in the tender document / schedule and generally, they can be in PDF / XLS / RAR / DWF formats. Bid documents may be scanned with 100 dpi with black and white option.

4) मानक दस्तावेजों के एक ही सेट को अपलोड़ करने के लिए आवश्यक समय और प्रयास से बचने के लिए जो प्रत्येक बोली के भाग के रुप में जमा करने के लिए आवश्यक हैं, ऐसे मानक दस्तावेज अपलोड करने का प्रावधान (जैसै पैन कार्ड कॉपी, वार्षिक रिपोर्ट, लेखा परीक्षक प्रमाणपत्र आदि) बोलीदाताओं को प्रदान किया गया है। ऐसे दस्तावेजों को अपलोड करने के लिए बोलीकर्ता उनके लिए उपलब्ध ''मेरा स्पेस'' क्षेत्र उपयोग कर सकते हैं। बोली जमा करते समय ये दस्तावेज सीधे ''मेरा स्पेस'' क्षेत्र में जमा किए जा सकते हैं, और उन्हें बार-बार अपलोड करने की आवश्यकता नहीं है इससे बोली जमा प्रक्रिया के लिए आवश्यक समय में कमी आएगी।

To avoid the time and effort required in uploading the same set of standard documents which are required to be submitted as a part of every bid, a provision of uploading such standard documents (e.g. PAN card copy, annual reports, auditor certificates etc.) has been provided to the bidders. Bidders can use "My Space" area available to them to upload such documents. These documents may be directly submitted from the "My Space" area while submitting a bid, and need not be uploaded again and again. This will lead to a reduction in the time required for bid submission process.

बोली जमा करना / **SUBMISSION OF BIDS**

1) बोलीदाता को बोली प्रस्तुति के लिए अच्छी तरह से साइट पर लॉग इन रना चाहिए ताकि वह समय पर बोली अपलोड कर सके अथवा फिर बोली प्रस्तुत करने के समय से पहले। अन्य मुद्दों के कारण किसी भी देरी के लिए बोलीदाता जिम्मेदार होगा।

Bidder should log into the site well in advance for bid submission so that he/she upload the bid in time i.e. on or before the bid submission time. Bidder will be responsible for any delay due to other issues.

2) बोलीदाता को निविदा दस्तावेज में दर्शाए अनुसार एक-एक करके आवश्यक बोली दस्तावेजों को डिजीटल हस्ताक्षर और अपलोड करना होगा।

The bidder has to digitally sign the bid document and upload the required bid documents one by one as indicated in the tender document.

3) बोलीदाता को निविदा शुल्क/ ईएमडी को भुगतान के लिए ''आन लाइन'' के रुप में भुगतान विकल्प चुनना होगा और उपकरण का विवरण दर्ज करना होगा। जब भी, ईएमडी / निविदा शुल्क की मांग की जाती है, बोलीदाताओं को टेंडर शुल्क और ईएमडी अलग-अलग आरटीजीएस के माध्यम से आन लाइन पर भुगतान करने की आवश्यकता होती है।

Bidder has to select the payment option as "on-line" to pay the tender fee / EMD as applicable and enter details of the instrument. Whenever, an EMD / Tender fee is sought, bidders need to pay the tender fee and EMD separately on-line through RTGS.

4) एक मानक BoQप्रारुप को सभी बोलीदाताओं द्वारा भरने के लिए निविदा दस्तावेज प्रदान किया गया है। बोलीदाताओं को इस बात का ध्यान रखना चाहिए कि उन्हें आवश्यक प्रारुप में अपनी वित्तीय बोली जमा करनी चाहिए और कोई अन्य प्रारुप स्वीकार्य नहीं है। बोलीकर्ताओं को BoQफाइल को डाउनलोड करने, इसे खोलने और अपने संबंधित वित्तीय उद्धरण और अन्य विवरण (जैसे बोलीदाता का नाम) के साथ सफेद रंगीन (असुरक्षित) कोशिकाओं को पूरा करना आवश्यक है। कोई भी अन्य कक्ष नहीं बदला जाना चाहिए। एक बार विवरण पूरा हो जाने

पर, बोलीदाता को इसे सहेजना होगा और इसे आनलाइन जमा करना होगा, बिना फाइल नाम बदलें। यदि BoQफाइल को बोलीदाता द्वारा संशोधित किया गया है, तो बोली को खारिज कर दिया जाएगा।

A standard BoQ format has been provided with the tender document to be filled by all the bidders. Bidders are requested to note that they should necessarily submit their financial bids in the format provided and no other format is acceptable. Bidders are required to download the BoQ file, open it and complete the white colored (unprotected) cells with their respective financial quotes and other details (such as name of the bidder). No other cells should be changed. Once the details have been completed, the bidder should save it and submit it online, without changing the filename. If the BoQ file is found to be modified by the bidder, the bid will be rejected.

5) सर्वर का समय (जो बोलीदाताओं के डैशबोर्ड पर प्रदर्शित होता है) बोलीदाताओं द्वारा बोलियों को खोलने के लिए समय सीमा को संदर्भित करने के लिए मानक समय के रुप में माना जाएगा। बोलीदाताओं को खोलना आदि। बोलीदाताओं को बोली प्रस्तुत करने के दौरान इस समय का पालन करना चाहिए।

The server time (which is displayed on the bidders' dashboard) will be considered as the standard time for referencing the deadlines for submission of the bids by the bidders, opening of bids etc. The bidders should follow this time during bid submission.

6) बोलीदाताओं द्वारा प्रस्तुत सभी दस्तावेज पीकेआई एन्क्रिप्शन तकनीकों का उपयोग करके एन्क्रिष्ट किया जाएगा जिससे डेटा की गोपनीयता सुनिश्चित हो सके। दर्ज किए गए डेटा को अनाधिकृत व्यक्तियों द्वारा बोली खोलने के समय तक नहीं देखा जा सकता है। बोलियों की गोपनीयता को सुरक्षित सॉकेट लेयर 128 बिट एन्क्रिप्शन तकनीक का उपयोग कर रखा जाता है। संवेदनशील क्षेत्रों का डेटा संग्रहण एन्क्रिप्शन किया जाता है।

All the documents being submitted by the bidders would be encrypted using PKI encryption techniques to ensure the secrecy of the data. The data entered cannot be viewed by unauthorized persons until the time of bid opening. The confidentiality of the bids is maintained using the secured Socket Layer 128 bit encryption technology. Data storage encryption of sensitive fields is done.

7) अपलोड किए गए निविदा दस्तावेज केवल अधिकृत बोलीदाता द्वारा निविदा खोलने के बाद ही पठनीय हो सकते हैं।

The uploaded tender documents become readable only after the tender opening by the authorized bid openers.

8) बोलियों के सफल और समय पर जमा होने पर, पोर्टल सभी प्रासंगिक विवरणों के साथ बोली संख्या, बोली जमा करने की तारीख और समय के साथ बोली सफलतापूर्वक जमा करने का संदेश एवं बोली सारांश प्रदर्शित करेगा।

Upon the successful and timely submission of bids, the portal will give a successful bid submission message & a bid summary will be displayed with the bid no. and the date & time of submission of the bid with all other relevant details.

9) कृपया अनुपालन पत्रक की एक पीडीएफ फाइल में सभी प्रासंगिक दस्तावेजों के स्कैन किए गए पीडीएफ को जोड़ दें।

Kindly add scanned PDF of all relevant documents in a single PDF file of compliance sheet.

बोलीदाताओं को सहायता / **ASSISTANCE TO BIDDERS**

1) निविदा दस्तावेज से संबंधित कोई भी प्रश्न और इसमें निहित नियमों और शर्तों को निविता आमंत्रण प्राधिकरण को निविदा के लिए अथवा निविदा में वर्णित प्रासंगिक संपर्क व्यक्ति से संबोधित किया जाना चाहिए।

Any queries relating to the tender document and the terms and conditions contained therein should be addressed to the Tender Inviting Authority for a tender or the relevant contact person indicated in the tender.

2) आनलाइन बोली प्रस्तुत करने अथवा सामान्य में सीपीपी पोर्टल से संबंधित प्रश्नों की प्रक्रिया से संबंधित कोई भी प्रश्न 24x7सीपीपी पोर्टल हैल्पडेस्क पर निर्देशित किया जा सकता है। हेल्पडेस्क के लिए संपर्क संख्या 1800 233 7315हैं।

Any queries relating to the process of online bid submission or queries relating to CPP Portal in general may be directed to the 24x7 CPP Portal Helpdesk. The contact number for the helpdesk is 1800 233 7315.

बोलीदाताओं के लिए समान्य निर्देश / **General Instructions to the Bidders**

1) निविदाएं पोर्टल http://eprocure.gov.in/eprocure/appके मा ध्यम से आनलाइन प्राप्त होगी। तकनीकी बोलियों में, बोलीदाताओं को सभी दस्तावेजों को पीडीएफ प्रारुप में अपलोड करना होगा।

The tenders will be received online through portal http://eprocure.gov.in/eprocure/app .In the Technical Bids, the bidders are required to upload all the documents in .pdf format.

2) कंपनी के नाम में स्मार्ट कार्ड/ई-टोकन के रुप में मान्य क्लास II/IIIडिजिटल हस्ताक्षर प्रमाणपत्र (डीएससी) के पंजीकरण के लिए एक शर्त है और https://eprocure.gov.in/eprocure/appके माध्यम से बोली प्रस्तु करने की गतिविधियों में भाग ले सकते है। डिजिटल हस्ताक्षर प्रमाणपत्र पर अधिकृत प्रमाणित एजेंसियों से प्राप्त की जा सकती है, जिनमें से जानकारी "डीएससी के बारे में सूचना "लिंक के तहत वेब साइट https://eprocure.gov.in/eprocure/appपर उपलब्ध है।

Possession of a Valid Class II/III Digital Signature Certificate (DSC) in the form of smart card/e-token in the company's name is a prerequisite for registration and participating in the bid submission activities through https://eprocure.gov.in/eprocure/app. Digital Signature Certificates can be obtained from the authorized certifying agencies, details of which are available in the web site https://eprocure.gov.in/eprocure/app under the link "Information about DSC".

3) निविदाकर्ता को सलाह दी जाती है कि https://eprocure.gov.in/eprocure/app. पर ई-प्रोक्योरमेंट के लिए सेंट्रल पब्लिक प्रौक्योरमेंट पोर्टल माध्यम से आनलाइन बोली के जमा करते समय निविदाकार हेतु निर्देशों में उपलब्ध निर्देशों का अनुगमन करें।

Tenderer are advised to follow the instructions provided in the 'Instructions to the Tenderer the e-submission of the bids online through the Central Public Procurement Portal for e Procurement at https://eprocure.gov.in/eprocure/app.

भारतीय प्रौद्योगिकी संस्थान रोपड़

INDIAN INSTITUTE OF TECHNOLOGY ROPAR

Supply, Installation, and Commissioning of Active and Passive Components at IIT Ropar

Background

The Indian Institute of Technology Ropar is located in Rupnagar district, Punjab, India. The institute has two campuses: the transit campus and the main campus. The institute was established in 2008, and initially, most academic departments operated from the transit campus. Now, the institute has shifted most of its departments to the main campus.

The main campus of IIT Ropar is spread over 500 acres and is equipped with the state-of-the-art facilities for teaching, learning, research, and innovation. It is a fully residential campus, which means that all students are required to live on campus. The campus is designed to provide a comfortable and conducive environment for learning, with modern lecture halls, well-equipped laboratories, and extensive library resources.

IIT Ropar offers undergraduate, postgraduate, and doctoral programs in various fields of engineering, science, and humanities. The Institute strongly focuses on research and innovation and has established several centers of excellence in artificial intelligence, nanotechnology, and renewable energy. The faculty at IIT Ropar comprises highly qualified and experienced academics and researchers dedicated to providing quality education and training to students.

Objective

To provide high availability, scalability, reliability, security, through robust network architecture to the IIT Ropar community at the main campus. The network infrastructure and the IT setup should offer minimal downtime due to link or device failure, breakdown, or planned outages. The network design to connect the buildings listed in the tender should integrate with the existing network infrastructure and connect to the two data centers using the DR/DC concept. The network should be scalable and flexible to make future expansions and enhancements as and when the campus infrastructure expands.

Introduction

All the buildings on the main campus are networked, and a fiber ring connects them, spanning a perimeter of about 3.4 km. The fiber terminates in the data center in the Ramanujan building, and all the buildings are connected to the ring using 6-core fiber in redundant mode. The ISPs terminate in the same data center. The existing network follows a 3-tier LAN architecture consisting of Core/Aggregation Switches, Distribution Switches, and Access Switches. The IP network offers LAN, WiFi, IP Telephony, and surveillance services. The buildings yet to be networked, which fall under the scope of this tender, are ready for networking.

Scope of Work

Bids are invited for Active and Passive data networking components.

The scope of work for the active and passive data network infrastructure involves conducting feasibility site surveys to determine the most suitable locations for installing the network infrastructure. These surveys entail identifying potential obstacles and constraints, such as buildings, terrain, and existing infrastructure, that may affect the installation process.

In addition, the bidder will be responsible for preparing detailed drawings and plans for laying cable routes, rack locations, node placement, and Wi-Fi access points placement, among other

necessary infrastructure components. This includes designing a network topology that meets the project requirements and ensures optimal data transmission speeds, reliability, and security.

Furthermore, the bidder must select appropriate cables, connectors, and other passive network components that are compatible with the chosen network topology and meet the project specifications. The installation of these network components will adhere to industry standards and best practices, guaranteeing the efficient and effective operation of the network.

Overall, the scope of work for the active and passive data network infrastructure involves designing, planning, and installing a reliable and secure network infrastructure that meets the project requirements and supports efficient data transmission.

Only a single bidder would be selected for both sections i.e. section A and Section B.

Section-A

Annexure-I

Eligibility Criteria for bidder (Passive):

1. Similar Works Experience: The bidder must have completed similar networking works in IIT, government institutes, educational institutes or other government organization or Reputed Private Organization during the last 7(seven) years. The bidder must have completed at least one of the following options:

    a. 3 (three) Purchase orders of "similar works," each of around 800 nodes, supported by relevant documents.

    i. OR

    b. 2 (two) Purchase orders of "similar works," each of around 1600 nodes, supported by relevant documents.

    i. OR

    c. 1 (one) Purchase order of "similar work" of around 2400 nodes, supported by relevant documents.

2. **OEM Authorization Certificate**: The bidder must submit a valid OEM authorization certificate for this bid.

3. **Experience:** The bidder should have at least 5(five) years of experience in supply, installation, integration, commissioning, and management of networking projects. (PO/Certified copies of Successful Work Completion certificates clearly state the work's nature to be submitted as proof.)

4. **Consortium:** The bidder should be a single legal entity / individual organization. The consortium shall not be allowed (Undertaking signed by an authorized signatory must be provided.

5. **Materials:** The materials supplied by the bidder shall be new, i.e., manufactured not earlier than 12 months before the date of quotation opening, on OEM letterhead.

6. **Site Survey:** The bidder must visit to inspect & survey site conditions before quoting their rates for the tender. Any later claims regarding site conditions will not be entertained.

7. **Residential Accommodation:** No residential accommodation shall be provided to any of the staff engaged by the bidder. The bidder shall also not be allowed to erect any temporary setup for staff on the campus.

8. **Labor Safety and Compliance:** The labor deployed on the site for the execution of work shall take all safety precautions, and the bidder shall be responsible for complying with all labor regulations, liabilities, and safety measures. If IIT Ropar is dissatisfied with the labor performance, alternate staff must be provided immediately.

9. **Drawings Approval:** The bidder must submit the LAN and Fiber cable laying route plan in CAD drawings with the precise locations to the IT Section before executing the works for approval from the Competent Authority.

10. **Site Personnel:** The bidder shall depute one Site Engineer and Site Supervisor on their payroll. The Site Engineer should be OEM certified and have a minimum of 4 years of experience in passive networking. They shall remain present at the site from the start of the project until the completion certificate is issued. If the Site Engineer or Supervisor is absent, recovery shall be made from the bidder at the rate of Rs. 2000/- per day/per person. The bidder shall provide the details of the Site Engineer and Supervisor, including their names, qualifications, and experience, along with the bid. The attendance of these personnel shall be recorded at IIT Ropar.

11. **In-house Equipment**: Bidders should have Splicing, OTDR/OLTS, and Penta scans machines in-house. The bidder must provide an undertaking document on their letterhead.

12. **Additional Work:** Before commencing any additional work/material, the bidder must take written approval from the authorities of IIT Ropar.

13. **Responsibility:** The bidder is responsible for resolving any damage to the passive components caused by other agencies or external parties. IIT Ropar shall not be held accountable for addressing such issues.

14. **Structural Damage:** If any structure, temporary or permanent, is dismantled, destroyed, or damaged during the execution of the work, the bidder shall refill, restore, or reconstruct to its previous condition at their own cost. IIT Ropar shall not be responsible for any such damages.

15. **Physical Verification:** After installation, all passive components should undergo physical verification.

16. **Material Custody:** The bidder shall rectify any damages caused during the installation or shifting of materials when the site is under the bidder's custody. The delivered materials will be under the custody of the bidder until the completion of the project.

17. **Balance Material:** The given BoQ is a preliminary estimate; therefore, a site visit is mandatory for bidders. Balance/Remaining material should be taken by the bidder at their own cost. The Institute will not bear any transportation charges, toll charges, taxes, or storage charges. The materials should be removed within ten days from the date of the completion certificate. The Institute will not be liable for the safety of the materials.

18. **Billing:** The billing shall be based on actual measurements of the materials used. No additional measurements regarding wastage, missing items, overheads, and balance material shall be entertained in the billing.

Annexure-II

Eligibility criteria for OEM(passive)

1. The passive components' OEM must be ISO 9001 and ISO 14000 certified. The material must have been manufactured in the OEM's own manufacturing facilities and not outsourced.

2. The OEM of passive components quoted by the bidder should have a presence in India for at least ten years, ending on the previous day of the last day of submission of the tender. Supporting documents must be attached. The OEM should also have at least one manufacturing plant in India to comply with the Make in India initiative.

3. The OEM of Passive components must have at least one RCDD (Registered Communications Distribution Designer) certified engineer on their own payroll sitting in India, whose services can be utilized in the project as and when required. Supporting documents are required with the bid.

4. All passive networking materials (excluding Racks and PVC items) quoted by the bidder

should only be from a single OEM make.

5. All fiber cables should be bent compliant with ITU-T G.657.A1, OS2.

6. For Cat 6/Cat 6A U/UTP cables, performance should be maintained even when termination is within 15 meters, thus ensuring the elimination of short resonance for 4-connector channels. UL/ETL reports for 4 Connectors need to be submitted.

7. The bidder/OEM should provide test reports generated from any testing software/device for a minimum of 5000 nodes in support of experience to execute such requirements of margin (3 dB or higher) for Cat 6A / (6 dB or higher) for Cat6 of NEXT (worst case) for the entire frequency range specified in ISO/IEC 11801. Supporting documents are required.

8. The Cat 6 U/UTP cable and Cat 6A U/UTP cable should be ETL verified, and all passive components should comply with the RoHS standard. The declaration of RoHS compliance should be mentioned on the datasheets of each Passive Component.

9. The Cat 6 U/UTP and Cat 6A U/UTP cable should comply with IEC60332-3-22, IEC 61034-1 and -2, IEC 60754-1 and -2, UL 94, EN 50575 features for environment safety.

10. The OEM of passive components is required to provide a performance warranty of a minimum of 20 years from the date of site handover.

11. Failure to comply with any of the above terms and conditions will lead to the rejection of the bid.

ANNEXURE-III

Technical Specifications for Passive components

Copper Cables and Components

Cat6- U/UTP Cable Box -305 Mtrs			
S. No.	**General Specifications**	**Compliance (Yes/No)**	**Submit the Proof Document (Page No)**
1	4-pair, Cat 6 U/UTP Cable, Channel performance up to 250 MHz or more, Category-6 U/UTP with ETL 4 connector channel test report as per ISO/IEC 11801, 23 AWG bare solid copper.		
2	ANSI/TIA 568-C.2 Category 6 specifications, Cat 6 U/UTP Solution, ETL 4 Connector channel Test report, Performance ETL Verified Certificate. RoHS Compliant.		
3	Cat 6 Cable shall support a minimum of 4 connector Channel with a minimum 6 dB guaranteed NEXT over and above the standard TIA 568 C.2 & 3rd Party Intertek (ETL) reports		
4	Worst Case Cable Skew: 30 NSec/100 meters @ 250 MHz, Characteristic Impedance: 100±6 Ù@ 1-250 MHz or as per ANSI/TIA 568 C.2, DC Resistance Max: 7.61 Ohms/100m, LSZH		
5	Low Smoke zero halogen (LSZH), as per flame rating standards IEC60332-3-22, IEC 61034-1 and -2, IEC 60754-1 and -2, UL 94, EN 50575, Operational Temp: -20º to 60º Celsius		

	Jack Panel – Modular / Loaded (24 Port)		
S. No.	**General Specifications**	**Compliance (Yes/No)**	**Submit the Proof Document (Page No)**
1	Shall be unloaded or loaded with individually replaceable 24 nos. Category-6 I/O PCB/PWB-based Jacks complying with ANSI/TIA-568C.2 or ANSI/TIA-568.2-D		
2	Cat 6 U/UTP Jack Panel should be UL Listed, RoHS Compliance, Jack Current Rating" 1.5A @20ºC or 68ºF, Insulation Resistance Min. - 500 M Ohm.		
3	The panel should have an integrated rear cable		

	management bar that allows the bunching of 6 cables and properly dressing the cables.		
4	The patch panel type shall be a 1U panel capable of supporting 24 unshielded modular 8-pin connectors compliant with IEC 60603-7 while meeting the Channel Performance.		

	Cat 6 U/UTP Patch Cord – 3 & 7 feet		
S. No.	**General Specifications**	**Compliance (Yes/No)**	**Submit the Proof Document (Page No)**
1	Cat 6 U/UTP Patch Cable, TIA- 568C Category-6, UL-listed / ETL Channel test report as per ISO/IEC 11801, ANSI/TIA 568 C.2, RoHS Compliant.		
2	Patch cords shall be of stranded copper cable with UL/ETL Listed. Conductor Material should be Tinned copper, Plugs shall be designed with an anti-snag latch.		
3	Patch cords sheath shall be LSZH per IEC 60332-1, IEC60332-3-22, IEC 61034-1 and -2, IEC 60754-1 and -2, UL 94, EN 50575, Operational Temp: -20º to 60º Celsius		

	Cat 6 UTP Information Outlet		
S. No.	**General Specifications**	**Compliance (Yes/No)**	**Submit the Proof Document (Page No)**
1	Cat 6 UTP Jack PCB/PWB based Information Outlet (I/O) RJ45, TIA-568 C.2 Category-6. UL Listed, ETL Channel test report as per ISO/IEC 11801, ANSI/TIA 568 C.2.		
2	high-impact, flame-retardant, UL- RATED 94v 0 thermoplastic		
3	Contact Resistance: 100 milliohms; Insulation resistance 500 Mega ohms minimum; Current Rating: 1.5 A (max), Contact: 50 '' gold plating over 100 '' nickel underplate)		
4	The information outlet must support 90-degree cable termination. Plug Retention Force: 133 N minimum between the modular plug and jack, Meets and exceeds ISO 9001:2015, RoHS compliant		

	Cat 6A Cable Box -305 Mtrs		
S. No.	**General Specifications**	**Compliance (Yes/No)**	**Submit the Proof Document (Page No)**
1	4-pair, Cat 6A U/UTP Cable, Channel performance up to 500 MHz or more, Category-6A with ETL 4 connector channel test report as per ISO/IEC 11801, 23 AWG bare solid copper		
2	Meets ANSI/TIA 568-C.2 Category 6A specifications, Cat 6A U/UTP Solution, ETL 4 Connector channel Test report, Performance ETL Verified Certificate. RoHS Compliant.		
3	Cat 6A Cable shall support a minimum of 4 connector Channel with a minimum 3 dB guaranteed NEXT over and above the standard TIA 568 C.2 & 3rd Party Intertek (ETL) reports		
4	Worst Case Cable Skew: 45 NSec/100 meters, Characteristic Impedance: 100±6 Ù@ 1-500 MHz or as per ANSI/TIA 568 C.2 DC Resistance Max: 7.61 Ohms/100m, LSZH		
5	Sheath should be LSZH as per flame rating standard IEC60332-3-22, IEC 61034-1 and -2, IEC 60754-1 and -2, UL 94, EN 50575, Operational Temp: -20º to 60º Celsius		
6	Insulation Material- Polyolefin, Separator Material- Polyolefin, PAIRS with Standard Color Code & length: 305 Mtrs. (1000 ft.) The cable and cordage shall be UTP components that do not include internal or external shields, screened components or drain wires.		
	Cat 6A UTP Information Outlet		
S. No.	**General Specifications**	**Compliance (Yes/No)**	**Submit the Proof Document (Page No)**
1	Cat 6A UTP Jack PCB/PWB based Information Outlet (I/O) RJ45, TIA-568 C.2 Category-6A. UL Listed, ETL Channel test report as per ISO/IEC 11801, ANSI/TIA 568 C.2.		
2	high-impact, flame-retardant, UL- RATED 94v 0 thermoplastic		
3	Contact Resistance: 100 milliohms; Insulating resistance 500 Mega ohms minimum; Current Rating: 1.5 A (max), Contact:		

	50u'' gold over 100u'' nickel)		
4	The information outlet must support 90-degree cable termination. Plug Retention Force: 133 N minimum between the modular plug and jack, Meets and exceeds ISO 9001:2015, RoHS compliant		

	Cat 6A Jack Panel –loaded/Modular (24 Port)		
S. No.	**General Specifications**	**Compliance (Yes/No)**	**Submit the Proof Document (Page No)**
1	Cat 6A U/UTP, 24-port loaded/Modular Straight Jack Panel for 24 nos. UTP ports PCB/PWB based IO Jacks, 1U size.		
2	Jack Panel should be UL Listed, RoHS Compliance, Current Rating" 1.5A @20ºC or 68ºF, Insulation Resistance Min. -500 M Ohm.		
3	The panel should have an integrated rear cable management bar that allows the bunching of 6 cables and properly dressing the cables.		
4	The patch panel type shall be a 1U panel capable of supporting 24 unshielded modular 8-pin connectors compliant with IEC 60603-7 while meeting the Channel Performance.		

	Cat 6A UTP Patch Cord – 3, 7, and 10 feet		
S. No.	**General Specifications**	**Compliance (Yes/No)**	**Submit the Proof Document (Page No)**
1	Cat 6A U/UTP Patch Cable, TIA- 568C Category-6, UL-listed / ETL Channel test report as per ISO/IEC 11801, ANSI/TIA 568 C.2, RoHS Compliant.		
2	Patch cords shall be of Solid copper cable with UL/ETL Listed. Plugs shall be designed with an anti-snag latch.		
3	Patch cords sheath shall be LSZH as per IEC60332-3-22,IEC 61034-1 and -2, IEC 60754-1 and -2, UL 94, EN 50575, Operational Temp: -20º to 60º Celsius		
4	Plug Retention Force, Min. 133 N, Mutual Capacitance: 6.0 nF/100 m @ 1 kHz		

Technical specifications for fiber cables and components

	6 Core Single Mode Outdoor Fiber Cable		
S. No.	**General Specifications**	**Compliance (Yes/No)**	**Submit the Proof Document (Page No)**
1	6-core OFC, Multitube, HDPE/MDPE Sheath, Single Mode, Gel-Free/Gel-Filled, FRP Rod as a central strength member, Outdoor Stranded Loose Tube, Anti termite, Anti rodent & UV stabilized Cable.		
2	Fiber Optic Cable: 9/125µm, OS2, AS PER ITU-T G.652.D, G.657.A1(Bend Insensitive), IEC 60794, Qualifies as per ANSI/TIA-568-C.3, EN 50173 & ISO/IEC 11801.		
3	Total number of fibers shall be 6, with 1 loose tube, each tube having 6 fibers.		
4	Fiber Cable is tested in accordance with Telcordia GR-20; Core Wrapping shall be a Single Layer of Polyester Tape Applied Longitudinally, RoHS Compliance, Corrugated Steel tape Armor.		
5	Fiber cable Diameter Over the Jacket should not be more than 16 mm, Tensile Strength should be ≥3000 Newton and Crush Resistance of the fiber cable should be minimum of 4000 Newton.		
6	The Attenuation shall be 0.34dB/km @ 1310nm, 0.31dB/km @ 1380 - 1386nm and 0.22dB/km @ 1550nm; Cabled Cutoff Wavelength should be maximum: < 1260 nm.		
7	Chromatic Dispersion @ 1310 nm shall be < 3.5 ps/nm x km, Chromatic Dispersion @ 1550 nm shall be < 18 ps/nm x km; Operating Temperature: -20 degree Celsius to +70 degree Celsius; RoHS Compliance.		
8	The cable shall be suitable for Backbone cabling, Campus site cabling and Outdoor Ducts or Direct Burial applications.		

	48/12 Core Single Mode Fiber LIU		
S. No.	**General Specifications**	**Compliance (Yes/No)**	**Submit the Proof Document (Page No)**
1	Shall accommodate 4 coupler plates or 12 pigtail cassettes for a total of 48 fiber terminations.		

2	The width shall be 19 inches Rackmount and height of 1U, with a maximum of 19-inch depth.		
3	The shelf/LIU shall be sliding with Hinged Removable Front Cover to provide open access to the panel.		
4	Shall have splice trays to splice minimum of 48 fibers.		

	Single mode LC Fiber Pigtail for Fiber Optic Panel		
S. No.	**General Specifications**	**Compliance (Yes/No)**	**Submit the Proof Document (Page No)**
1	Shall be Single mode OS2, fiber		
2	Standards Compliance: G.652.D, G.657.A1, and OS2 Regulatory Compliance: RoHS 2011/65/EU		
3	Flame Test Method: IEC 60332-3 / IEC 60754-2 / IEC 61034-2/ IEEE 383 / UL 1666 / UL 1685		
4	Optical Performance: Insertion Loss, maximum 0.34 dB Return Loss, minimum 50.0 dB		
5	Interface, Front: LC		
6	Pigtail Environmental Specifications Environmental Space: Low Smoke Zero Halogen (LSZH)/Riser Operating Temperature: -10 degree Celsius to +60 degree Celsius Optical Components Standard: ANSI/TIA-568-C.3		

	LC–LC Single-mode LSZH Patch Cords		
S. No.	**General Specifications**	**Compliance (Yes/No)**	**Submit the Proof Document (Page No)**
1	Shall be Single mode (OS2), LC to LC, Fiber patch cords.		
2	Standards Compliance: G.652.D, G.657.A1 and OS2 Regulatory Compliance: RoHS 2011/65/EU Jacket: Low Smoke Zero Halogen (LSZH) compliant to IEC 60332-3, IEC 60754-2, IEC 61034-2, IEEE 383, UL 1666, UL 1685 Flame Test Listing: NEC OFNR-LS (ETL) and c(ETL) Cable Qualification Standards: ANSI/ICEA S-83-596 and Telcordia GR-409		

	Optical Components Standard: ANSI/TIA-568-C.3		
3	General Specifications Connector Interface: LC Operating Temperature: -10 degree Celsius to +60 degree Celsius		
4	Connector Optical Performance Insertion Loss, Typical: 0.20 dB Return Loss, minimum: 50.0 dB		

	9/12U wall mount Closed Network Rack with front glass door		
S. No.	**General Specifications**	**Compliance (Yes/No)**	**Submit the Proof Document (Page No)**
1	19 " Rack, 12U wall mount Closed Network Rack with front glass door (lockable, toughened 4mm), 600mm x 600mm Depth, PDU (2U Standard Rack Mount Power Distribution Unit with 6 X Indian Round Pin 5/15A, Inlet Plug Type with MCB tripping), 2 fans at top Mounted, 1 Cantilever shelf, earthing kit with Mounting Accessories.		

	18/24/27/42U Closed Network Rack with front glass door		
S. No.	**General Specifications**	**Compliance (Yes/No)**	**Submit the Proof Document (Page No)**
1	19 " Rack, 27U Closed Network Rack, Floor standing with front glass door (lockable, toughened 4mm), rear steel door, 800mmx800mm castor wheels, 1 Cantilever shelf.		

	PDU (2U Standard Rack Mount Power Distribution Unit with 6 X Indian Round Pin 5/15A, Inlet Plug Type with MCB tripping), 4 fans at top Mounted, earthing kit.		

ANNEXURE-IV

Detailed BoQ

S. No.	Description	Qty	Unit	Remarks
1	UTP Cable CAT 6	115900	Mtr	(305 Mtr. Box)
2	UTP Cable CAT 6 Information Outlet (Single)	4300	Nos.	
3	UTP Cable CAT 6 Patch Cord 3 Feet Blue	1935	Nos.	
4	UTP Cable CAT 6 Patch Cord 3 Feet Yellow	215	Nos.	
5	UTP Cable CAT 6 Patch Cord 15 Feet Blue	30	Nos.	
6	24 Port Unloaded Jack Panel	95	Nos.	
7	Cable Manager	95	Nos.	
8	Face Plate Squire (1 Port)	2150	Nos.	
9	Gang Box (3"X3")	0	Nos.	Provided by IIT Ropar
10	UTP Cable CAT 6A (305 Mtr. Box)	30	Box	
11	UTP Cable CAT 6A Information Outlet (Single)	320	Nos.	
12	UTP Cable CAT 6A Patch Cord 3 Feet Red	160	Nos.	
13	UTP Cable CAT 6A Patch Cord 15 Feet Red	20	Nos.	
14	24 Port Unloaded Jack Panel	22	Nos.	
15	Cable Manager	22	Nos.	
16	Face Plate Squire (1 Port)	160	Nos.	
17	Gang Box (3"X3")	0	Nos.	Provided by IIT Ropar
18	Fiber Optic Outdoor Armored 6 Core (SM)	6000	Mtr.	
19	LIU, 24 Fiber, Rackmount with LC Cupler & Splice tray	10	Nos.	

20	LIU, 14 Fiber, Rackmount with LC Cupler & Splice tray	16	Nos.	
21	Fiber Patchcord LC-LC 3 Mtr	0	Nos.	Provided by IIT Ropar
22	Fiber Patchcord LC-LC 10 Mtr	50	Nos.	
23	Fiber Patchcord LC-SC 3 Mtr	50	Nos.	
24	Fiber Patchcord LC-SC 10 Mtr	50	Nos.	
25	Supply of Duct 25X25 MM	970	Mtr.	
26	Supply of Duct 45X45 MM	100	Mtr.	
27	Supply of Duct 100X50 MM	100	Mtr.	
28	Supply PVC Conduit Pipe 25 MM	3200	Mtr.	
29	Supply PVC Conduit Pipe 50 MM	3700	Mtr.	
30	Supply GI Perforated Tray 300X50 MM	200	Mtr.	
31	Supply of GI Flexible 32 MM	925	Mtr.	
32	Supply of GI Flexible 50 MM	975	Mtr.	
33	19 " Rack, Wall Mount, 600 mm depth, 12 U height, Front glass door (lockable, toughened 4mm), with all accessories	8	Nos.	
34	19 " Rack, Floor standing 800X800 mm 24 U height, Front & back door (lockable), Front glass door(toughened 4mm),	12	Nos.	
35	19 " Rack, Floor standing 800X800 mm 42 U height, Front & back door (lockable), Front glass door(toughened 4mm),	2	Nos.	
B. Installation Items				
S. No.	**Description**	**Qty**	**Unit**	
1	Laying of 6 fiber in GI Flexible/duct / conduit (per meter)	6000	Mtr.	
2	Fusion splicing of SCPC/SCAPC/LCPC/LCAPC type pigtails	540	Core	
3	Performance testing of laid Fiber Optic cable for continuity, length & db loss (OLTS Test report & documentation)	270	Core	
4	Installation of 12/24/48/144 core LIU	26	Nos.	
5	Laying of UTP CAT 6/6A Cable	125050	Mtr.	
6	Installation & Termination of information outlets (including termination of CAT 6A / CAT 6 cable on I/O and Patch Panel	4620	Nos.	
7	Installation of Category 6/6A U/UTP Modular	117	Nos.	

	Panel 1U, 24 port			
8	Installation of Cable Manager	117	Nos.	
9	Installation of the face plate with gang box	2310	Nos.	
10	Performance testing of the laid UTP CAT 6 / CAT 6A /STP cable (Penta scanner report & documentation) (per node)	2310	Nos.	
11	Installation of Duct 25X25 MM	970	Mtr.	
12	Installation of Duct 45X45 MM	100	Mtr.	
13	Installation of Duct 100X50 MM	100	Mtr.	
14	Installation PVC Conduit Pipe 25 MM	3200	Mtr.	
15	Installation PVC Conduit Pipe 50 MM	3700	Mtr.	
16	Installation GI Perforated Tray 300X50 MM	200	Mtr.	
17	Installation of GI Flexible 32 MM	925	Mtr.	
18	Installation of GI Flexible 50 MM	975	Mtr.	
19	Installation of wall mount Rack (9 & 12 U) with all accessories	8	Nos.	
20	Installation of floor mount Rack (24, 32 & 42 U) with all accessories	14	Nos.	
21	Site Certifications and documentations	1	Nos	

ANNEXURE-V

The milestones shall include following:

Sr. No	**Milestone Description**	**Time schedule**
1	Award of Contract /Purchase Order	Day 0.
2	Acceptance of Contract /Purchase Order by selected bidder/SI	Within 2 days from PO date.
3	Delivery of Material: stage-1	Within 4 weeks from the date of PO.
4	Delivery of Material: stage-2	Within 6 weeks from the date of PO.
5	Delivery of Material: stage-3	Within 8 weeks from the date of PO.

6	Completion of entire Project	Within 14 weeks from the date of PO
7	Completing acceptance testing	Within 16 weeks from the date of PO
8	Submission of acceptance testing reports, all project documentation & installation reports	Within 17 weeks from the date of PO.
9	Warranty, support, and maintenance	Warranty for the period of 3 years on the entire supplied material starting from the date of the completion certificate issued by IIT Ropar. Performance Warranty for the period of 20 years on the entire supplied material starting from the date of the completion certificate issued by IIT Ropar.

ANNEXURE-VI

Project Timeline

S No	Locations	Date of Completion	Remarks
STAGE 1			
1	SAB-Tower-A, Approx 730 Nodes	Within 56 days of issuing PO	
STAGE 2			
2	SAB-Tower-B, Approx 570 Nodes	Within 70 days of issuing PO	
STAGE 3			
3	SAB-Tower-C, Approx 800 Nodes	Within 98 days of issuing PO	

ANNEXURE-VII

Delivery, Installation Schedule, and Penalties:

1. **Material Deliveries:** As per Annexure V
2. **Installation:** As per Annexure VI
3. **Storage:** IIT Ropar may provide storage facilities if available otherwise, the bidder should make their own temporary storage facility inside the campus for the storing of the material until installation. The material remains the property of the bidder until it is installed and the site is handed over to IIT Ropar. The bidder is responsible for the security of the material, and in case of any loss due to theft, damage, or natural disaster then the bidder must provide a replacement.

4. **Material Delivery information:** The bidder must inform the IT Section at IIT Ropar at least 48 hours before the arrival of the material at the site. The IT team at IIT Ropar will verify the quantity of materials only after delivery for the sole purpose of monitoring material delivery timelines.

5. **Component Warranty:** All passive components supplied by the bidder should carry a comprehensive warranty for a period of 3 years. The bidder should put in place preventative measures to protect the cables. If the copper cable is damaged by rats within the warranty period, the bidder will be responsible for laying a new cable free of cost. The material will be provided by IIT Ropar.

6. **Warranty Terms:** The starting date of the warranty will be from the date of issue of the completion certificate. The complaints under warranty should be resolved within 48 hours(including public holidays) of notification. A penalty of Rs. 1000 per day will be charged. The bidder must rectify defects without any charges within the warranty period. In case of physical damage, fire, or any other reasons, the warranty is void. The bidder will rectify the fault as per the rate quoted on the tender. IIT Ropar will not pay any amount for fault detection.

7. **Penalty:** A penalty of Rs. 1000 per day will be charged for late delivery and site handing over. IIT Ropar has the right to cancel the purchase order in case the material is not delivered within 60 days of the purchase order date.

8. Scope of Documentation

The bidder should provide IIT Ropar with the following documentation:

i) 5 sets of Hard copies (A0 size) and soft copies (CAD and pdf) in USB pen drive of As-built drawings (both LAN and fiber)
ii) Hard and soft copies of Penta scan OLTS reports should be submitted after completion of work.

iii) Installation reports, including measurements, should have separate indoor and outdoor sections.
iv) Completion certificate will be issued only after the submission of drawings.

9. Payment Terms

1. Payment Terms: 70% of the material value will be paid upon each delivery of the materials.
2. Milestone Payment: Upon successful installation and verification of both materials and services, 90% of the services payment will be released based on the installed materials and services at stagewise.
3. Final Payment: Balance payment for the materials and services, as per actual, will be made upon the completion of the project on the basis of completion certificate provided by the contractor and Verification by The IT Department.

10. Performance Bank Guarantee (PBG): The successful bidder shall be required to deposit a Performance Bank Guarantee equivalent to 10% of Purchase order value as security deposit in shape of Bank Guarantee from any Indian nationalized bank in favour of the Registrar IIT Ropar payable at Rupnagar / Ropar within 10 days of the issue of purchase order / letter of intent.

Section-B

Annexure-I

Eligibility Criteria for bidder (Active component):

1. The Bidder/OEM's qualification will be determined based on their ability to execute this project and provide continuous support. The Bidder/OEM should submit the tender documents with the indexing as mentioned in the criteria shown above with the proof of supporting documents. The sequence with page numbers and bookmarking should be specified. In addition to the supporting documents, an undertaking for the fulfillment of each eligibility criterion should be submitted.

2. The bidder must submit copies of at least 2(two) purchase orders (POs) carried out by the vendor in the last 7 years for similar nature of work in IITs, or other government organizations or Reputed Private Organization. The bidder must also submit a satisfactory completion report from the end user on their letterhead or via email, for each of these POs, along with the tender.

3. The Bidder should have an average annual turnover of Rs. 25.00 Cr in the last 3 years in The Data Networking, Datacenter, Server, Storage, Security (Video Surveillance, Fire Alarm, Access Control, etc), and Audio Visual Solution etc. Bidders to submit audited balance sheet

4. The Bidder should have at least One Project of Rs. 10 Cr in the Data Networking, Datacenter, Server, Storage Solution, etc. Bidders to submit completion certificate.

5. The Bidder should have at least Two Project of Rs. 7 Cr in Networking, Datacenter, Server, Storage Solution, etc. Bidders to submit completion certificate.

6. The Bidder should have at least Three Project of Rs. 5 Cr in networking, Datacenter, Server, Storage Solution, etc. Bidders to submit completion certificate.

7. The Bidder should be ISO 9001 or 27001 Certified. Bidder to submit copies of valid ISO Certificate along with the bid.

8. The proposed MCU must be able to integrate with the existing Video Phones (DX650-k9) and VC devices (DX80).(supporting document on OEM letterhead)

9. The proposed IP phones must be able integrate with the existing EPABX. (supporting document on OEM letterhead)

10. All active components given in the Bill of Quantities (BoQ) should be from a single OEM (Original Equipment Manufacturer) only.

11. Bidders should ensure that the supplied equipment must be able to integrate with existing NMS(UCS-APL-k9) and ISE(SNS-3595-k9).

Annexure-II

Eligibility Criteria for OEM (Active component):

1. Proposed Products (software, firmware, and hardware) must have a comprehensive OEM onsite warranty pack for 5 years on all quoted hardware and software with 24*7*365 TAC support and NDB hardware replacement from the date of installation.
2. The OEM must have local Technical Assistance Centre (TAC) support in India through a toll-free number and Returned Materials Authorization (RMA) depot in India. Where customers can directly log a complaint against any failure. OEM to submit confirmation on letterhead.
3. The OEM of Active components quoted by the bidder should have presence in India from the last ten years ending on the previous day of the last day of submission of tender. OEM incorporation certificate to be submitted
4. Non Malicious code certificate to be submitted on the OEM letterhead.

ANNEXURE-II

Technical Specifications for Active components

Type 1 Access Switch 48 Port POE

S. No.	General Specifications	Compliance (Yes/No)	Under Taking	Submit the Proof Documents
1.1	General Features :			
1.1.1	Switch should be 1U and rack mountable in standard 19" rack.			
1.1.2	Switch should support internal field replaceable unit redundant power supply from day 1.			
1.1.3	Switch should have a minimum 2 GB RAM and 2 GB Flash.			
1.1.4	Switch should have dedicated slot/Ports for modular stacking, in addition to asked uplink ports. Should support for minimum 80 Gbps of stacking throughput with 8 switch in single stack.			
1.2	Performance :			
1.2.1	Switch shall have minimum 176 Gbps of switching fabric and 130 Mpps of forwarding rate.			
1.2.2	Switch shall have minimum 16K MAC Addresses and 250 active VLAN.			
1.2.3	Should support minimum 11K IPv4 routes or more			
1.2.4	Switch shall have 1K or more multicast routes.			
1.2.5	Switch should support at least 16K flow entries or Sflow			
1.2.	Switch should support 128 or more STP			

6	Instances.			
1.2.7	Switch should have 6MB or more packet buffer.			
1.3	Functionality :			
1.3.1	Switch should support IEEE Standards of Ethernet: IEEE 802.1D, 802.1s, 802.1w, 802.1x, 802.3ad, 802.3x, 802.1p, 802.1Q, 802.3, 802.3u, 802.3ab, 802.3z.			
1.3.2	Switch must have functionality like static routing, RIP, PIM, OSPF(1000 routes), VRRP, PBR and QoS features from Day1			
1.3.3	Switch should support network segmentation that overcomes the limitation of VLANs using VXLAN and VRFs.			
1.3.4	Switch shall have 802.1p class of service, marking, classification, policing and shaping and eight egress queues.			
1.3.5	Switch should support management features like SSHv2, SNMPv2c, SNMPv3, NTP, RADIUS and TACACS+ .			
1.3.6	Switch should support IPv6 Binding Integrity Guard/MLD Sooping IPv6, IPv6 Snooping/IPv6 RA Guard, IPv6 DHCP Guard, IPv6 Neighbor Discovery Inspection and IPv6 Source Guard/IPv6 Lockdown.			
1.3.7	Switch should support 802.1x authentication and accounting, IPv4 and IPv6 ACLs and Dynamic VLAN assignment and MACSec-128 on hardware for all ports.			
1.3.8	Switch must have the capabilities to enable automatic configuration of switch ports as devices connect to the switch for the device type.			
1.4	Interface			
1.4.1	Switch shall have 48 nos. 10/100/1000 Base-T PoE ports and additional 4 nos. of 10 uplinks ports.			

1.4.2	All 48 port should support PoE (802.3af) and PoE+ (802.3at) with a PoE power budget of 740 W.			

Type 2 Access Switch 24 Port POE

S. No.	General Specifications	Compliance (Yes/No)	Undertaking	Submit the Proof Documents
1.1	General Features :			
1.1.1	Switch should be 1U and rack mountable in standard 19" rack.			
1.1.2	Switch should support internal field replaceable unit redundant power supply from day 1.			
1.1.3	Switch should have minimum 2 GB RAM and 2 GB Flash.			
1.1.4	Switch should have dedicated slot/Ports for modular stacking, in addition to asked uplink ports. Should support for minimum 80 Gbps of stacking throughput with 8 switch in single stack.			
1.2	Performance :			
1.2.1	Switch shall have minimum 128 Gbps of switching fabric and 95 Mpps of forwarding rate.			
1.2.2	Switch shall have minimum 16K MAC Addresses and 250 active VLAN.			
1.2.3	Should support minimum 11K IPv4 routes or more			
1.2.4	Switch shall have 1K or more multicast routes.			
1.2.5	Switch should support at least 16K flow entries			
1.2.6	Switch should support 128 or more STP Instances.			
1.2.7	Switch should have 6MB or more packet buffer.			
1.3	Functionality :			
1.3.1	Switch should support IEEE Standards of Ethernet: IEEE 802.1D, 802.1s, 802.1w, 802.1x, 802.3ad, 802.3x, 802.1p, 802.1Q, 802.3, 802.3u,			

	802.3ab, 802.3z.			
1.3.2	Switch must have functionality like static routing, RIP, PIM, OSPF(1000 routes), VRRP, PBR and QoS features from Day1			
1.3.3	Switch should support network segmentation that overcomes the limitation of VLANs using VXLAN and VRFs.			
1.3.4	Switch shall have 802.1p class of service, marking, classification, policing and shaping and eight egress queues.			
1.3.5	Switch should support management features like SSHv2, SNMPv2c, SNMPv3, NTP, RADIUS and TACACS+ .			
1.3.6	Switch should support IPv6 Binding Integrity Guard, IPv6 Snooping, IPv6 RA Guard, IPv6 DHCP Guard, IPv6 Neighbor Discovery Inspection and IPv6 Source Guard.			
1.3.7	Switch should support 802.1x authentication and accounting, IPv4 and IPv6 ACLs and Dynamic VLAN assignment and MACSec-128 on hardware for all ports.			
1.3.8	Switch must have the capabilities to enable automatic configuration of switch ports as devices connect to the switch for the device type.			
1.4	Interfaces			
1.4.1	Switch shall have 24 nos. 10/100/1000 Base-T PoE ports and additional 4 nos. of SFP+ uplinks ports.			
1.4.2	All 24 port should support PoE (802.3af) and PoE+ (802.3at) with a PoE power budget of 370 W.			

Type 3 Access Switch 48 Port Non POE

S. No.	**General Specifications**	**Compliance (Yes/No)**	**Under taking**	**Submit the Proof**

				Documents
1.1	General Features :			
1.1.1	Switch should be 1U and rack mountable in standard 19" rack.			
1.1.2	Switch should support internal field replaceable unit redundant power supply from day 1.			
1.1.3	Switch should have minimum 2 GB RAM and 2 GB Flash.			
1.1.4	Switch should have dedicated slot/Ports for modular stacking, in addition to asked uplink ports. Should support for minimum 80 Gbps of stacking throughput with 8 switch in single stack.			
1.2	Performance :			
1.2.1	Switch shall have minimum 176 Gbps of switching fabric and 130 Mpps of forwarding rate.			
1.2.2	Switch shall have minimum 16K MAC Addresses and 250 active VLAN.			
1.2.3	Should support minimum 11K IPv4 routes or more			
1.2.4	Switch shall have 1K or more multicast routes.			
1.2.5	Switch should support at least 16K flow entries			
1.2.6	Switch should support 128 or more STP Instances.			
1.2.7	Switch should have 6MB or more packet buffer.			
1.3	Functionality :			
1.3.1	Switch should support IEEE Standards of Ethernet: IEEE 802.1D, 802.1s, 802.1w, 802.1x, 802.3ad, 802.3x, 802.1p, 802.1Q, 802.3, 802.3u, 802.3ab, 802.3z.			
1.3.2	Switch must have functionality like static routing, RIP, PIM, OSPF(1000 routes), VRRP, PBR and QoS features from Day1			

1.3.3	Switch should support network segmentation that overcomes the limitation of VLANs using VXLAN and VRFs.			
1.3.4	Switch shall have 802.1p class of service, marking, classification, policing and shaping and eight egress queues.			
1.3.5	Switch should support management features like SSHv2, SNMPv2c, SNMPv3, NTP, RADIUS and TACACS+ .			
1.3.6	Switch should support IPv6 Binding Integrity Guard, IPv6 Snooping, IPv6 RA Guard, IPv6 DHCP Guard, IPv6 Neighbor Discovery Inspection and IPv6 Source Guard.			
1.3.7	Switch should support 802.1x authentication and accounting, IPv4 and IPv6 ACLs and Dynamic VLAN assignment and MACSec-128 on hardware for all ports.			
1.3.8	Switch must have the capabilities to enable automatic configuration of switch ports as devices connect to the switch for the device type.			
1.4	Interface			
1.4.1	Switch shall have 48 nos. 10/100/1000 Base-T ports and additional 4 nos. of 10 uplinks ports.			

Type 4 Access Switch 24 Port Non POE

S. No.	**General Specifications**	**Compliance (Yes/No)**	**Undertaking**	**Submit the Proof Documents**
1.1	General Features :			
1.1.1	Switch should be 1U and rack mountable in standard 19" rack.			
1.1.2	Switch should support internal field replaceable unit redundant power supply from day 1.			
1.1.3	Switch should have minimum 2 GB RAM and 2 GB Flash.			

1.1.4	Switch should have dedicated slot/Ports for modular stacking, in addition to asked uplink ports. Should support for minimum 80 Gbps of stacking throughput with 8 switch in single stack.			
1.2	Performance :			
1.2.1	Switch shall have minimum 128 Gbps of switching fabric and 95 Mpps of forwarding rate.			
1.2.2	Switch shall have minimum 16K MAC Addresses and 250 active VLAN.			
1.2.3	Should support minimum 11K IPv4 routes or more			
1.2.4	Switch shall have 1K or more multicast routes.			
1.2.5	Switch should support at least 16K flow entries			
1.2.6	Switch should support 128 or more STP Instances.			
1.2.7	Switch should have 6MB or more packet buffer.			
1.3	Functionality :			
1.3.1	Switch should support IEEE Standards of Ethernet: IEEE 802.1D, 802.1s, 802.1w, 802.1x, 802.3ad, 802.3x, 802.1p, 802.1Q, 802.3, 802.3u, 802.3ab, 802.3z.			
1.3.2	Switch must have functionality like static routing, RIP, PIM, OSPF(1000 routes), VRRP, PBR and QoS features from Day1			
1.3.3	Switch should support network segmentation that overcomes the limitation of VLANs using VXLAN and VRFs.			
1.3.4	Switch shall have 802.1p class of service, marking, classification, policing and shaping and eight egress queues.			
1.3.5	Switch should support management features like SSHv2, SNMPv2c, SNMPv3, NTP, RADIUS and TACACS+ .			
1.3.6	Switch should support IPv6 Binding Integrity Guard, IPv6 Snooping, IPv6 RA Guard, IPv6 DHCP Guard, IPv6 Neighbor Discovery Inspection and IPv6 Source Guard.			

1.3.7	Switch should support 802.1x authentication and accounting, IPv4 and IPv6 ACLs and Dynamic VLAN assignment and MACSec-128 on hardware for all ports.			
1.3.8	Switch must have the capabilities to enable automatic configuration of switch ports as devices connect to the switch for the device type.			
1.4	Interfaces			
1.4.1	Switch shall have 24 nos. 10/100/1000 Base-T ports and additional 4 nos. of SFP+ uplinks ports.			

Type 1 Distribution Switch 12 Port

S.No	48-Port Distribution Switch - Technical Specifications	Compliance (Yes/No)	Undertaking	Submit the Proof Documents
1	General Features :			
a	Switch should have: 12 x 1/10/25G ports			
b	Switch should have minimum 4x40/100G ports, for creating the HA (within the rack) using stacking/virtual stacking. SM Transceivers for 40G uplinks to be provided, cables/transceivers for stacking for a minimum of two distribution switches within each rack to be included with no additional cost in Day1.			
c	Switch shall be 1U and rack mountable in standard 19" rack.			
d	Switch shall have min. 16 GB RAM.			
e	Switch shall have min. 16 flash.			
f	Switch shall have a hot swappable 1:1 redundant internal power supply and redundant fan.			
g	Switch shall support VSS or equivalent features allowing links that are physically connected to two different switches to appear as a single port channel with inter-switch bandwidth of min. 400Gbps			

h	Shall support In Service Software Upgrade (ISSU) or equivalent hitless failover to provide an upgrade of the entire platform or an individual task/process without impacting hardware forwarding.			
i	Switch shall have hot swappable 1:1 redundant internal power supply and redundant fan, on day1			
2	Performance :			
a	Switching system shall have a minimum 1 Tbps of switching fabric and minimum 740 mpps of forwarding rate.			
b	Switching system shall have a minimum 50K MAC Addresses and 4K VLANs.			
c	Switch should support minimum 5K ACLs, 5K Multicast and 30K IPv4, 15K IPv6 Routes..			
d	Switch shall support application visibility and traffic monitoring with minimum 50 K netflow/jflow entries, or with minimum sampling rate of 4096 in case of sflow.			
e	Min. Packet buffer : 30 MB			
f	The device should be IPv6 ready support or logo certified from day one			
3	Functionality :			
a	Should support IEEE Standards of Ethernet: IEEE 802.1D, 802.1s, 802.1w, 802.1x, 802.3ad, 802.1ae (256-bit and 128-bit AES)/VXLAN overlay, 802.3x, 802.1p, 802.1Q, 1588v2/NTP/SNTP			
b	Switch should support routing protocols like BGPv4, OSPF(v2, v3)/ ISISv4, RIP, Static, EVPN, PIM, SSM, BFD, VRF aware BFD, IEEE 802.1ae/VXLAN overlay from day 1 on the same hardware			
c	Shall have 802.1p class of service, marking, classification, policing and shaping. Should support strict priority queuing.			

d	Switch should support API Driven configuration and support Netconf and Restconf using YANG data model. It should support automation tool like python			
e	Switch should support port security/DHCP snooping/first hop security/Spanning tree root guard or equivalent.			
f	IPv6 support in hardware, providing wire rate forwarding for IPv6 network			
g	Should support 802.1x authentication and accounting, IPv4 and IPv6 ACLs and Dynamic VLAN assignment.			
h	Eight egress queues per port for different types.			
i	During system boots or OS upgrades, the system's software should be checked for integrity.			
j	Switch should support management features like SSHv2, SNMPv2c, SNMPv3, NTP, RADIUS and TACACS+, SSL/SSH, SFTP			
k	Switch OS should support programmability through REST APIs and Python scripting or equivalent			
4	Security			
a	Switch should support for sending logs to multiple centralised syslog server for monitoring and audit trail			
b	Protection from unnecessary or DoS traffic by using storm control functions for unicast/multicast/broadcast.			
c	Storm control (multicast, and broadcast)			
d	Dynamic Host Configuration Protocol (DHCP) snooping or Equivalent			
e	BPDU Protection or Equivalent			
f	STP Root Protection/Equivalent			
g	Dynamic ARP Inspection/VXLAN ARP/ND suppression			

Type 2 Distribution Switch 24 Port

S.No	48-Port Distribution Switch - Technical Specifications	Compliance (Yes/No)	Undertaking	Submit the Proof Documents
1	General Features :			
a	Switch should have: 24 x 1/10/25G ports			
b	Switch should have minimum 4x40/100G ports, for creating the HA (within the rack) using stacking/virtual stacking. SM Transceivers for 40G uplinks to be provided, cables/transceivers for stacking for a minimum of two distribution switches within each rack to be included with no additional cost in Day1.			
c	Switch shall be 1U and rack mountable in standard 19" rack.			
d	Switch shall have min. 16 GB RAM.			
e	Switch shall have min. 16 flash.			
f	Switch shall have a hot swappable 1:1 redundant internal power supply and redundant fan.			
g	Switch shall support VSS or equivalent features allowing links that are physically connected to two different switches to appear as a single port channel with inter-switch bandwidth of min. 400Gbps			
h	Shall support In Service Software Upgrade (ISSU) or equivalent hitless failover to provide an upgrade of the entire platform or an individual task/process without impacting hardware forwarding.			
i	Switch shall have hot swappable 1:1 redundant internal power supply and redundant fan, on day1			

2	Performance :			
a	Switching system shall have a minimum 2 Tbps of switching fabric and minimum 1Bpps of forwarding rate.			
b	Switching system shall have a minimum 50K MAC Addresses and 4K VLANs.			
c	Switch should support minimum 5K ACLs, 5K Multicast and 30K IPv4, 15K IPv6 Routes..			
d	Switch shall support application visibility and traffic monitoring with minimum 50 K netflow/jflow entries, or with minimum sampling rate of 4096 in case of sflow.			
e	Min. Packet buffer : 30 MB			
f	The device should be IPv6 ready support or logo certified from day one			
3	Functionality :			
a	Should support IEEE Standards of Ethernet: IEEE 802.1D, 802.1s, 802.1w, 802.1x, 802.3ad, 802.1ae (256-bit and 128-bit AES)/VXLAN overlay, 802.3x, 802.1p, 802.1Q, 1588v2/NTP/SNTP			
b	Switch should support routing protocols like BGPv4, OSPF(v2, v3)/ ISISv4, RIP, Static, EVPN, PIM, SSM, BFD, VRF aware BFD, IEEE 802.1ae/VXLAN overlay from day 1 on the same hardware			
c	Shall have 802.1p class of service, marking, classification, policing and shaping. Should support strict priority queuing.			
d	Switch should support API Driven configuration and support Netconf and Restconf using YANG data model. It should support automation tool like python			
e	Switch should support port security/DHCP snooping/first hop security/Spanning tree root guard or equivalent.			
f	IPv6 support in hardware, providing wire rate forwarding for IPv6 network			

g	Should support 802.1x authentication and accounting, IPv4 and IPv6 ACLs and Dynamic VLAN assignment.			
h	Eight egress queues per port for different types.			
i	During system boots or OS upgrades, the system's software should be checked for integrity.			
j	Switch should support management features like SSHv2, SNMPv2c, SNMPv3, NTP, RADIUS and TACACS+, SSL/SSH, SFTP			
k	Switch OS should support programmability through REST APIs and Python scripting or equivalent			
4	Security			
a	Switch should support for sending logs to multiple centralised syslog server for monitoring and audit trail			
b	Protection from unnecessary or DoS traffic by using storm control functions for unicast/multicast/broadcast.			
c	Storm control (multicast, and broadcast)			
d	Dynamic Host Configuration Protocol (DHCP) snooping or Equivalent			
e	BPDU Protection or Equivalent			
f	STP Root Protection/Equivalent			
g	Dynamic ARP Inspection/VXLAN ARP/ND suppression			

Type 3 Distribution Switch 48 Port

S.No	**48-Port Distribution Switch - Technical Specifications**	**Compliance (Yes/No)**	**Undertaking**	**Submit the Proof Documents**
1	General Features :			
a	Switch should have: 48 x 1/10/25G ports			
b	Switch should have minimum 4x40/100G ports, for creating the HA (within the rack) using			

	stacking/virtual stacking. SM Transceivers for 40G uplinks to be provided, cables/transceivers for stacking for a minimum of two distribution switches within each rack to be included with no additional cost in Day1.			
c	Switch shall be 1U and rack mountable in standard 19" rack.			
d	Switch shall have min. 16 GB RAM.			
e	Switch shall have min. 16 flash.			
f	Switch shall have a hot swappable 1:1 redundant internal power supply and redundant fan.			
g	Switch shall support VSS or equivalent features allowing links that are physically connected to two different switches to appear as a single port channel with inter-switch bandwidth of min. 400Gbps			
h	Shall support In Service Software Upgrade (ISSU) or equivalent hitless failover to provide an upgrade of the entire platform or an individual task/process without impacting hardware forwarding.			
i	Switch shall have hot swappable 1:1 redundant internal power supply and redundant fan, on day1			
2	Performance :			
a	Switching system shall have a minimum 2 Tbps of switching fabric and minimum 1Bpps of forwarding rate.			
b	Switching system shall have a minimum 50K MAC Addresses and 4K VLANs.			
c	Switch should support minimum 5K ACLs, 5K Multicast and 30K IPv4, 15K IPv6 Routes..			
d	Switch shall support application visibility and traffic monitoring with minimum 50 K netflow/jflow entries, or with minimum sampling rate of 4096 in case of sflow.			
e	Min. Packet buffer : 30 MB			

f	The device should be IPv6 ready support or logo certified from day one			
3	Functionality :			
a	Should support IEEE Standards of Ethernet: IEEE 802.1D, 802.1s, 802.1w, 802.1x, 802.3ad, 802.1ae (256-bit and 128-bit AES)/VXLAN overlay, 802.3x, 802.1p, 802.1Q, 1588v2/NTP/SNTP			
b	Switch should support routing protocols like BGPv4, OSPF(v2, v3)/ ISISv4, RIP, Static, EVPN, PIM, SSM, BFD, VRF aware BFD, IEEE 802.1ae/VXLAN overlay from day 1 on the same hardware			
c	Shall have 802.1p class of service, marking, classification, policing and shaping. Should support strict priority queuing.			
d	Switch should support API Driven configuration and support Netconf and Restconf using YANG data model. It should support automation tool like python			
e	Switch should support port security/DHCP snooping/first hop security/Spanning tree root guard or equivalent.			
f	IPv6 support in hardware, providing wire rate forwarding for IPv6 network			
g	Should support 802.1x authentication and accounting, IPv4 and IPv6 ACLs and Dynamic VLAN assignment.			
h	Eight egress queues per port for different types.			
i	During system boots or OS upgrades, the system's software should be checked for integrity.			
j	Switch should support management features like SSHv2, SNMPv2c, SNMPv3, NTP, RADIUS and TACACS+, SSL/SSH, SFTP			
k	Switch OS should support programmability through REST APIs and Python scripting or equivalent			

4	Security			
a	Switch should support for sending logs to multiple centralised syslog server for monitoring and audit trail			
b	Protection from unnecessary or DoS traffic by using storm control functions for unicast/multicast/broadcast.			
c	Storm control (multicast, and broadcast)			
d	Dynamic Host Configuration Protocol (DHCP) snooping or Equivalent			
e	BPDU Protection or Equivalent			
f	STP Root Protection/Equivalent			
g	Dynamic ARP Inspection/VXLAN ARP/ND suppression			

Type 1 Access Switch 24 MultiGig (8xmGig, 16x1G) POE

S. No.	General Specifications	Compliance (Yes/No)	Under taking	Submit the Proof Documents
1.1	General Features :			
1.1.1	Switch should be 1U and rack mountable in standard 19" rack.			
1.1.2	Switch should support internal field replaceable unit redundant power supply from day 1.			
1.1.3	Switch should have minimum 2 GB RAM and 2 GB Flash.			
1.1.4	Switch should have dedicated slot/Ports for modular stacking, in addition to asked uplink ports. Should support for minimum 80 Gbps of stacking throughput with 8 switch in single stack.			
1.2	Performance :			
1.2.1	Switch shall have minimum 272 Gbps of switching fabric and 214 Mpps of forwarding rate.			
1.2.2	Switch shall have minimum 16K MAC Addresses			

	and 250 active VLAN.			
1.2.3	Should support minimum 11K IPv4 routes or more			
1.2.4	Switch shall have 1K or more multicast routes.			
1.2.5	Switch should support at least 16K flow entries			
1.2.6	Switch should support 128 or more STP Instances.			
1.2.7	Switch should have 6MB or more packet buffer.			
1.3	Functionality :			
1.3.1	Switch should support IEEE Standards of Ethernet: IEEE 802.1D, 802.1s, 802.1w, 802.1x, 802.3ad, 802.3x, 802.1p, 802.1Q, 802.3, 802.3u, 802.3ab, 802.3z.			
1.3.2	Switch must have functionality like static routing, RIP, PIM, OSPF(1000 routes), VRRP, PBR and QoS features from Day1			
1.3.3	Switch should support network segmentation that overcomes the limitation of VLANs using VXLAN and VRFs.			
1.3.4	Switch shall have 802.1p class of service, marking, classification, policing and shaping and eight egress queues.			
1.3.5	Switch should support management features like SSHv2, SNMPv2c, SNMPv3, NTP, RADIUS and TACACS+ .			
1.3.6	Switch should support IPv6 Binding Integrity Guard, IPv6 Snooping, IPv6 RA Guard, IPv6 DHCP Guard, IPv6 Neighbor Discovery Inspection and IPv6 Source Guard.			
1.3.7	Switch should support 802.1x authentication and accounting, IPv4 and IPv6 ACLs and Dynamic VLAN assignment and MACSec-128 on hardware for all ports.			
1.3.8	Switch must have the capabilities to enable automatic configuration of switch ports as devices connect to the switch for the device type.			

1.4	Interfaces			
1.4.1	Switch shall have 16 nos. 10/100/1000 Base-T ports and additional 8 nos port port supporting 100MB/1G/2.5G/5G Additional 4 nos. of SFP+ uplinks ports.			
1.4.2	All 24 port should support PoE (802.3af) and PoE+ (802.3at) with a PoE power budget of 370W.			

Type 2 Access Switch 48 MultiGig (12xmGig, 36x1G) POE

S. No.	General Specifications	Compliance (Yes/No)	Under taking	Submit the Proof Documents
1.1	General Features :			
1.1.1	Switch should be 1U and rack mountable in standard 19" rack.			
1.1.2	Switch should support internal field replaceable unit redundant power supply from day 1.			
1.1.3	Switch should have minimum 2 GB RAM and 2 GB Flash.			
1.1.4	Switch should have dedicated slot/Ports for modular stacking, in addition to asked uplink ports. Should support for minimum 80 Gbps of stacking throughput with 8 switch in single stack.			
1.2	Performance :			
1.2.1	Switch shall have minimum 392 Gbps of switching fabric and 291 Mpps of forwarding rate.			
1.2.2	Switch shall have minimum 16K MAC Addresses and 250 active VLAN.			
1.2.3	Should support minimum 11K IPv4 routes or more			
1.2.4	Switch shall have 1K or more multicast routes.			
1.2.5	Switch should support at least 16K flow entries			

1.2.6	Switch should support 128 or more STP Instances.			
1.2.7	Switch should have 6MB or more packet buffer.			
1.3	Functionality :			
1.3.1	Switch should support IEEE Standards of Ethernet: IEEE 802.1D, 802.1s, 802.1w, 802.1x, 802.3ad, 802.3x, 802.1p, 802.1Q, 802.3, 802.3u, 802.3ab, 802.3z.			
1.3.2	Switch must have functionality like static routing, RIP, PIM, OSPF(1000 routes), VRRP, PBR and QoS features from Day1			
1.3.3	Switch should support network segmentation that overcomes the limitation of VLANs using VXLAN and VRFs.			
1.3.4	Switch shall have 802.1p class of service, marking, classification, policing and shaping and eight egress queues.			
1.3.5	Switch should support management features like SSHv2, SNMPv2c, SNMPv3, NTP, RADIUS and TACACS+ .			
1.3.6	Switch should support IPv6 Binding Integrity Guard, IPv6 Snooping, IPv6 RA Guard, IPv6 DHCP Guard, IPv6 Neighbor Discovery Inspection and IPv6 Source Guard.			
1.3.7	Switch should support 802.1x authentication and accounting, IPv4 and IPv6 ACLs and Dynamic VLAN assignment and MACSec-128 on hardware for all ports.			
1.3.8	Switch must have the capabilities to enable automatic configuration of switch ports as devices connect to the switch for the device type.			
1.4	Interface			
1.4.1	Switch shall have 36 nos. 10/100/1000 Base-T ports and additional 12 nos port port supporting 100MB/1G/2.5G/5G/10G Additional 4 nos. of 10 uplinks ports.			

1.4.2	All 48 port should support PoE (802.3af) and PoE+ (802.3at) with a PoE power budget of 740W.			

Type 1 Access Point Indoor (Internal Antenna) For Buildings

Sr. No.	Specification	Compliance (Yes/No)	Under taking	Submit the Proof Documents
1	Access Point shall support 4x4 MIMO on both radio interfaces			
2	Access Point shall be able to powered up using PoE (.af)			
3	Access Point shall support assurance, packet capture, RF sensing capabilities			
4	Access Point shall support application visibility and control			
5	Access Point or solution shall support encrypted traffic visibility			
6	Access Point should have Bluetooth5 radio to support use cases of location, asset tracking and analytics.			
7	Access Point shall ship with metal-based mounting bracket for durability and reliability			
8	Access Point shall support Console port that uses Standard Port (RJ-45) type connection			
9	Access Point should have 1x 100, 1000, 2500 Multigigabit Ethernet (RJ-45) – IEEE 802.3bz			
10	Access Point should have USB port for future requirements.			
11	Must have at least 3 dBi Antenna gain on each radios			
12	Must Support data rate upto 5gbps.			
13	Must support minimum of 23dbm of transmit power in both 2.4Ghz and 5Ghz radios. And			

	should follow the local regulatory Norms.			
14	Must support AP enforced load-balance between 2.4Ghz and 5Ghz band.			
15	Must incorporate radio resource management for power, channel and performance optimization			
16	Must have -96 dB or better Receiver Sensitivity.			
17	Must support Proactive Key Caching and/or other methods for Fast Secure Roaming.			
18	Must support Management Frame Protection.			
19	Should support locally-significant certificates on the APs using a Public Key Infrastructure (PKI).			
20	Must support the ability to serve clients and monitor the RF environment concurrently.			
21	Same model AP that serves clients must be able to be dedicated to monitoring the RF environment.			
22	Must be plenum-rated (UL2043).			
23	Must support 16 WLANs per AP for SSID deployment flexibility.			
24	Access Point Must continue serving clients when link to controller is down. It should also have option to authenticate user through Radius server directly from Access Point during link unavailability to controller.			
25	Must support telnet and/or SSH login to APs directly for troubleshooting flexibility.			
26	802.11e and WMM			
27	Must support QoS and Video Call Admission Control capabilities.			
28	Access point should be wifi 6 certified.			

Type 2 Access Point Indoor (Internal Antenna) For Auditorium

WiFi AP 4x4 on both radios High Capacity				
S.No	**WiFi6 AP 4x4 on dual radio - Technical Specifications**	**Compliance (Yes/No)**	**Under taking**	**Submit the Proof Document**

				s
1	Access Point shall support 4X4 MIMO on 2.4GHz, 4X4 MIMO on 5GHz			
2	Access Point shall be able to powered up using PoE/PoE+/UPoE (.af/.at/.bt)			
3	Access Point shall support assurance, packet capture, RF sensing capabilities			
4	Access Point shall support application visibility and control			
5	Access Point shall support encrypted traffic visibility			
6	Access Point should have BLE radio/Zigbee to support use cases of location, asset tracking and analytics, from Day1.			
7	Access Point shall be able to leverage current Access Point mount kit/cable conduit			
8	Access Point shall have dedicated radio/chipset for spectrum monitoring capabilities, WIPS and off channel RRM without compromising and using the client serving radios.			
9	If required, Access Point should support dual 5Ghz mode for high density scenarios.			
10	Access Point shall provide console based connectivity that uses standard interfaces such as RJ45/serial USB connection/special SSID for initial config and during disconnected network situations. If serial USB connection is supported by the AP model (10nos of min 3ft serial USB cable to be provided at no extra cost).			
11	Access Point should have 1 x 1Gbps, 2.5Gbps Multigigabit Ethernet (RJ45).			
12	Access Point should have a USB port for future requirements.			
13	Must Support min. PHY data rate upto 5Gbps or more			

14	Must support a minimum of 23dBm of transmit power in both 2.4Ghz and 5Ghz radios. And should follow the local regulatory Norms.			
15	Must support AP enforced load-balance between 2.4Ghz and 5Ghz band.			
16	Must incorporate radio resource management for power, channel and performance optimization			
17	Must have -96 dB or better receiver sensitivity.			
18	Must support Proactive Key Caching and/or other methods for Fast Secure Roaming.			
19	Must support Management Frame Protection.			
20	Must support the ability to serve clients and monitor the RF environment concurrently.			
21	Same model AP that serves clients must be able to be dedicated to monitoring the RF environment.			
22	Must be plenum-rated (UL2043).			
23	The solution should have high availability of controllers to avoid the single point of failure. In case both controllers fail, APs should have the capability to serve the clients by converting them to FAT/IAP/Bridge mode automatically or with manual configuration changes.			
24	Must support telnet and/or SSH login to APs directly for troubleshooting flexibility.			
25	802.11e and WMM			
26	Must support QoS and Video Call Admission Control capabilities.			
27	Access point should be WiFi 6 certified.			
28	Must support downlink and uplink OFDMA			
29	Must support TWT & BSS coloring			
30	Peak integrated antenna gain of minimum 4dBi on 2.4GHz, and minimum 5dBi on 5GHz			

Type 3 Access Point Indoor (Interna Antenna) For Buildings

WiFi AP 4x4 on both radios High Capacity		

S.No	WiFi6 AP 4x4 on dual radio - Technical Specifications	Compliance (Yes/No)	Under taking	Submit the Proof Documents
1	Access Point shall support 4X4 MIMO on 2.4GHz, 4X4 MIMO on 5GHz			
2	Access Point shall be able to powered up using PoE/PoE+/UPoE (.af/.at/.bt)			
3	Access Point shall support assurance, packet capture, RF sensing capabilities			
4	Access Point shall support application visibility and control			
5	Access Point shall support encrypted traffic visibility			
6	Access Point should have BLE radio/Zigbee to support use cases of location, asset tracking and analytics, from Day1.			
7	Access Point shall be able to leverage current Access Point mount kit/cable conduit			
8	Access Point shall have dedicated radio/chipset for spectrum monitoring capabilities, WIPS and off channel RRM without compromising and using the client serving radios.			
9	If required, Access Point should support dual 5Ghz mode for high density scenarios.			
10	Access Point shall provide console based connectivity that uses standard interfaces such as RJ45/serial USB connection/special SSID for initial config and during disconnected network situations. If serial USB connection is supported by the AP model (10nos of min 3ft serial USB cable to be provided at no extra cost).			
11	Access Point should have 1 x 1Gbps, 2.5Gbps Multigigabit Ethernet (RJ45).			
12	Access Point should have a USB port for future requirements.			
13	Must Support min. PHY data rate upto 5Gbps or more			

14	Must support a minimum of 23dBm of transmit power in both 2.4Ghz and 5Ghz radios. And should follow the local regulatory Norms.			
15	Must support AP enforced load-balance between 2.4Ghz and 5Ghz band.			
16	Must incorporate radio resource management for power, channel and performance optimization			
17	Must have -96 dB or better receiver sensitivity.			
18	Must support Proactive Key Caching and/or other methods for Fast Secure Roaming.			
19	Must support Management Frame Protection.			
20	Must support the ability to serve clients and monitor the RF environment concurrently.			
21	Same model AP that serves clients must be able to be dedicated to monitoring the RF environment.			
22	Must be plenum-rated (UL2043).			
23	The solution should have high availability of controllers to avoid the single point of failure. In case both controllers fail, APs should have the capability to serve the clients by converting them to FAT/IAP/Bridge mode automatically or with manual configuration changes.			
24	Must support telnet and/or SSH login to APs directly for troubleshooting flexibility.			
25	802.11e and WMM			
26	Must support QoS and Video Call Admission Control capabilities.			
27	Access point should be WiFi 6 certified.			
28	Must support downlink and uplink OFDMA			
29	Must support TWT & BSS coloring			
30	Peak integrated antenna gain of minimum 4dBi on 2.4GHz, and minimum 5dBi on 5GHz			

Wireless Controller

S.No	**WLC Technical Specifications**	**Compliance (Yes/No)**	**Under taking**	**Submit the Proof**

				Documents
1	AP should be able to tunnel traffic to remote location to WLC/tunnel aggregator device using protocols like VxLAN/EoGRE/L2TP/capwap/GRE			
2	Proposed WLC should be an on premise HW appliance based solution. No VM based solutions are accepted.			
3	Support for new Wi-Fi 6 (802.11ax), WPA3 and Enhanced Open and existing standards			
4	WLC should have capability to host 2000 APs from day 1.			
5	WLC should support 30K or more clients			
6	WLC/ WLAN Tunnel aggregator devices should have 4 nos of 1/10G SFP+ to connect to LAN			
7	Should support multiple redundancy models like 1+1. On Premise WLC Must support 1+1 or N+1 redundancy			
8	WLC Must support an ability to dynamically adjust channel, power settings and airtime, based on the RF environment. Radio coverage algorithm must allow adjacent WAPs to operate on different channels, in order to maximize available bandwidth and avoid interference.			
9	Wireless Controller should support Access Control based on Identity/Role/ Device/Time or Application.			
10	WLC should have 4K VLANs			
11	should supports IPSec/SSL encryption standards			
12	Should support coverage hole detection and correction that can be adjusted on a per WLAN basis.			
13	Should support RF Management with 20, 40, 80 & 160 MHz channels			
14	Should support Access Control Lists (ACLs).			
15	Should support built-in /URL redirection for web authentication			

16	Should be able to set a maximum per-user bandwidth limit on a per-SSID basis.			
17	Should provide Mesh capability for Mesh supported AP			
18	Must support client roaming as per IEEE standard 802.11r or WLC/APs across layer3 routed boundaries			
19	Should support spectrum analysis and be able to classify different types of interference.			
20	Should provide multiple real-time charts/log showing interferers per access point, on a per-radio, per-channel basis.			
21	System should provide real-time troubleshooting and visualization. Any specialized hardware and software required for the same should be provided by the vendor.			
22	WLC should support Application Visibility and Control (AVC).			
23	Support for configuring media streams with different priority to identify specific video streams for preferential QoS treatment.			
24	To deliver optimal bandwidth usage, reliable multicast must use a single session between AP and Wireless Controller.			
25	Should support IPv4 & IPv6.			
26	For smooth, seamless and easy manageability, operation, interoperability and maintenance, the bidder should offer/quote WLC & WAPs of the same make (OEM).			
27	Solution should support application visibility and control (applications like Social Media, Video Streaming , Video Conferencing apps,etc)			
28	The solution should detect and automatically prevent all types of Rogue (unauthorized APs connected to the network) APs.			
29	WLC should support complete WIPS/WIDS support, via integrated or through external appliance			

30	The solution to support automatic packet capture in the event of a client failure or anomalous events.			
31	The WLAN solution should provide an easy GUI view dashboard to use all the settings, configuration, logs, topology view, etc.,			
32	The solution should highlight client connection failures during association, authentication and network entry.			
33	The Solution shall support Hitless/rolling, AP upgrade feature.			
34	The solution must be able to detect and automatically prevent any ad hoc network/ all Wi-Fi enabled devices such as smartphones bridging / ICS when connected to the network			
35	The solution must support WPA3 - enterprise 192 bit encryption through WLC, if not available on APs.			

Core Switch Chassis

S. No.	General Specifications	Compliance (Yes/No)	Under taking	Submit the Proof Documents
1.1	General Features & Performance:			
1.1.1	Chassis based switch with at least 4 payload slots and additional two slot to accommodate two nos. of switch processor.			
1.1.2	The proposed switch will have redundant CPUs from day-1. Should support Non-Stop Forwarding and Stateful Switchover to ensure information between supervisor engines are fully to allow the standby supervisor engine to take over in sub second time if			

	the primary supervisor fails.			
1.1.3	Switch should have non-blocking per-slot throughput from day 1.			
1.1.4	Shall support In Service Software Upgrade (ISSU) or Hit less update to provide an upgrade of the entire chassis or an individual task/process without impacting hardware forwarding			
1.1.5	Switch should have redundant power supply from day 1.			
1.1.6	Shall support Single Operating System binary image for all switch models proposed as part of the design.			
1.1.7	Switch should support field replaceable components such as Supervisor, Line cards, Power-supply and Fan trays.			
1.1.8	Platform should be SDN ready from day 1.			
1.1.9	Should have 16 GB DRAM and 16 GB Flash with optional SSD to host 3rd party container-based application.			
1.1.10	The switch should support up to 8 Tbps switching capacity.			
1.1.11	The switch should support minimum 3 Bpps.			
1.1.12	IPv4 Routing entry support: 200K			
1.1.13	IPv6 Routing entry support: 200K			
1.1.14	Multicast Routing entry support: 32K			
1.1.15	MAC addresses support: 64K			
1.1.16	VLANs ID: 4K			
1.1.17	ACL & QOS entry support (20K Security ACL & 16K QOS ACL)			
1.1.18	Packet buffer: 100 MB and HW should ready to support higher if required.			

1.1.19	The device should be IPv6 ready from day one			
1.1.20	Must support BGP, MPLS, IS-IS, VRF, VXLAN, OSPF Routed Access, Policy-Based Routing (PBR),			
	PIM SM, and Virtual Router Redundancy Protocol (VRRP) from Day 1			
1.1.21	STP, PVLAN, First Hop Security, Link Aggregation Protocol (LACP)			
1.1.22	STP, Trunking, Private VLAN (PVLAN), Q-in-Q, Shaped Round Robin (SRR) scheduling, Committed Information Rate (CIR), and eight egress queues per port			
1.1.23	Should have AES-256 support with MACSEC-256 encryption algorithm on hardware.			
1.1.24	During system boots, the system's software signatures should be checked for integrity. System should capable to understand that system OS are authentic and unmodified, it should have cryptographically signed images to provide assurance that the firmware & BIOS are authentic.			
1.1.25	OS should have support for Management automation via Netconf /Yang or equivalent			
1.1.26	Should support Streaming Telemetry, Netflow /Sflow/Jflow, SPAN, RSPAN or equivalent			
1.2	Interface			
1.2.1	The Switch will be populated with:			
	1. 24x40G Ports 2. 48x25GE/10GE/1GEPorts			
1.2.2	1 x Console port			
1.3	Scalability:			
1.3.1	Chassis should be ready to support 400G ports, if required.			

Type 1 IP Phone

S. No	Description	Compliance (Yes/No)	Under taking	Submit the Proof Documents
1	The phone should support Power over Ethernet IEEE 802.3af class 1/2/3 and should also have AC power adapter option			
2	Should feature a LCD display of at least 3.5” for information such as calling party name, calling party number, and digits dialled to be displayed.			
3	The phone should have two ethernet ports of at least 10/100/1000 BASE-T Ethernet ports, one for the LAN connection and the other for connecting to PC/laptop.			
4	Corporate directory and Lightweight Directory Access Protocol (LDAP) integration.			
5	Ready access to missed, received or placed calls (plus intercom history and directories).			
6	The phone should support QoS mechanism through 802.1p/q.			
7	IP address Assignment by DHCP or statically configured			
8	Hands-free operation with full-duplex speaker-phone			
9	The phone should be a SIP based Phone i.e session Initiation protocol (SIP) supported			
10	The phone should support XML based services and applications.			
11	The phone should have a distinct LED indicator for message waiting.			
12	Should have keys for specific functionalities such as – voicemail, directories, settings, transfer, speakerphone, mute on/off, headset etc			
13	Media Encryption (SRTP) using AES			
14	Signalling Encryption (TLS) using AES			

15	Should support 802.1x			
16	Encryption of Configuration Files			
17	The phone should have the ability to register to call control server over an internet link with or without VPN.			
18	The phone should support IPv4 and IPv6 from day1.			
19	The phone should support at least 100 entries for call history i.e. missed, received, placed etc.			
20	It should support the following codecs: G.711a/µ-law, G.722, G.729a, iLBC			
21	The phone should have RJ9 headset port to connect any standards based headset. The phone should also have a separate headset key			
22	The phone also includes the following settings - Display contrast, Ring type, Network configuration, Call status			
23	The Phone should support the ability to provide different ringtones for internal and external calls.			
24	Should have volume control button for easy volume adjustments for the speakerphone, handset and ringer.			
25	The phone should support mounting against a wall			
26	The phone should support 4 programmable lines keys.			

27	The phone should the following features: i. Call forward ii. Call pickup iii. Call waiting iv. Extension Mobility v. Auto answer vi. Message waiting indicator vii. Music on hold viii. Forced Authorization Code (Account Code/FAC) ix. Conference x. Music on Hold (MoH) xi. Corporate directory xii. Auto-detection of headset xiii. Busy Lamp Field (BLF) xiv. Callback xv. Immediate Divert			

S No	General Specifications	Compliance (Yes/No)	Under Taking	Submit the Proof Documents
1	The MCU should be running on an appliance. The hardware, software and virtualization software should be supplied and supported by a single OEM.			
2	All necessary hardware to support the required capacity needs to be supplied from day one. Each of the servers supplied for the MCU must have a redundant power supply from day1.			
3	The MCU must also support Full HD mode and it must provide a capacity of connecting at least 45 sites @1080p30 fps day one			

4	The same MCU should also be configured to support 90 sites at HD 720p30fps day one			
5	The MCU must be able to host at least 5 simultaneous conferences each having different capacities restricted by the maximum port capacity of the MCU			
6	Additionally, MCU should support at least 30 Personal Meeting Rooms, which can be assigned to officials for their meetings.			
7	MCU should be capable of supporting participants using various means i.e. via video enabled phones, room based video endpoints, soft clients on mobile/tablet or via the browser using WebRTC compatible browsers in a single conference. The meeting quality has to be consistent and of high quality. The end points can be present on the WAN network or on the internet. In case additional components are required for this functionality, all additional components required to have this functionality has to be included in the solution			
8	The MCU should have the capability to host meetings with internal and external participants in a secure way such that it should co-exist with the enterprise security policies			
9	The MCU solution should support H323 and SIP protocols.			

10	The MCU must support the concept of virtual meeting rooms to users who Hosts meeting frequently. Such meeting rooms should support dialing in from standard based video end points, internal and external users and browser based clients. The system should allow one Virtual meeting room per employee, however it should not consume resources when not in use.			
11	The MCU should be able to maintain the dynamic resource allocation capacity for 1080p, 720p and SD participants simultaneously without having to reboot or change any configuration.			
12	The MCU should support 110 ports or more at HD 720p (transmit and receive) up to 4Mbps on IP in continuous presence mode with 30fps, 200 audio ports, 100 WebRTC connections and H.264 resolution and AES encryption on the same MCU.			
13	The MCU should have Chat Functionality for WebRTC Users during Meeting			
14	The MCU should display a security icon on the endpoint if the conference is secure.			
15	The administrator should be able to specify maximum resolution for main video and content.			

16	Video conferencing endpoints deployed at other organization must be able to take part in video conferencing. The endpoints can be of various makes such as Polycom, Cisco, LifeSize etc using open standards.			
17	Interoperability with all organization must be possible using standards based dialing methodology using the Internet.			
18	The MCU should be able to integrate with Call Control system using SIP.			
19	Should support H.263/H.263+/H.263++, H.264 video algorithms			
20	Should support video resolution from SD to Full HD to join into a conference			
21	The proposed MCU should be able to combine HD and SD in the same conference without degrading the HD resolution from and to the HD endpoints. The MCU shall interoperate with multiple vendors' endpoints. The supported mediums should be IPv4 and IPv6.			
22	Along with the support for basic algorithms like G.711 and G.722.1 the MCU should also support wideband Audio protocols like MPEG 4 AAC - LC and MPEG 4 AAC - LD			
23	The MCU should support transcoding of different Audio/video Protocols.			

24	MCU should be able to combine HD and SD in the same conference without degrading the HD resolution from and to the HD endpoints.			
25	The MCU should have H.239/BFCP protocol for sending and receiving dual video streams (Presenter + Presentation).			
26	At least 25 sites to be seen simultaneously on the screen in traditional Continuous Presence mode.			
27	The MCU must also support advanced continuous presence such that the site that is "on-air" to be seen on a larger window and the other sites are seen in smaller quadrants.			
28	The MCU must be a secure Non-PC Hardware with a strong operating system. The Hardware and software must be from the same OEM.			
29	The MCU should support 128 Bit strong AES encryption for calls and H.235 for authentication			
30	The MCU must support encryption for calls on SIP.			
31	At least 1 LAN /Ethernet--10/100/1000 Mbps full duplex and dedicated serial/USB connection for maintenance/upgrade.			

32	End to End Dolution, Including MCU, Call Control, Firewall Traversal, Desktop/Mobile Clients and WebRTC Solution should be IPv4 and IPv6 complied day one			
33	MCU Solution should support minimum of 8 layouts			
34	The MCU should have Customised Layout option. Adminsitators can create their own customised layout as per requirement with upto max 25 sites on screen.			
35	Should support firewall traversal solution for Business to Business (B2B) Video Calling.			

ANNEXURE-IV

BoQ

	PART-A	
S.No	**Description**	**Qty**
1	Type 1 Access Switch 48 Port POE	28
2	Type 2 Access Switch 24 Port POE	48
3	Type 3 Access Switch 48 Port Non POE	40
4	Type 4 Access Switch 24 Port Non POE	30
5	Stacking Kit for Access Switch	123
6	Type 1 Distribution Switch 12 Port	2
7	Type 2 Distribution Switch 24 Port	2
8	Type 3 Distribution Switch 48 Port	2
9	Type 1 Access Switch 24 MultiGig (8xmGig, 16x1G) POE	1
10	Type 2 Access Switch 48 MultiGig (12xmGig, 36x1G) POE	29
11	Type 1 Access Point Indoor (Internal Antenna)	18
12	Type 2 Access Point Indoor (Internal Antenna)	23
13	Type 3 Access Point Indoor (Internal Antenna)	200
14	Core Switch Chassis	2
15	Wireless Controller	2

16	Multipoint Control Unit (MCU)	1
17	10GBASE-LR SFP Module	232
18	10GBASE-SR SFP Module	12
19	QSFP 40GBASE-LR4 Mod, LC, 10km,	26
20	1000BASE-T SFP transceiver module for Category 5 copper wire	20
21	1000BASE-LX/LH SFP transceiver module	40
22	1000BASE-SX SFP transceiver module	10
23	Additional Power Supply for Access Switches (Type 1,2,3 &4)	5 Nos Each Category
24	Type 1 IP Phone	50
25	Power adaptor for IP Phones	25
	PART-B	
1	Addition Power Cord American standard-C13-C14	15
2	Addition Power Cord India	15

ANNEXURE-V

Signed Service Level Agreement (SLA) must be submitted along with the bid on the bidder's letterhead

SERVICE LEVEL AGREEMENT AND WARRANTY:

All the following conditions must be agreed upon.

1. The bidder must provide 24 x 7 x 365 days online support as and when required. In the event that an issue is not resolved within 2 hours (including public holidays), the bidder must send their engineer to the site within 24 hours of the issue being raised (including public holidays). If the vendor fails to provide support within the specified duration, a penalty of Rs. 1000 per hour of delay will be charged, and the penalty amount will be deducted from the Bank guarantee.

2. The bidder must ensure that all installed equipment supplied by them has a minimum uptime of 99.5%, which will be calculated quarterly. In case of any downtime, a penalty of Rs 1000 will be charged on an hourly basis. Penalties for any downtimes will be deducted from the bank guarantee.

3. The equipment warranty agreement/document must be submitted to IIT Ropar within 1 month after installation.

4. The defects, if any, during the guarantee/warranty period are to be rectified free of charge by arranging free replacement wherever necessary.

5. During the warranty period, the OEM/bidder must undertake comprehensive maintenance of the entire hardware components, equipment, and software support supplied by the vendor at the place of installation of the equipment.

6. Technical support shall be provided for system administration and maintenance of all devices for the entire warranty period.

7. The Bidder must submit the name of the service engineers employed by them who are competent to serve installation, along with their contact details in India.

8. The prospective bidder should provide hands-on training to the IIT Ropar Network Team. It may be on-premises or in OEM/Bidder location, without charge.

9. The faulty material must be replaced within 48 hours of the complaint being raised. In case the bidder fails to replace the part on time, a penalty of Rs 1000 will be charged on an hourly basis, and the penalty amount will be deducted from the Bank guarantee.

10. Bidders should ensure that the supplied equipment must be able to integrate with existing NMS(UCS-APL-k9) and ISE(SNS-3595-k9).

11. The proposed IP phones must be able integrate with the existing EPABX. (supporting document on OEM letterhead)

12. All Active components given in the Bill of Quantities(Part-A) should be from a single OEM (Original Equipment Manufacturer) only.

13. All equipment must be installed following best practices recommended by the Original Equipment Manufacturer (OEM).

14. **Delivery, Installation Schedule and penalties.**

. The material must be delivered in below phase wise manner :

S.No	Description	Delivery Timeline
1	Type 1 Access Switch 48 Port POE	within 90 days of the issue date of the PO
2	Type 2 Access Switch 24 Port POE	
3	Type 3 Access Switch 48 Port Non POE	
4	Type 4 Access Switch 24 Port Non POE	
5	Stacking Kit for Access Switch	
6	Type 1 Distribution Switch 12 Port	
7	Type 2 Distribution Switch 24 Port	
8	Type 3 Distribution Switch 48 Port	
9	Type 1 Access Switch 24 MultiGig (8xmGig, 16x1G) POE	within 120 days of the issue date of the PO
10	Type 2 Access Switch 48 MultiGig (12xmGig, 36x1G) POE	
11	Type 1 Access Point Indoor (Internal Antenna) For Buildings	
12	Type 2 Access Point Indoor (Internal Antenna) For Auditorium	
13	Type 3 Access Point Indoor (Internal Antenna) For Buildings	
14	Core Switch Chassis (As per Specifications)	within 130 days of the issue date of the PO
15	Wireless Controller	
16	10GBASE-LR SFP Module	
17	10GBASE-SR SFP Module	
18	QSFP 40GBASE-LR4 Mod, LC, 10km,	
19	1000BASE-T SFP transceiver module for Category 5 copper wire	
20	1000BASE-LX/LH SFP transceiver module	
21	1000BASE-SX SFP transceiver module,	
22	Additional Power Supply for Access Switches (Type 1,2,3 &4)	

23	Addition Power Cord American standard-C13-C14	within 140 days of the issue date of the PO
24	Addition Power Cord India	
IPT		
1	Type 1 IP Phone	within 140 days of the issue date of the PO

b. The supplied material must be installed within 30 days of delivery.
c. IIT Ropar may provide storage facilities if available otherwise, the bidder should make their own temporary storage facility inside the campus for the storing of the material until installation.
d. The material remains the property of the bidder until it is installed and handed over to the IIT Ropar. The bidder is responsible for the security of the material, and in case of any loss, theft, damage or natural disaster, the bidder is required to provide a replacement.
e. The bidder is required to inform IIT Ropar at least 48 hours before the arrival of the material at the site.
f. The IT team at the IIT Ropar will verify the quantity of materials only after delivery, for the sole purpose of monitoring material delivery timelines.
g. Material Deliveries: As per Annexure V(14)
h. **Penalty:** A penalty of Rs. 1000 per day will be charged for late delivery and site handing over. IIT Ropar has the right to cancel the purchase order in case the material is not delivered within 60 days of the purchase order date.

15. Payment Terms

a) 70% of the material value will be paid upon each delivery of the materials.
b) The remaining payment will be released after completion of the project.

16. Performance Bank Guarantee (PBG): The successful bidder shall be required to deposit a Performance Bank Guarantee equivalent to 10% of Purchase order value as security deposit in shape of Bank Guarantee from any Indian nationalized bank in favour of the Registrar IIT Ropar payable at Rupnagar / Ropar within 10 days of the issue of purchase order / letter of intent.

17. Jurisdiction: The Courts of Ropar alone will have the jurisdiction to try any matter, dispute or difference between the parties arising out of this tender/contract. It is specifically agreed that no Court outside and other than Ropar court shall have jurisdiction in the matter.

<On Organization Letter Head>

ANNEXURE-A

(For Goods/ Services Contracts)
<CERTIFICATE>

Tender No. :- …… Date:- ……..

I have read the clause regarding restrictions on procurement from a bidder of a country which shares a land border with India and hereby certify that this bidder is not from such a country.

OR (whichever is applicable)

I have read the clause regarding restrictions on procurement from a bidder of a country which shares a land border with India and hereby certify that this bidder is from _____(Name of Country) and has been registered with the Competent Authority. I also certify that this bidder fulfills all the requirements in this regard and is eligible to be considered.

(Copy/ evidence of valid registration by the Competent Authority is to be attached)

Signature of Bidder/ Agent
Name: _____
Designation: _____
Organization Name: _____
Contact No. : _____

<On Organization Letter Head>

ANNEXURE-B

(For Works Contracts, including Turnkey contracts)
<CERTIFICATE>

Tender No. :- …… Date:- ……..

I have read the clause regarding restrictions on procurement from a bidder of a country which shares a land border with India and on sub-contracting to contractors from such countries and hereby certify that this bidder is not from such a country and will not sub-contract any work to a contractor from such countries unless such contractor is registered with the Competent Authority.

OR (whichever is applicable)

I have read the clause regarding restrictions on procurement from a bidder of a country which shares a land border with India and on sub-contracting to contractors from such countries and hereby certify that this bidder is from _____(Name of Country) and has been registered with the Competent Authority and will not sub-contract any work to a contractor from such countries unless such contractor is registered with the Competent Authority. I also certify that this bidder fulfills all the requirements in this regard and is eligible to be considered.

(Copy/ evidence of valid registration by the Competent Authority is to be attached)

Signature of Bidder/ Agent
Name: _____
Designation: _____
Organization Name: _____
Contact No. : _____

ANNEXURE-C

DECLARATION OF LOCAL CONTENT
(To be given on Company Letter Head – For tender value below Rs.10 Crores)
(To be given by Statutory Auditor/ Cost Auditor/ Cost Accountant/ CA for tender value above Rs.10 Crores)

To,
The Registrar,
Indian Institute of Technology Ropar,
Rupnagar, Punjab - 140001

Subject: - Declaration of Local Content

Tender Reference No:

Name of Tender/ Work:

1. We hereby declare that items offered has _____% local content (DPIIT OM No. P-45021/2/2017-PP (BE-II) dated 16.09.2020) & (DPIIT OM No. P-45021/102/2019-BE-II-Part(1) (E-50310) dated 04.03.2021)

2. Class of Supplier:

Class - I

Class - II

"Local Content" means the amount of value added in India which shall, be the total value of the item being offered minus the value of the imported content in the item (including all customs duties) as a proportion of the total value, in percent.

"*False declaration will be in breach of Code of Integrity under Rule 175(1)(i)(h) of the General Financial Rules for which a bidder or its successors can be debarred for up to two years as per Rule 151(iii) of the General Financial Rules along with such other actions as may be permissible under law."

Yours faithfully,

(Signature of the bidder, with Official Seal)

ANNEXURE-D

<TO BE PROVIDED BY OEM ON LETTERHEAD>
DECLARATION OF COUNTRY OF ORIGIN
(To be given on Company Letter Head – For tender value below Rs.10 Crores)
(To be given by Statutory Auditor/ Cost Auditor/ Cost Accountant/ CA for tender value above Rs.10 Crores)

To,
The Registrar,
Indian Institute of Technology Ropar,
Rupnagar, Punjab - 140001

Subject: - Declaration of Country of Origin

Tender Reference No:

Name of Tender/ Work:

1. Country of Origin of Goods being offered:_____(OM No. 6/18/2019-PPD dated 23.07.2020)

"*False declaration will be in breach of Code of Integrity under Rule 175(1)(i)(h) of the General Financial Rules for which a bidder or its successors can be debarred for up to two years as per Rule 151(iii) of the General Financial Rules along with such other actions as may be permissible under law."

Yours faithfully,

(Signature of the bidder, with Official Seal)

ANNEXURE-E

FORMAT FOR NON BLACKLISTING OF SUPPLIER

I/ We _____Manufacturer/partner/Authorized Distributor/Agent (strike out which is not applicable) of (Supplier) _____ do hereby declare and solemnly affirm that the individual/firm/company is not black-listed by the Union/State Government/Autonomous body.

Deponent

Address _____

I/ We hereby solemnly declare and affirm that the above declaration is true and correct to the best of my knowledge and belief. No part of it is false and nothing has been concealed.

Deponent

Dated: _____

(Note: To be furnished on non-judicial stamp paper duly attested by the Oath Commissioner.)

ANNEXURE-F

INTEGRITY PACT

To,

…….

……

……

Subject: Tender No. ……. for the …….

Dear Sir,

It is here by declared that Indian Institute of Technology Ropar is committed to follow the principle of transparency, equity and competitiveness in public procurement. The subject Tender is an invitation to offer made on the condition that the Bidder will sign the integrity Agreement, which is an integral part of tender/bid documents, failing which the tenderer/bidder will stand disqualified from the tendering process and the bid of the bidder would be summarily rejected. This declaration shall form part and parcel of the Integrity Agreement and signing of the same shall be deemed as acceptance and signing of the Integrity Agreement on behalf of the Indian Institute of Technology Ropar.

Yours faithfully,

(Duly authorized signatory of the Bidder)

INTEGRITY PACT

To,

The Registrar
Indian Institute of Technology Ropar
Rupnagar.

Subject: Submission of Tender for the _____.

Dear Sir,

I/We acknowledge that Indian Institute of Technology Ropar is committed to follow the principles thereof as enumerated in the Integrity Agreement enclosed with the tender/bid document. I/We agree that the Tender is an invitation to offer made on the condition that I/We will sign the enclosed integrity Agreement, which is an integral part of tender documents, failing which I/We will stand disqualified from the tendering process. I/We acknowledge that THE MAKING OF THE BID SHALL BE REGARDED AS AN UNCONDITIONAL AND ABSOLUTE ACCEPTANCE of this condition of the Tender. I/We confirm acceptance and compliance with the Integrity Agreement in letter and spirit and further agree that execution of the said Integrity Agreement shall be separate and distinct from the main contract, which will come into existence when tender/bid is finally accepted by Indian Institute of Technology Ropar. I/We acknowledge and accept the duration of the Integrity Agreement, which shall be in the line with Article 1 of the enclosed Integrity Agreement. I/We acknowledge that in the event of my/our failure to sign and accept the Integrity Agreement, while submitting the tender/bid, Indian Institute of Technology Ropar shall have unqualified, absolute and unfettered right to disqualify the tenderer/bidder and reject the tender/bid is accordance with terms and conditions of the tender/ bid.

Yours faithfully,

(Duly authorized signatory of the Bidder)

INTEGRITY PACT

This **INTEGRITY PACT** is made and executed at.....on this day of.....20.....

BY AND BETWEEN

THE PRESIDENT OF INDIA acting through (insert name & designation of the officer), Department of Higher Education/Department of School Education, Ministry of Education, Govt. of India having its office located at Shastri Bhawan, New Delhi-110001(hereinafter referred to as **"The Principal**" which terms or expression shall, unless excluded by or repugnant to the subject or context, mean and include its successor-in office, administrators or permitted assignees) of the **First Part;**

AND

M/s……. a company incorporated under the Companies Act..... through its representative/authorized signatory (insert name and designation of the officer) vide resolution dated ..... passed by the Board of Directors, having its office at... (hereinafter referred to as **"The Bidder/Contractor"** which term or expression shall, unless excluded by or repugnant to the subject or context, mean and include its successor-in-office, administrators or permitted assignees) of the **Second Part**.

Preamble

The Principal intends to award, under laid down organizational procedures, contracts for_____ The Principal values full compliance with all relevant laws of the land, rules, regulations, economic use of resources and of fairness / transparency in its relations with its Bidder(s) and/or Contractor(s).

In order to achieve these goals, the Principal will appoint Independent External Monitors (IEMs) who will monitor the tender process and the execution of the contract for compliance with the principles mentioned above.

Section 1-Commitments of the Principal

(1) The Principal commits itself to take all measures necessary to prevent corruption and to observe the following principles:

a. No employee of the Principal, personally or through family members, will in connection with the tender for, or the execution of a contract, demand, take a promise for or accept, for self or third person, any material or immaterial benefit which the person is not legally entitled to.

b. The Principal will, during the tender process treat all Bidder(s) with equity and reason. The Principal will in particular, before and during the tender process, provide to all Bidder(s) the same information and will not provide to any Bidder(s) confidential / additional information through which the Bidder(s) could obtain an advantage in relation to the tender process or the contract execution.

c. The Principal will exclude from the process all known prejudiced persons.

(2) If the Principal obtains information on the conduct of any of its employees which is a criminal offence under the IPC/PC Act, or if there be a substantive suspicion in this regard, the Principal will inform the Chief Vigilance Officer and in addition can initiate disciplinary actions.

Section 2-Commitments of the Bidder(s)/ Contractor(s)

(1) The Bidder(s)/Contractor(s) commit themselves to take all measures necessary to prevent corruption. The Bidder(s) Contractor(s) commit themselves to observe the following principles during participation in the tender process and during the contract execution.

a. The Bidder(s)/ Contractor(s) will not, directly or through any other person or firm, offer, promise or give to any of the Principal's employees involved in the tender process or the execution of the contract or to any third person any material or other benefit which he/she is not legally entitled 10 in order to obtain in exchange any advantage of any kind whatsoever during the tender process or during the execution of the contract.

b. The Bidders(s) Contractor(s) will not enter with other Bidders into any undisclosed agreement or understanding, whether formal or informal. This applies in particular to prices, specifications, certifications, subsidiary contracts, submission or non-submission of bids or any other actions to restrict competitiveness or to introduce cartelization in the bidding process.

c. The Bidder(s) Contractor(s) will not commit any offence under the relevant IPC/PC Act; further the Bidders(s)/ Contractor(s) will not use improperly, for purposes of competition or personal gain, or pass on to others, any information or document provided by the Principal as part of the business relationship, regarding plans, technical proposals and business details, including information tained or transmitted electronically.

d. The Bidder(s)/ Contractors(s) of foreign origin shall disclose the name and address of the Agents/representatives in India, if any. Similarly the Bidder(s)/Contractors(s) of Indian. Nationality shall furnish the name and address of the foreign principals, if any. Further details as mentioned in the "Guidelines on Indian Agents of Foreign Suppliers" shall be disclosed by the Bidder(s)/Contractor(s). Further, as mentioned in the Guidelines all the payments made to the Indian agent/representative have to be in Indian Rupees only. Copy of the "Guidelines on Indian Agents of Foreign Suppliers" is placed at (page no. 6)

e. The Bidder(s)/ Contractor(s) will, when presenting their bid, disclose any and all payments made, is committed to or intends to make to agents, brokers or any other intermediaries in connection with the award of the contract.

f. Bidder(s) /Contractor(s) who have signed the Integrity Pact shall not approach the Courts while representing the matter to IEMs and shall wait for their decision in the matter. The Bidder(s)/ Contractor(s) will not instigate third persons to commit offences outlined above or be an accessory to such offences.

(2) The bidder(s)/Contractor(s) will not instigate third person to commit offences outlined above or be an accessory to such offences.

Section 3-Disqualification from tender process and exclusion from future contracts

If the Bidder(s)/Contractor(s), before award or during execution has committed a transgression through a violation of Section 2, above or in any other form such to put their reliability or credibility in question, the Principal is entitled to disqualify the Bidder(syContractor(s) from the tender process or take action as per the procedure mentioned in the "Guidelines on Banning of business dealings". Copy of the "Guidelines on Banning of business dealings" is placed at (page nos. 7-13).

Section 4-Compensation for Damages

(1) If the Principal has disqualified the Bidder(s) from the tender process prior to the award according to Section 3, the Principal is entitled to demand and recover the damages equivalent to Earnest Money Deposit/Bid Security.

(2) If the Principal has terminated the contract according to Section 3, or if the Principal is entitled to terminate the contract according to Section 3, the Principal shall be entitled to demand and recover from the Contractor liquidated damages of the Contract value or the amount equivalent to Performance Bank Guarantee.

Section 5-Previous transgression

(1) The Bidder declares that no previous transgressions occurred in the last three years with any other Company in any country conforming to the anti-corruption approach or with any Public Sector Enterprise in India that could justify his exclusion from the tender process.

(2) If the Bidder makes incorrect statement on this subject, he can be disqualified from the tender process or action can be taken as per the procedure mentioned in "Guidelines on Banning of business dealings".

Section 6 - Equal treatment of all Bidders / Contractors/Subcontractors

(1) In case of Sub-contracting, the Principal Contractor shall take the responsibility of the adoption of Integrity Pact by the Sub-contractor.

(2) The Principal will enter into agreements with identical conditions as this one with all Bidders and Contractors.

(3) The Principal will disqualify from the tender process all bidders who do not sign this Pact or violate this provisions.

Section 7-Criminal charges against violating Bidder(s)/Contractor(s)/Subcontractor(s)

If the Principal obtains knowledge of conduct of a Bidder, Contractor or Subcontractor, or of an employee or a representative or an associate of a Bidder, Contractor or Subcontractor which constitutes corruption, or if the Principal has substantive suspicion in this regard, the Principal will inform the same to the Chief Vigilance Officer.

Section 8- Independent External Monitor

(1) The Principal appoints competent and credible Independent External Monitor for this Pact after approval by Central Vigilance Commission. The task of the Monitor is to review independently and objectively, whether and to what extent the parties comply with the obligations under this agreement.

(2) The Monitor is not subje to instructions by the representatives of the parties and performs his/her functions neutrally and independently. The Monitor would have access to all Contract documents, whenever required. It will be obligatory for him/her

to treat the information and documents of the Bidders/Contractors as confidential. He/she reports to Secretary, MoE.

(3) The Bidder(s)/Contractor(s) accepts that the Monitor has the right to access without restriction to all Project documentation of the Principal including that provided by the Contractor. The Contractor will also grant the Monitor, upon his/her request and demonstration of a valid interest, unrestricted and unconditional access to their project documentation. The same is applicable to Sub-contractors.

(4) The Monitor is under contractual obligation to treat the information and documents of the Bidder(s) Contractor(s) Sub-contractor(s) with confidentiality. The Monitor has also signed declarations on 'Non-Disclosure of Confidential Information' and of 'Absence of Conflict of Interest'. In case of any conflict of interest arising at a later date, the IEM shall inform Secretary, D/o Higher Education.

(5) The Principal will provide to the Monitor sufficient information about all meeting among the parties related to the Project provided such meetings could have an impact on the contractual relations between the Principal and the Contractor. The parties offer to the Monitor the option to participate in such meetings.

(6) As soon as the Monitor notices, or believes to notice, a violation of this agreement, he/she will so inform the Management of the Principal and request the Management to discontinue or take corrective action, or to take other relevant action. The monitor can in this regard submit non-binding recommendations. Beyond this, the Monitor has no right to demand from the parties that they act in a specific manner, refrain from action or tolerate action.

(7) The Monitor will submit a written report to the Secretary, D/o Higher Education within 8 to 10 weeks from the date of reference or intimation to him by the Principal and, should the occasion arise, submit proposals for correcting problematic situations.

(8) If the Monitor has reported to the Secretary, D/o Higher Education, a substantiated suspicion of an offence under relevant IPC / F Act and the Secretary, MoE has not, within the reasonable time taken visible action to proceed against such offence or reported it to the Chief Vigilance Officer, the Monitor may also transmit this information directly to the Central Vigilance Commissioner.

(9) The word **'Monitor'** would include both singular and plural.

Section 9-Pact Duration

This Pact begins when both parties have legally signed it. It expires for the Contractor 12 months after the last payment under the contract, and for all other Bidders 6 months after the contract has been awarded. Any violation of the same would entail disqualification of the bidders and exclusion from future business dealing.

If any claim is made / lodged during this time, the same shall be binding and continue to be valid despite the lapse of this pact as specified above, unless it is discharged / determined by Secretary, D/o Higher Education.

Section 10 - Other provisions

(1) This agreement is subject to Indian Law. Place of performance and jurisdiction is the Office of the Principal, i.e. New Delhi.

(2) Changes and supplements as well as termination notices need to be made in writing. Side agreements have not been made.

(3) If the Contractor is a partnership or a consortium, this agreement must be signed by all partners or consortium members.

(4) Should one or several provisions of this Pact turn out to be invalid, the remainder of this Pact remains valid. In this case, the parties will strive to come to an agreement to their original intentions.

(5) Issues like Warranty / Guarantee etc. shall be outside the purview of IEMS.

(6) In the event of any contradiction between the Integrity Pact and its Annexure, the Clause in the Integrity Pact will prevail.

(7) The actions stipulated in this Integrity Pact are without prejudice to any other legal action(s) that may follow in accordance with the provisions of the extant law in force relating to any civil or criminal proceedings.

IN WITNESS WHEREOF, the parties hereunto set their hands and seals and executed this **INTEGRITY PACT** as of the day/month/year first above written:

For and on behalf of
THE PRESIDENT OF INDIA (First Party)
SIGNED, SEALED AND DELIVERED by

Name:.....
Designation:.....
Address:
Authorized Signatory

For and on behalf of
M/s…….**(Second party)**
SIGNED, SEALED AND DELIVERED by

Name_____
Designation:……..
Address:.....
Representative/authorized signatory
Vide resolution dated ..... passed by the Board of Directors

In the presence of Witness:

1.

2.