राष्ट्रीय फैशन प्रौद्योगिकी संस्थान
वस्त्र मंत्रालय, भारत सरकार
निफ्ट कैम्पस, करवड़, जोधपुर–342 037,राजस्थान, भारत
National Institute of Fashion Technology
Ministry of Textiles, Govt. of India
NIFT Campus, Karwar, Jodhpur–342 037, Rajasthan, India

15631/IT/Internet Connectivity/Campus Wi-Fi Date: 07/08/2025

"निफ़्ट जोधपुर परिसर (करवड) में वाई-फाई अवसंरचना की आपूर्ति में नए उपकरणों की स्थापना/उन्नयन, और कमीशनिंग के लिए सरकारी एजेंसियों / किसी भी केंद्रीय या राज्य (सार्वजनिक क्षेत्र के उपक्रम-पीएसयू) से रुचि की अभिव्यक्ति (ईओआई) आमंत्रित की जाती है"/

"Invites Expression of Interest (EOI) from Govt Agencies /Any Central or State (Public sector undertaking-PSUs) for Supply, Installation and Commissioning for New Installation/Upgradation Wi-Fi Infrastructure at NIFT ,Campus Karwar, Jodhpur"

Expression of Interest(EOI) SCHEDULE

ईओआई आमंत्रण के प्रकाशन की तिथि/ Date of publication of inviting EOI	07/08/2025, 4:00 PM
ईओआई दस्तावेज़ डाउनलोड करने की तिथि/ Date from which EOI document can be downloaded	07/08/2025 4:00 PM
ईओआई दस्तावेज़ के लिए बोली-पूर्व तिथि और समय/Pre-Bid Date & Time for EOI Document	13/08/2025 (11:00 AM)
ईओआई जमा करने की अंतिम तिथि/ Last date for EOI Submission Date & Time	29/08/2025 (4:00 PM)
ईओआई दस्तावेज़ खोलने की तिथि और समय/ Date and time of opening of EOI Document	29/08/2025 (4:30 PM)

इच्छुक सरकारी एजेंसियाँ/कोई भी केंद्रीय या राज्य (सार्वजनिक क्षेत्र का उपक्रम-पीएसयू) दो अलग-अलग सीलबंद लिफाफों में अपनी ईओआई जमा कर सकते हैं, जिसमें संगठन का प्रोफाइल हो जिसमें समान सेवाओं में अनुभव दर्शाया गया हो, एक लिफाफे में नेटवर्क डायग्राम के साथ सर्वेक्षण रिपोर्ट और दूसरे लिफाफे में वाई-फाई इंफ्रास्ट्रक्चर की नई स्थापना/उन्नयन और कमीशनिंग के लिए बजटीय अनुमान के साथ-साथ सेवा शुल्क भी लिखा हो। लिफाफे पर 'एनआईएफटी, कैंपस करवड़ , जोधपुर में वाई-फाई इंफ्रास्ट्रक्चर की नई स्थापना/उन्नयन और कमीशनिंग के लिए ईओआई' लिखा होना चाहिए/Interested Govt agencies /Any Central or State (Public sector undertaking-PSUs) may submit their EOI in two separate sealed envelopes with profile of the organization indicating experience in similar services, Survey report along with the network diagram in one envelope, and the budgetary estimate for New Installation/Upgradation and Commissioning of Wi-Fi Infrastructure along with service charges in the other envelope. The covers shall be superscribed as 'EOI for New Installation/Upgradation and Commissioning of Wi-Fi Infrastructure at NIFT, Campus Karwar, Jodhpur.

दोनों लिफ़ाफ़ों को एक अन्य बड़े लिफ़ाफ़े में रखकर निम्नलिखित के समक्ष प्रस्तुत किया जाएगा/Both the covers shall be put into another large cover and submitted to:

क्रय अधिकारी /Purchase Officer,
राष्ट्रीय फैशन प्रौद्योगिकी संस्थान /National Institute of Fashion Technology,
निफ़्ट जोधपुर परिसर (करवड) NIFT Campus, Karwar, Jodhpur- 342037, Rajasthan, India

EOI Document is available on NIFT website https://nift.ac.in/jodhpur/tenders.

I accept the above Terms and Conditions
(Full Signature of the agency)

नोट: इस ईओआई दस्तावेज़ में 19 पृष्ठ हैं और बोलीदाताओं से अनुरोध है कि वे सभी पृष्ठों पर हस्ताक्षर करें।/Note: This EOI document contains 19 pages and bidders are requested to sign on all the pages.

1. **प्रस्तावना /Introduction:**

राष्ट्रीय फैशन प्रौद्योगिकी संस्थान (निफ्ट) निफ्ट अधिनियम 2006 द्वारा शासित एक वैधानिक निकाय है और इसे भारत सरकार के वस्त्र मंत्रालय द्वारा फैशन प्रौद्योगिकी के क्षेत्र में शिक्षा और अनुसंधान के प्रचार और विकास के लिए स्थापित किया गया है। निफ्ट अपने 19 परिसरों के नेटवर्क के माध्यम से पूरे देश में फैशन व्यवसाय की शिक्षा प्रदान करता है। निफ्ट का मुख्यालय नई दिल्ली में है और इसके परिसर बेंगलुरु, भोपाल, भुवनेश्वर, चेन्नई, दमन, गांधी नगर, हैदराबाद, जोधपुर, कांगड़ा, कन्नूर, कोलकाता, मुंबई, नई दिल्ली, पटना, पंचकूला, रायबरेली, शिलांग, श्रीनगर और वाराणसी में स्थित हैं।/National Institute of Fashion Technology (NIFT) is a statutory Body governed by the NIFT Act 2006 & set up by the Ministry of Textile, Govt. of India for the promotion and development of education and research in field of Fashion Technology. NIFT provides Fashion business education across the country through its network of 19 campuses. NIFT has its head office at New Delhi with its campuses located at Bengaluru, Bhopal, Bhubaneswar, Chennai, Daman, Gandhi Nagar, Hyderabad, Jodhpur, Kangra, Kannur, Kolkota, Mumbai, New Delhi, Patna, Punchkula, Raebareli, Shillong ,Srinagar and Varanasi.

निफ्ट, जोधपुर परिसर की स्थापना वर्ष 2010 में की गई थी और यह 5 (पांच) स्नातक और 1 (एक) स्नातकोत्तर कार्यक्रमों की शिक्षा प्रदान करता है। हालाँकि निफ्ट, जोधपुर का वर्तमान परिसर 2015-16 में करवार, जोधपुर में अपने स्थायी नए भवन में स्थानांतरित हो गया है।/NIFT, Jodhpur campus was established in the year 2010 and imparting education to 5 (Five) undergraduate and 1(One) post graduate programmes. However the present campus of NIFT, Jodhpur has been shifted in its permanent new building in 2015-16 at Karwar, Jodhpur.

2. **रुचि की अभिव्यक्ति (ईओआई) आमंत्रण सूचना/Notice Inviting Expression of Interest(EOI)**

इच्छुक सरकारी एजेंसियाँ/कोई भी केंद्रीय या राज्य (सार्वजनिक क्षेत्र का उपक्रम-पीएसयू) दो अलग-अलग सीलबंद लिफाफों में अपनी ईओआई जमा कर सकते हैं, जिसमें संगठन का प्रोफाइल हो, जिसमें समान सेवाओं में अनुभव दर्शाया गया हो, एक लिफाफे में नेटवर्क डायग्राम के साथ सर्वेक्षण रिपोर्ट और दूसरे लिफाफे में वाई-फाई इंफ्रास्ट्रक्चर की नई स्थापना/उन्नयन और कमीशनिंग के लिए बजटीय अनुमान के साथ-साथ सेवा शुल्क भी हो। लिफाफे पर 'एनआईएफटी, कैंपस करवार, जोधपुर में वाई-फाई इंफ्रास्ट्रक्चर की नई स्थापना/उन्नयन और कमीशनिंग के लिए ईओआई' लिखा होना चाहिए। दोनों लिफाफों को एक दूसरे बड़े लिफाफे में डालकर निम्नलिखित पते पर जमा करना होगा/Interested Govt agencies/Any Central or State (Public sector undertaking-PSUs) may submit their EOI in two separate sealed envelopes with profile of the organization indicating experience in similar services, Survey report along with the network diagram in one envelope, and the budgetary estimate for New Installation/Upgradation and Commissioning of Wi-Fi Infrastructure along with service charges in the other envelope. The covers shall be superscribed as 'EOI for New Installation/Upgradation and Commissioning of Wi-Fi Infrastructure at NIFT , Campus Karwar, Jodhpur. Both the covers shall be put into another large cover and submitted to:

क्रय अधिकारी/Purchase Officer,
राष्ट्रीय फैशन प्रौद्योगिकी संस्थान, निफ्ट परिसर, करवड़ , जोधपुर- 342037, राजस्थान, भारत
National Institute of Fashion Technology, NIFT Campus, Karwar, Jodhpur- 342037, Rajasthan, India

3. **पत्राचार पता: राष्ट्रीय फैशन प्रौद्योगिकी संस्थान, निफ्ट परिसर, करवार, जोधपुर-342037, राजस्थान, भारत।**

Correspondence Address: National Institute of Fashion Technology, NIFT Campus, Karwar, Jodhpur-342037, Rajasthan, India.

I accept the above Terms and Conditions
(Full Signature of the agency)

यदि इस ईओआई से संबंधित किसी स्पष्टीकरण की आवश्यकता है, तो निफ्ट जोधपुर के निम्नलिखित अधिकारियों से पूछा जा सकता है।
If any clarification is required relating to this EOI, the same can be sought from the following officers of NIFT Jodhpur.

• कंप्यूटर इंजीनियर, निफ्ट, जोधपुर/ Computer Engineer, NIFT, Jodhpur, 0291-2659533,
ई-मेल: computerengg.jodhpur@nift.ac.in

• क्रय विभाग निफ्ट, जोधपुर मोबाइल नंबर/ Purchase Department NIFT, Jodhpur, 0291-2659571
ई-मेल:purchase.jodhpur@nift.ac.in

रुचि की अभिव्यक्ति (ईओआई) सीलबंद लिफाफे में प्रस्तुत की जानी चाहिए और इसका पता इस प्रकार से है :-The Expression of Interest (EOI) should be submitted in sealed envelopes and address:-

क्रय विभाग /Purchase Officer,
राष्ट्रीय फैशन प्रौद्योगिकी संस्थान /National Institute of Fashion Technology,
निफ्ट जोधपुर , करवड़ परिसर , NIFT Campus, Karwar, Jodhpur- 342037, Rajasthan

4. A. Technical Cover shall contain:

i. सरकारी एजेंसियों / किसी भी केंद्रीय या राज्य (सार्वजनिक क्षेत्र के उपक्रम-पीएसयू) का प्रोफ़ाइल।/Profile of the Govt agencies /Any Central or State (Public sector undertaking-PSUs).

ii. वाई-फाई इंफ्रास्ट्रक्चर की स्थापना और कमीशनिंग के क्षेत्र में अनुभव का विवरण और एजेंसी को ईओआई दस्तावेज़ में उल्लिखित वस्तुओं की तकनीकी विशिष्टताओं का अनुपालन करना होगा। /Experience details in the field of Installation and Commissioning of Wi-Fi Infrastructure and agency has to comply the technical specification of goods which is mentioned in EOI Document.

टर्नओवर के प्रमाण के रूप में पिछले तीन वर्षों (2022-2023, 2023-2024 और 2024-2025) के खातों की प्रति /Copy of Accounts of the last three years (2022-2023, 2023-2024 and 2024-2025) in proof of turnover.

iii. विशिष्ट क्षेत्र को संभालने के लिए कुशल/तकनीकी जनशक्ति की उपलब्धता का विवरण /Details of availability of skilled/technical manpower to handle the specific area.

iv. इस आशय का अर्थ है कि संगठन को कभी भी काली/ब्लैक सूची में नहीं डाला गया है तथा संगठन के विरुद्ध कोई मामला/जांच दर्ज नहीं की गई है। /Undertaking to the effect that the organization had not been blacklisted at any time and no case/inquiry has been registered against the organization.

v. निर्माता के प्राधिकरण फॉर्म की प्रति /Copy of manufacturer's Authorization Form.

B. दूसरे लिफ़ाफ़े में निम्नलिखित शर्तें शामिल होंगे /The second cover shall contain:

1. सहायक प्रणालियों सहित संपूर्ण प्रणाली की खरीद, स्थापना और कमीशनिंग के लिए मदवार बजटीय अनुमान। कार्यान्वयन की वास्तविक लागत उद्धृत बजटीय लागत के भीतर होगी।/Item wise budgetary estimate for procuring, installation and commissioning of the entire system including support systems. Actual cost of implementation shall be within the budgetary cost quoted for.
2. संगठन के लिए एजेंसी सेवा शुल्क /Agency Service charge for the organization.
3. इच्छुक संगठन अनुमान प्रदान करने के लिए एनआईएफटी जोधपुर परिसर को पूर्व सूचना देकर साइट का सर्वेक्षण कर सकते हैं।/Interested organizations may survey the site with prior intimation to the NIFT Jodhpur campus, for providing the estimate.
4. लेआउट की आवश्यकता का विवरण संलग्न है।/Requirement details of layout are attached.

I accept the above Terms and Conditions
(Full Signature of the agency)

5. ईओआई की नियम और शर्तें /EOI Terms and Conditions:

1. निफ्ट जोधपुर परिसर परिसर में वाई-फाई उपकरणों की नई स्थापना/उन्नयन और कमीशनिंग के कार्यान्वयन के लिए लागत प्रभावी समाधान की पेशकश करने वाले विकल्पों की खोज कर रहा है।/NIFT Jodhpur Campus is currently exploring options offering cost-effective solution for implementing new installation/Upgradation and Commissioning of Wi-Fi equipment in Campus.
2. निफ्ट जोधपुर परिसर में वाई-फाई की स्थापना/उन्नयन और कमीशनिंग के लिए सेवा शुल्क के साथ सर्वोत्तम संभव बजटीय अनुमान प्रदान करने के लिए सरकारी एजेंसियों / किसी भी केंद्रीय या राज्य (सार्वजनिक क्षेत्र के उपक्रम-पीएसयू) को आमंत्रित किया जाता है। इस परियोजना के लिए सरकारी एजेंसियों / किसी भी केंद्रीय या राज्य (सार्वजनिक क्षेत्र के उपक्रम पीएसयू) एजेंसियों के अलावा किसी अन्य पर विचार नहीं किया जाएगा।/Govt agencies /Any Central or State (Public sector undertaking-PSUs) are invited for providing the best possible Budgetary Estimation with Service Charges for installation /Upgradation and Commissioning of Wi-Fi in NIFT Jodhpur Campus.
   No other than (Govt agencies /Any Central or State (Public sector undertaking PSUs) agencies will be entertained for this project.
3. एजेंसी को अपने बजटीय प्रस्ताव पर दर उद्धरण की वैधता का उल्लेख करना होगा (दर उद्धरण की वैधता कम से कम 6 महीने या उससे अधिक होनी चाहिए)The agency has to mention the Rate quotation validity on their budgetary proposal(Validity of rate quotation should be at least 6 months or more)
4. प्रस्ताव की ईओआई/निष्पादन निफ्ट मुख्यालय की वित्तीय स्वीकृति के अधीन है।/EOI/Execution of the proposal is strictly subject to getting financial approval of NIFT Head Office.
5. सफल एजेंसी अपनी उप-प्रणालियों, ग्राहक सहायता और एसएलए के अनुसार जिम्मेदारी सहित संपूर्ण प्रणाली के संचालन और प्रबंधन के लिए जिम्मेदार होगी।The successful agency shall be responsible for operations and management of the entire system including its sub systems, customer support and responsibility as per SLAs.
6. सफल एजेंसी को यह सुनिश्चित करना होगा कि जिन उपकरणों के लिए ग्राहक द्वारा भुगतान किया जाता है, उनका हर समय पूर्ण बीमा किया जाएगा और उन्हें 3 वर्ष की व्यापक ऑनसाइट वारंटी के अंतर्गत रखा जाएगा तथा OEM से अपग्रेड सहायता प्राप्त होगी और इसे अवधि (या विस्तारित अवधि) के अंत में ग्राहक को हस्तांतरित कर दिया जाएगा, यदि कोई हो।/The successful agency must ensure that the equipment for which the payments are made by the client shall at all times be fully insured and be kept under comprehensive onsite warranty of 3 Years and upgrade support from OEM and the same shall be transferred to client at the end of the term (or the extended term) if any.
7. एजेंसी द्वारा प्रदान किए गए सभी उपकरण एक ही OEM से होने चाहिए और सर्वर/नेटवर्क नियंत्रक कक्ष से अन्य भवनों तक कनेक्टिविटी न्यूनतम 10GbE फाइबर ऑप्टिक्स केबल (लेयर 3 से लेयर 2 स्विच) होनी चाहिए।/All the equipment provided by the agency must be from the same OEM and connectivity should be minimum 10GbE fiber optics cable (layer 3 to layer 2 switches) from the server/network controller room to other buildings.
8. इस समझौते की अवधि के दौरान सफल एजेंसी उपकरण को अच्छी कार्यशील स्थिति में बनाए रखने के लिए सहमत है और इस उद्देश्य के लिए निम्नलिखित मरम्मत और रखरखाव सेवा प्रदान करेगी:
9. इस समझौते की अवधि के दौरान सफल एजेंसी उपकरण को अच्छी कार्यशील स्थिति में बनाए रखने के लिए सहमत है और इस उद्देश्य के लिए निम्नलिखित मरम्मत और रखरखाव सेवा प्रदान करेगी /During the term of this agreement the successful agency agrees to maintain the equipment in good working order and for this purpose will provide the following repair and maintenance service:
   I. सफल एजेंसी उपकरण में किसी भी दोष और विफलता को ठीक करेगी और सभी कार्य दिवसों में ग्राहक के सामान्य कार्य घंटों के दौरान उपकरण के खराब या दोषपूर्ण भागों की मरम्मत और प्रतिस्थापन करेगी।/The successful agency shall correct any faults and failures in the equipment and shall repair and replace worn or defective parts of the equipment during Client`s normal working hours on all working days.
   II. ऐसे मामलों में जहां उपकरण के अनुपयोगी भागों को बदलने की आवश्यकता हो, सफल एजेंसी ऐसे भागों को ग्राहक को कोई अतिरिक्त लागत दिए बिना, बिल्कुल नए भागों या प्रदर्शन में नए भागों के समतुल्य भागों से बदलेगी।/In cases where

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unserviceable parts of the equipment need replacement, the successful agency shall replace such parts at no extra cost to Client, with brand new parts or those equivalent to new parts in performance.

III. एजेंसी यह भी सुनिश्चित करेगी कि उपकरण किसी भी समय स्पेयर पार्ट्स की कमी के कारण बंद न हो/The agency shall further ensure that the equipment is not down at any time for want of spare parts.

9. एजेंसी बजटीय अनुमान और सेवा शुल्क निफ्ट जोधपुर परिसर में एक सीलबंद लिफाफे में जमा कर सकती है।/ The agency may submit the budgetary estimate and service charges in a sealed envelope at NIFT Jodhpur Campus.
10. एजेंसी 0291-2659533 पर पूर्व सूचना देकर अनुमान प्रदान करने के लिए साइट का सर्वेक्षण कर सकती हैThe agency may survey the site for providing the estimate with prior intimation at 0291-2659533
11. इच्छुक सरकारी एजेंसियां/कोई भी केंद्रीय या राज्य (सार्वजनिक क्षेत्र के उपक्रम-पीएसयू) अपनी ईओआई खरीद विभाग (निफ्ट जोधपुर परिसर), राष्ट्रीय फैशन प्रौद्योगिकी संस्थान, कारवार परिसर, जोधपुर, 342037 को संबोधित कर सकते हैं।/Interested Govt agencies/Any Central or State (Public sector undertaking-PSUs) may submit their EOI may be addressed to the Purchase Department (NIFT Jodhpur Campus), National Institute of Fashion Technology, Karwar Campus, Jodhpur, 342037.
12. वाई-फाई उपकरण (सक्रिय और निष्क्रिय घटक) का विस्तृत विवरण, जिसकी निफ्ट मुख्यालय द्वारा जांच की गई है तथा निफ्ट जोधपुर परिसर का लेआउट संलग्न है।/The detailed specification of Wi-Fi equipment (Active and Passive Component) which is vetted by the NIFT Head Office and the layout of the NIFT Jodhpur campus is attached.
13. एजेंसी/प्रतिनिधि दर ईओआई प्रक्रिया में भाग लेने से पहले साइट पर जाकर कार्य के दायरे को पूरी तरह से समझ सकते हैं और यदि चाहें तो स्पष्टीकरण मांग सकते हैं।/The Agency/representative may visit the site and understand the scope of work completely before participating in the rate EOI process same and seek clarifications if so desired.
14. सफल एल-1 एजेंसी को परफॉरमेंस सिक्योरिटी डिपॉजिट जमा करना होगा जो अनुबंध के मूल्य का 5% होगा और "नेशनल इंस्टीट्यूट ऑफ फैशन टेक्नोलॉजी जोधपुर" के पक्ष में वापस किया जाएगा। इस डिपॉजिट पर कोई ब्याज देय नहीं होगा। परफॉरमेंस सिक्योरिटी वारंटी दायित्वों सहित आपूर्तिकर्ता के सभी संविदात्मक दायित्वों के पूरा होने की तारीख से साठ दिनों की अवधि के लिए वैध होनी चाहिए।/The successful L-1 agency has to furnish Performance Security Deposit which will be 5 % of the value of the contract as refundable in favour of the "National Institute of Fashion Technology Jodhpur". No interest shall be payable on this deposit. Performance Security should remain valid for a period of sixty days beyond the date of completion of all contractual obligations of the supplier including warranty obligations.

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6. आवश्यकता का सारांश/Summary of Requirement

List of Active Part with their Qty.			
Sr.No.	**Items/Description**	**Qty**	**Unit(in Nos.)**
1	Wireless Controller	1	Nos.
2	Layer 3 Switch (Core Switch - 24 Port)	1	Nos.
3	Layer 2 Switch (48 Port)	1	Nos.
4	Layer 2 Switch (24 Port)	8	Nos.
5	Layer 2 Switch (12 Port)	7	Nos.
6	Layer 2 Switch (8 Port)	25	Nos.
7	Wireless Access Point (Indoor)	180	Nos.
8	Wireless Access Point (Outdoor)	3	Nos.

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Name of the Equipment : Wireless Controller

General Specifications

Wireless controller should support 250 AP and 5000 clients from day 1 and can be upgraded to 500 AP support with 10000 clients without any hardware change.

Hardware:

- The controller shall support deployment flexibility without compromizing any features
- The controller shall support min 5 Gbps tunneling capacity and shall be upgradable to 10 gbps.
- The controller shall support 2x 10G/Multigigabit fiber uplink.
- Wireless Controller shall support link aggregation and load sharing between Access Point to WLC links
- The controller shall support hardware encrypted data plane between Access Point and Controller
- The controller shall be proposed with complete feature set including licensed feature

High Availability:

- High Availablilty mode shall support controller inline data plane mode as well as local switching mode and Mesh mode
- High Availability mode shall allow geographically dispersed installation between Controllers
- The controller failover shall not trigger client de-authication and re-association
- The controller shall support hot WLC software patching for fixing bugs
- The controller shall support hot AP software patching for fixing bugs
- The contrroller shall support new AP hardware without need for upgrading entire controller software.
- The controller shall support rolling AP upgrade
- The controller shall support rolling AP upgrade wihtout need for clustering
- The redundant Controller shall sync Access Point and Client Status, including DHCP IP lease status

Software:

- Access Point shall be able to proactively distributes Client connection before and after association and tracking client condition in real time using data packet RSSI
- The controller shall support standard-based, secure AP-Controller data&control protocol like CAPWAP. protocol that has known vulnerability like PAPI cannot be used.
- The controller shall support Inter-Controller Wireless Roaming
- The controller shall maintains per-user Application usage and shall be able to export it for network analytic.
- The controller shall support Multi Languages options from embedded GUI Management
- The controller shall provide per-Client Connection Scoring and provide reasoning of Client Connection Score
- The controller shall support Cellular offload using IPv6 tunneling to Mobile Core network

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RF management:

- The controller shall be able to support multiple RF Management profile per group of APs, including Transmit Power Control and Dynamic Channel Assignment on both 2.4GHz and 5Ghz
- The controller shall be able to identify and avoid interferers with network performance impact analysis report
- The controller shall support optimized, automatic channel width (20~160Mhz) selection over 5GHz, 802.11ac

Mesh:

- Mesh AP nodes shall provide quick convergence and fast failover to new root mesh node
- Mesh Backhaul interface shall support full duplex operation using wired daisy chaining
- Mesh AP shall support fast roaming for Wired-client through wired-to-wireless bridge client

Application Recognition and Control

- The controller shall support per-user and per-WLAN based application recognition and control that throttle usage by rate-limiting
- The controller application recognition technology shall support exporting to 3rd party compatible format, such as NetFlow v9
- The controller shall provide policy-based mDNS gateway including chromecast gateway
- The contorller shall support new application signatures without upgrading controller software

BYOD & Security:

- The controller shall provide Device Profiling using mutlple profiling methods to reduce false-detection
- The system shall provide secure onboarding service for both employee and guest based on standard-based security protocol
- Proposed system shall not use public cloud as user data repository
- The controller shall be able to embedded custom web portal page (HTML) to fully customize user experience without additional cost or extra box
- The controller shall provide rule-based rogue classification and automatically run rogue mitigation action
- The controller shall be able to detect employee device connection to Rogue Access Point and contain it automactically. It should also support protection from Honeypot or Evil twin.
- The controller shall support Content Security using DNS integration, Web Classification shall be fully customizable
- The system shall support control plane encryption on both IPv4 and IPv6
- The Controller's image upgrade shall be done through secure, encrytped transport
- The controller shall be able to provide unique pre-shared keys to the devices that do not support the 802.1x security protocol
- The controller shall support Identity PSK for onboarding
- The controller shall support identification & mitiogation of threas inside encrypted traffic

Network:

- The controller shall support mapping of specific VLANs to single SSID, depending on Access Point location and user

Configuration:

- The controller shall support automatic VLAN assignment per SSID to load-balance user connection.
- assigned VLAN pool shall be same as number of available VLAN in the system
- The controller shall support embedded best practice configuration profile and setup
- The controller shall support packet fragramentation between Access Point and controller communication

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Name of the Equipment : Layer 3 Switch (Core Switch-24 Port)

General Specifications

General Features :

- Switch should be 1U and rack mountable in standard 19" rack.
- Switch should support internal hot-swappable Redundant Power supply from day1.
- Switch should have redundant hot-swappable fans.
- Switch should have minimum 6 GB RAM and 16 GB Flash.
- Switch should have dedicated slot for modular stacking, in addition to asked uplink ports. Should support for minimum 480 Gbps of stacking throughput with 8 switch in single stack.

Performance :

- Switch shall have minimum 880 Gbps of switching fabric.
- Switch shall have minimum 32K MAC Addresses and 1000 active VLAN.
- Should support minimum 32K IPv4 routes or more and 16K IPv6 routes or more.
- Switch shall have 8K or more multicast routes.
- Switch should support atleast 64K flow entries
- Switch should support 128 or more STP Instances.
- Switch should have 16MB or more packet buffer.

Functionality :

- 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 & 1588v2.
- Switch must have functionality like static routing, RIP, PIM, OSPF, VRRP, PBR and QoS features from Day1
- Should support advance Layer 3 protocol like BGPv4, BGPv6 , MPLS, VRF, VXLAN,OSPFv3, MP-BGP
- Switch shall have 802.1p class of service, marking, classification, policing and shaping and eight egress queues.
- Switch should support management features like SSHv2, SNMPv2c, SNMPv3, NTP, RADIUS and TACACS+.
- Switch should support IPv6 Binding Integrity Guard, IPv6 Snooping, IPv6 RA Guard, IPv6 DHCP Guard, IPv6 Neighbour Discovery Inspection and IPv6 Source Guard.
- Switch should support 802.1x authentication and accounting, IPv4 and IPv6 ACLs and Dynamic VLAN assignment. Communication between switches should support encryption using suitable protocols like MACSec/VxLAN/GRE tunnel or equivalent
- Switch must have the capabilities to enable automatic configuration of switch ports as devices connect to the switch for the device type.
- 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.
- Switch shall have modular OS to support application 3rd party application hosting

Interface:

- Switch shall have 24 nos. 10/25 SFP+ ports and additional 4 nos. it should be expanable to 28 in future

Certification:

- Switch / Switch's Operating System should be tested for EAL 2/NDPP or above under Common Criteria Certification.

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Name of the Equipment : Layer 2 Switch (24 Port)

General Specifications

General Features :

- Switch should be 1U and rack mountable in standard 19" rack.
- Switch should support internal field replaceable unit redundant power supply from day 1.
- Switch should have minimum 2 GB RAM and 4 GB Flash.
- Switch should have dedicated slot for modular stacking, in addition to asked uplink ports. Should support for minimum 80 Gbps of stacking thoughput with 8 switch in single stack.

Performance :

- Switch shall have minimum 128 Gbps of switching fabric and 90 Mpps of forwarding rate.
- Switch shall have minimum 16K MAC Addresses and 250 active VLAN.
- Should support minimum 11K IPv4 routes or more
- Switch shall have 1K or more multicast routes.
- Switch should support atleast 16K flow entries
- Switch should support 128 or more STP Instances.
- Switch should have 6MB or more packet buffer.

Functionality :

- 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.
- Switch must have functionality like static routing, RIP, REP PIM, OSPF, VRRP, PBR and QoS features from Day1.
- Switch should support network segmentation that overcomes the limitation of VLANs using VXLAN and VRFs.
- Switch shall have 802.1p class of service, marking, classification, policing and shaping and eight egress queues.
- Switch should support management features like SSHv2, SNMPv2c, SNMPv3, NTP, RADIUS
- Switch should support IPv6 Binding Integrity Guard, IPv6 Snooping, IPv6 RA Guard, IPv6 DHCP Guard, IPv6 Neighbour Discovery Inspection
- Switch should support 802.1x authentication and accounting, IPv4 and IPv6 ACLs and Dynamic VLAN assignment Switch must have the capabilities to enable automatic configuration of switch ports as devices connect to the switch for the device type.
- 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.

Interface

- Switch shall have 24 nos. 10/100/1000 Base-T ports and additional 4 x 1/10 Gig SFP+ ports
- All 24 port should support PoE (802.3af) and PoE+ (802.3at) with a PoE power budget of 720 W.

Certification:

- Switch / Switch's Operating System should be tested for EAL 2/NDPP or above under Common Criteria Certification.

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Name of the Equipment : Layer 2 Switch (12 Port)

General Specifications

Architectrure:

- Switch should have minimum 12 X Gig Base-T ports with additional uplinks 2 x 1G SFP and 2 x 1G copper ports
- Switch should 12 Gigabit Ethernet(Full POE+), 2 x 1 Gig Copper and 2 x 10 Gig SFP+ with line rate forwarding performance

Performance Requirements:

- Switch shall have minimum 40 Gbps of switching fabric and 50 Mpps of forwarding rate.
- Shall have minimum 14K MAC Addresses.
- Shall have minimum 250 Active VLANs and 4,000 VLAN Ids support

IEEE Standards:

- 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.

Quality of Service (QoS) requirements and Security Features:

- Shall have 802.1p class of service, IP differentiated service code point (DSCP) and IP precedence.
- Switch should support marking, classification, policing and shaping. Should support strict priority queuing.
- Switch should support port security.
- DHCP snooping to allow administrator to ensure consistent mapping of IP to MAC address
- Dynamic ARP protection blocking ARP broadcasts from unauthorized hosts
- IP source guard to prevent IP spoofing attacks
- STP BPDU port protection to prevent forged BPDU attacks.
- STP Root Guard to protect the root bridge from malicious attacks or configuration mistakes.
- IPv6 First Hop Security.
- Should support 802.1x authentication and accounting with Dynamic VLAN assignment.
- Switch should support IPv4 and IPv6 ACLs, VLAN, Port and Time based access list with time ranges.

System Management and Administration:

- Configuration and management through the CLI, GUI, console, Telnet and SSH
- Switch should support SSHv2.
- Switch should support SNMPv2c, SNMPv3 and Remote monitoring (RMON).
- Network Time Protocol(NTP) or equivalent support
- Switch should support AAA using RADIUS and TACACS+.

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Name of the Equipment : Layer 2 Switch (8 Port)

General Specifications

Architecture

- Switch should have minimum 8 X Gig Base-T ports with additional uplinks 2 x 1G SFP and 2 x 1G copper ports
- Switch should 8 Gigabit Ethernet(Full POE+), 2 x 1 Gig Copper and 2 x 10 Gig SFP+ with line rate forwarding performance

Performance Requirements

- Switch shall have minimum 30 Gbps of switching fabric and 50 Mpps of forwarding rate.
- Shall have minimum 14K MAC Addresses.
- Shall have minimum 250 Active VLANs and 4,000 VLAN Ids support

IEEE Standards

- 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.

Quality of Service (QoS) requirements and Security Features

- Shall have 802.1p class of service, IP differentiated service code point (DSCP) and IP precedence.
- Switch should support marking, classification, policing and shaping. Should support strict priority queuing.
- Switch should support port security.
- DHCP snooping to allow administrator to ensure consistent mapping of IP to MAC address
- Dynamic ARP protection blocking ARP broadcasts from unauthorized hosts
- IP source guard to prevent IP spoofing attacks
- STP BPDU port protection to prevent forged BPDU attacks.
- STP Root Guard to protect the root bridge from malicious attacks or configuration mistakes.
- IPv6 First Hop Security.
- Should support 802.1x authentication and accounting with Dynamic VLAN assignment.
- Switch should support IPv4 and IPv6 ACLs, VLAN, Port and Time based access list with time ranges.

System Management and Administration

- Configuration and management through the CLI, GUI, console, Telnet and SSH
- Switch should support SSHv2.
- Switch should support SNMPv2c, SNMPv3 and Remote monitoring (RMON).
- Network Time Protocol(NTP) or equivalent support
- Switch should support AAA using RADIUS and TACACS+.

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Name of the Equipment : Wireless Access Point (Indoor)

General Specification

- Access Point shall support 4x4 MIMO on both radio interfaces
- Access Point shall be able to powered up using PoE (.af)
- Access Point shall support assurance, packet capture, RF sensing capabilities
- Access Point shall support application visibility and control
- Access Point shall support encrypted traffic visibility
- Access Point should have Bluetooth5 radio to support use casses of location, asset tracking and analytics.
- Access Point shall ship with metal-based mounting bracket for durability and reliability
- Access Point shall be able to leverage current Access Point mount kit and cable conduit
- Access Point shall support Console port that uses Standard Port (RJ-45) type connection
- Access Point should have 1x 100, 1000, 2500 Multigigabit Ethernet (RJ-45) – IEEE 802.3bz
- Access Point should have USB port for future requirement.
- Must have atleast 3 dBi Antenna gain on each radios
- Must Support data rate upto 5gbps.
- Must support minimum of 23dbm of transmit power in both 2.4Ghz and 5Ghz radios. And should follow the local regulatory Norms.
- Must support AP enforced load-balance between 2.4Ghz and 5Ghz band.
- Must incorporate radio resource management for power, channel and performance optimization
- Must have -93 dB or better Receiver Sensitivity.
- Must support Proactive Key Caching and/or other methods for Fast Secure Roaming.
- Must support Management Frame Protection.
- Should support locally-significant certificates on the APs using a Public Key Infrastructure (PKI).
- Must support the ability to serve clients and monitor the RF environment concurrently.
- Same model AP that serves clients must be able to be dedicated to monitoring the RF environment.
- Must be plenum-rated (UL2043).
- Must support 16 WLANs per AP for SSID deployment flexibility.
- Must support telnet and/or SSH login to APs directly for troubleshooting flexibility.
- 802.11e and WMM
- Must support QoS and Video Call Admission Control capabilities.
- Access point should be wifi 6 certified.

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Name of the Equipment : Wireless Access Point (Outdoor)

General Specification

- Access Point shall support 4x4 MIMO on both radio interfaces and MU-MIMO technology
- Access Point shall be able to support Multigigabit Ethernet, support up to 2.5 Gbps PHY speed using single Cat5e or above(Cat6, Cat6a, Cat7) cable
- Access Point shall be able to powered up using PoE (.af)
- Access Point shall have dedicated radio/chipset for spectrum monitoring capabilities, WIPS and off channel RRM without compromising and using the client serving radios.
- Access Point shall ship with metal-based mounting bracket for durability and reliability including accessories.
- Access Point should have 1x 100, 1000, 2500 Multigigabit Ethernet (RJ-45) – IEEE 802.3bz uplink, 1x Gigabit Ethernet SFP uplink
- AP must have standard RJ-45 console port
- Must have at least 6 dBi omni direction Antenna on each radios
- Must Support data rate upto 3Gbps.
- Must support minimum of 30 dbm of transmit power in both 2.4Ghz and 5Ghz radios. And should follow the local regulatory Norms.
- Must support AP enforced load-balance between 2.4Ghz and 5Ghz band.
- Must incorporate radio resource management for power, channel and performance optimization
- Must have -97 dB or better Receiver Sensitivity.
- Must support Proactive Key Caching and/or other methods for Fast Secure Roaming.
- Must support Management Frame Protection.
- Should support locally-significant certificates on the APs using a Public Key Infrastructure (PKI).
- Must support the ability to serve clients and monitor the RF environment concurrently.
- Same model AP that serves clients must be able to be dedicated to monitoring the RF environment.
- Must support 16 WLANs per AP for SSID deployment flexibility.
- Must support secure remote login to APs directly for troubleshooting flexibility.
- Should support 802.11e and WMM
- Must support QoS and Video Call Admission Control capabilities.
- Access point should be Wi-Fi 6 certified
- The Access point shall be IP67 and NEMA rated
- The Access point shall support operating temperature of -40 to 65°C
- The equipment shall support up to 100 MPH sustained winds & 165 MPH wind gusts.
- Wi-Fi AP devices and solution should support "IEEE-802.1x, WAP-2, WPA-3
- Wi-Fi AP devices and solution should support for 802.1Q VLAN.
- - Wi-Fi AP devices should facilitate auto channel allocation to avoid interfaces between APs.
- Wireless solution should support dedicated management VLAN for configuration
- The switching and wireless should be from same OEM

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List of Passive Part with their Qty.			
Sr.No.	**Items/Description**	**Qty**	**Unit(in Nos.)**
1	SC-LC Patch Cable	60	Nos.
2	Cat 6 UTP Cable	50	Box
3	Cat 6 24 Port Loaded Patch Panel	15	Nos.
4	UTP Patch Cord (3 Mtr)	200	Nos
5	UTP Patch Cord (1 Mtr)	200	Nos.
6	I/O with Gang box	200	Nos.
7	9 U Rack Wall Mount	15	Nos.
8	Conduit/Casing 1"	3000	Mtr

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SC-LC Patch Cable

- Length shall be 1meter
- All patch cords shall conform to ANSI/TIA-568C.3
- Cable should be Single modeOS2 9/125µ, Duplex type with bend insensitive fiber G.657.A1
- LSZH Sheath should comply flame test method as per IEC 60332-1
- Optical Performance of fiber patch cord:
- Insertion Loss: maximum 0.15 dB
- Return Loss: minimum 55.0 dB
- All patch cords should be factory terminated and packed.
- Should be RoHS Compliant

CAT-6 UTP Cable

- Category 6 4 pair LSZH cable should be compliant with TIA/EIA- 568- C.2
- Should be of 4 twisted pairs of 23 AWG solid conductors
- Should support network line speed up to 1 Gigabits per second.
- Shall be 4-pair Unshielded twisted pair with a cross filler/ isolator (+), meeting Category 6 tested to 250 MHz or more
- Should be ETL verified to TIA/EIA- 568- C.2 Category 6 standard for 250MHz (ETL certificate to be enclosed along with the bid)

Mechanical Characteristics:

- Construction: 4 pair unshielded cable should be constructed of 4 individual pairs.
- Conductor should be solid Copper
- Conductor Size should be 23 AWG (0.57 ± 0.2)
- Insulator should be Polyethylene/Polyolefin
- Jacket/ Sheath type should be LS0H (Low Smoke Zero Halogen)
- NVP should be 65% or better
- Delay Skew should be <45nS
- Should be certified by ETL. All certificates must be attached along with Bid.

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CAT 6 24 Port Loaded Patch Panel

- Should be supplied with individually replaceable 24 numbers Category-6 I/O unshielded Jacks complying as per the ANSI/TIA-568C.2
- Should be 19" rack mountable and of 1U height & complete with all mounting accessories
- Should have label holder/cover for identification of ports
- IDC Connector plastic housing should be polycarbonate.
- Operating Life should be Minimum 20 re-terminations and contact material should be copper alloy.
- Material should be CRS (cold rolled steel)
- Should be supplied with integrated rear cable management shelf as for cable strain relief.
- Should have provision for better cable dressing at the rear
- I/O operating Life should be minimum 750 insertion cycles and contact material should be copper alloy.
- I/O contact plating should be 50µ Gold/ 50µ Nickel minimum

UTP Patch Cord (1Mtr/3Mtr)

- Category 6 Equipment cords (Length – 1 & 3 Mtr)
- Conductors Should be of 4 twisted pairs of 24 AWG stranded copper for better flexibility
- Patch cords should conform to ANSI/TIA-568-C.2 for Cat 6
- Should have RJ-45 jacks with boot at both the ends.
- All patch cords should be factory crimped and packed.
- Should have LSZH jacket for safety
- Plug Insertion Life should be Minimum 750 times
- Shall be RoHS Compliant

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I/O With Gang Box

- Should be conform to Category-6 as per ANSI/TIA-568-C.2
- Should be support network line speeds up to 1 Gbps
- I/O operating Life should be minimum 750 insertion cycles and contact material should be copper alloy.
- I/O contact plating should be 50µ Gold/ 50µ Nickel minimum
- All information outlets for 22- 24 AWG copper cable should be use insulation displacement connectors (IDC)
- Operating Life should be minimum 750 insertion cycles
- Operating Life should Minimum 20 re- terminations.
- Plastic Housing must be Polycarbonate, UL94V- 0 rated
- I/O should be terminated using industry standard with tool-less or punch down method.
- Single square plate, 86mmx86mm
- Faceplate should be Spring-loaded shutter or cap to protects from dust and contaminants.
- Write on labels in transparent plastic window – supplied with plate
- Should be able to support variety of jacks – UTP, STP, Fiber, Coax etc.

9U Rack Wall Mount

- Rack 9U 550mm with Front Glass Door (tinted, Toughened) with Lock & Key
- Rack Should be supplied with 5 No. PVC 1U Cable manager, Mounting Hardware = 3 Nos (Set of 20)
- Rack Must Be supplied with PDU 5/15 Amp 6 socket with MCB
- Rack Should be supplied with Two Nos. of Fans

Please Note: The quantity given above is tentative. Actual quantity may vary.

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Budgetary Quotation for Upgradation of Wi-Fi Infrastructure						
Sr.No.	**Items/Description**	**Qty**	**Unit**	**Unit Price (in Rs)**	**G.S.T (on Unit Rs.)**	**Total Price (inclusive of G.S.T)**
1	Wireless Controller	1	Nos.			
2	Layer 3 Switch (Core Switch - 24 Port)	1	Nos.			
3	Layer 2 Switch (48 Port)	1	Nos.			
4	Layer 2 Switch (24 Port)	8	Nos.			
5	Layer 2 Switch (12 Port)	7	Nos.			
6	Layer 2 Switch (8 Port)	25	Nos.			
7	Wireless Access Point (Indoor)	180	Nos.			
8	Wireless Access Point (Outdoor)	3	Nos.			
9	SC-LC Patch Cable	60	Nos.			
10	Cat 6 UTP Cable	50	Box			
11	Cat 6 24 Port Loaded Patch Panel	15	Nos.			
12	UTP Patch Cord (3 Mtr)	200	Nos			
13	UTP Patch Cord (1 Mtr)	200	Nos.			
14	I/O with Gang box	200	Nos.			
15	9 U Rack Wall Mount	15	Nos.			
16	Conduit/Casing 1"	3000	Mtr			
17	Installation, Testing, Commissioning, Integration, Penta Scanning, Documentation, Training etc.	1 {As Per Actual)	Whole Job			
Total in Rs.						
Service Charge in Rs.						
G.S.T on Service Charge (As Applicable) Rs.						
Grand Total Rs.						

Please Note: The quantity given above is tentative. Actual quantity may vary.

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