

(Lot.1) SD-WAN System ဝယ်ယူတပ်ဆင်ခြင်းလုပ်ငန်း (Trunkey)

စဉ်	အမျိုးအမည်	အရေအတွက်
၁	<p>FortiGate (Forti WAN-1000B) (Load Balancer)</p> <p>FortiWAN-1000B Link Load Balancing System supports Tunnel Routing. Base System 1Gbps throughput, upgradeable to 2Gbps. 3x GE RJ45 ports, 4 x GE SFP ports, 1 x RJ45 HA Port, 1 x RJ45 Serial Console port, 1 x 1TB HDD Storage, Redundant PSU</p> <p><i>3 Years - 24x7 FortiCare Support</i></p>	1 Set
၂	<p>Cisco WS-C3750G, 48TS-48xFE, 4xSFP</p> <p>Cisco Catalyst switch 3750 48 10/100/1000T + 4 SFP + IPB Image</p> <p><i>3 Years Hardware Support</i></p>	2 Set
၃	<p>Edge Router</p> <p>Cisco ASR 1001-X Crypto,6GE, Dual-PS with DNA Support</p> <p>SNTC-8X5XNBD Cisco ASR 1001-X Crypto,6GE, Dual-PS wit 1GB USB Flash Token</p> <p>Cisco DNA Advantage Cloud License, Agg 5G, 3YCisco ONE VWAAS RTU for 6000 Connections Term License</p> <p>Cisco Umbrella for DNA Advantage</p> <p>Network Plug-n-Play Connect VBOND Provisioning for SDWAN</p> <p>Power Cord Jumper, C13-C14 Connectors, 2 Meter Length</p> <p>Cisco ASR1001-X SD-WAN IOS XE Universal</p> <p>Embedded Support - Cisco DNA Advantage Cloud License</p> <p><i>3 Years Hardware Support and License</i></p>	2 Set
၄	<p>Layer2 Access Switch</p> <p>Catalyst 2960-X 24 GigE, 2 x 10G SFP+, LAN Base</p> <p>SNTC-8X5XNBD Catalyst 2960-X 24 G</p> <p>Catalyst 2960-X FlexStack Plus Stacking Module</p> <p><i>3 Years Hardware Support</i></p>	2 Set

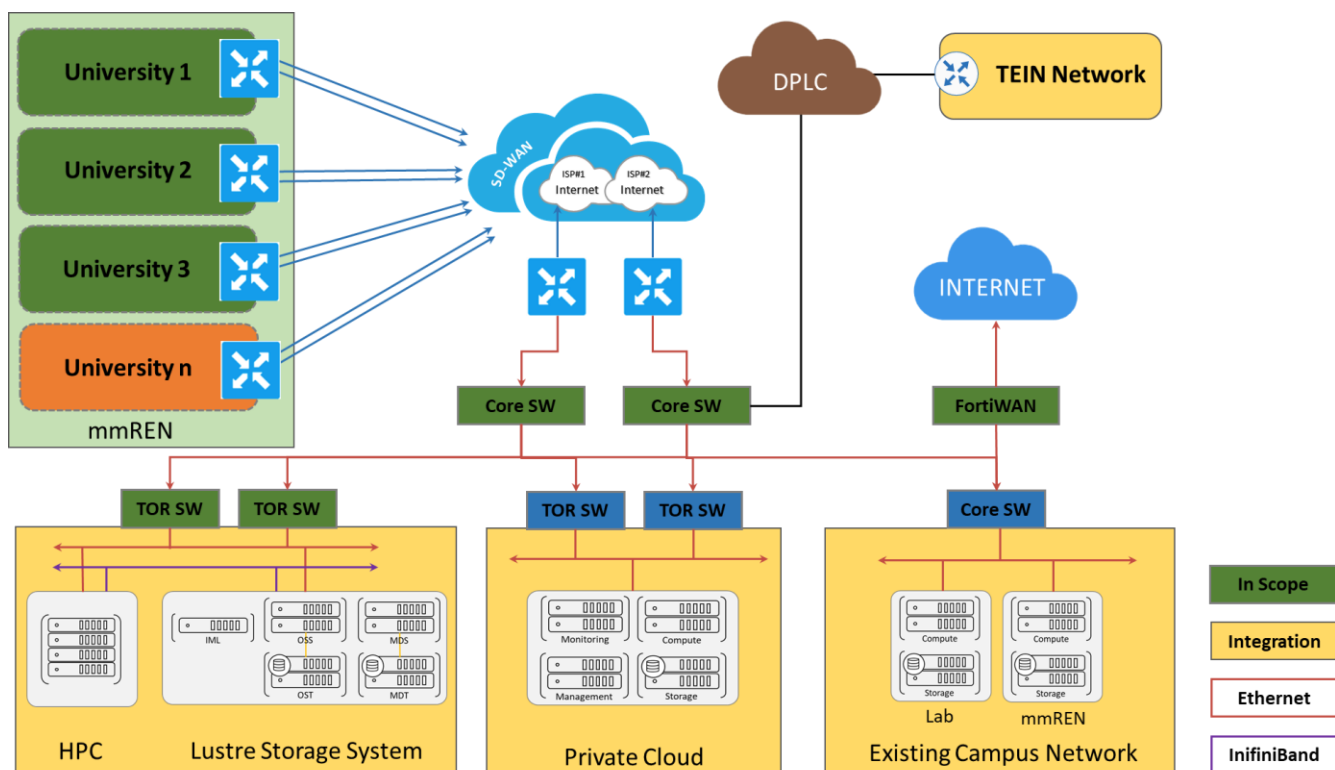
စဉ်	အမျိုးအမည်	အရေအတွက်
၅	<p>Cisco Nexus Switch</p> <p>Nexus 93180YC-EX with 48p 10/25G SFP+ and 6p 100G QSFP28</p> <p>SNTC-8X5XNBD Nexus 9300 with 48p 25GBASE-CU SFP28 Cable 1 Meter</p> <p>LAN Enterprise License for Nexus 9300 Platform</p> <p>SWSS UPGRADES LAN Enterprise License for Nexus 9300 P1</p> <p><i>3 Years Hardware Support and License</i></p>	2 Set
၆	<p>Cisco Nexus Switch</p> <p>Nexus 3524x, 24 10G Ports</p> <p>SNTC-8X5XNBD Nexus 3524x, 24 10G</p> <p>Nexus 3524 Layer 3 LAN Enterprise License</p> <p>SWSS UPGRADES Nexus 3524 Layer 3 LAN Enterprise License</p> <p><i>3 Years Hardware Support and License</i></p> <p>4x 1000BASE-LX/LH SFP transceiver module, MMF/SMF, 1310nm, DOM</p> <p>4x 1000BASE-SX SFP transceiver module, MMF, 850nm, DOM</p> <p>8x 1000BASE-T SFP transceiver module for Category 5 copper wire</p> <p>32x 10GBASE-SR SFP Module</p> <p>9x 10GBASE-CU SFP+ Cable 3 Meter</p> <p>20x 10GBASE-CU SFP+ Cable 5 Meter</p> <p>15x Cat-6 Patch Cord Cable 5m</p> <p>32x Fiber Patch Cord Cable, Multi-Mode, LC-LC, Fiber Cable 5m</p> <p>Setup, Install, Configure, Deploy SD-WAN; Integration and Maintenance Service</p>	2 Set
၇	<p>Edge Router</p> <p>ISR 1100 8 Port Dual GE LTE LA with DNA Support</p> <p>SNTC-8X5XNBD ISR 1100 8 Port Dual GE LTE LA with DNA</p> <p>LTE articulating dipole antenna 698-960,1448-1511,1710-2690</p> <p>Cisco 1100 Series Router Rackmount Wallmount Kit</p> <p>Cisco DNA Essentials Cloud License, Agg 20M, 3Y</p> <p><i>3 Years Hardware Support and License</i></p>	3 Set

မှတ်ချက်

အမှတ်စဉ် (၇)သည် UCSY မှ လိုအပ်ချက်အရ ကူညီပံ့ပိုးပေးရန် ဖြည့်စွက်တောင်းဆိုထားခြင်းဖြစ်ပါသည်။

Technical Specification and Requirement

UCSY desires to purchase IT equipment to ease the operations and solution must be able to scale out and support the future connectivity between UCSY and all universities in the country. The recommended overall design architecture for SD-WAN solution is below:



The following technical requirement are needed to deploy SD-WAN for mmREN:

- The solution shall provide a single WAN fabric for simpler and easier security and policy maintenance across thousands of sites.

- The solution shall include the ability to support the network topologies like Hub and Spoke, Full mesh, Partial/Regional mesh and Dynamic mesh.
- The solution should be able to build connections dynamically between two SD-WAN devices, leveraging multiple links and apply logic for best path selection, traffic switching, QoS and dynamic link bonding.
- The solution should continuously check the link flaps and link quality parameters and traverse the traffic accordingly, if the link is not stable then put the link in monitor state, once the link is stable for particular time then start sending traffic on that link. Link flaps or link up/down must not affect the traffic if another link is available.
- The solution should support encryptions for end-to-end communication.
- The solution should have GUI (Graphical User Interface) for Report Generation.

The following are preferred attributes for the solution to be proposed in response to SD-WAN for mmREN.

- All network equipment as specified in this document as minimum specification should be proposed.
- All equipment must include all licenses for full operation as specified in technical specification.
- Product must not announce end of sale product from completion date of commissioning.
- All equipment must have 8x5xNBD next business day support from vendor.
- All equipment must have 3 years equipment warranty and technical support.
- All equipment must include all accessories for full operation, integration, installation and mounting but not limit to rack mount, etc.
- All equipment plug must be C14 type.

Scope of Work (SOW)

The bidder shall provide proposed design, installation and configuration to the whole infrastructure devices. The mainly project site location will be at No. (4) Main Road, Shwe Pyi Thar Township, University of Computer Studies, Yangon (UCSY) and some installation and configuration must be done at three universities. Proposed SOW should include (but not limited to) the scope as follow:

- Provide proposed setup design and consultation service
- Setup to mount the devices in the existing network rack.
- Cable connectivity between the SD-WAN, switch, patch panel and test reachability of LAN users
- Configuration of SD-WAN devices.

- Provide end to end network connectivity testing.
- Include a comprehensive security WAN design scenario which connection between the UCSY and three universities.
- Setup Forti WAN Configuration.
- Perform integration with mmREN network, UCSY existing systems and TEIN network.
- Perform User Acceptance Test.
- Provide the training plan and materials for SD-WAN
- Provide technical trainings to UCSY's employee.
- Provide a project management plan for the entire project.
- Provide for the successful design, implementation of the Network Infrastructure and technical support.