

***Section VII. Technical Specifications***

## TECHNICAL SPECIFICATIONS

Bidders must state “**Comply**” in the column “**Statement of Compliance**” against each of the individual parameters of each “Specifications.”

<b><u>LOT No. 1</u></b>					
<b><u>IT EQUIPMENT AND SOFTWARE APPLICATIONS</u></b>					
<b>1. <u>All in One Desktop Computers (High-end 1)</u></b>					
<b>Minimum Technical Specifications</b>		<b>Qty.</b>	<b>Delivery Time</b>	<b>Payment Mode</b>	<b>Statement of Compliance</b>
Processor	At least 3.0GHz (Turbo Boost up to 3.5GHz)	17	Delivered and completely installed within forty-five (45) calendar days from receipt of the Notice to Proceed.	One Time Payment	
Memory	At least 8GB of 2400MHz DDR4 memory				
Storage/ Hard Disk	At least 1TB (5400-rpm) hard drive				
Graphics	At least 2GB of VRAM				
Network Interface	10/100/1000BASE-T Gigabit Ethernet (RJ-45 connector)				
Video Support <u>for the following:</u>	At least HD camera, simultaneously supports full native resolution on the built-in display at millions of colors (21.5-inch) or 1 billion colors (21.5-inch 4K) and Video Support for the following:  One 5120-by-2880 (5K) external display at 60Hz with support for 1 billion colors, or  Two 3840-by-2160 (4K UHD) external displays at 60Hz with support for 1 billion colors, Two 4096-by-2304(4K) external displays at 60Hz with support for millions of colors HDMI, DVI, and VGA output supported using adapters.				

Display Screen	At least 21.5-inch (diagonal) 4K display 4096-by-2304 resolution with support for one billion colors 500 nits brightness/ Wide color				
Connections and Expansions	At least 3.5 mm headphone jack card slot At least Four USB 3 ports (compatible with USB 2) Two (USB-C) ports, with support for: DisplayPort (up to 40 Gbps) USB 3.1 Gen 2 (up to 10 Gbps) HDMI, DVI, and VGA supported using adapters 10/100/1000BASE-T Gigabit Ethernet (RJ-45 connector)				
Wireless	802.11ac Wi-Fi wireless networking IEEE 802.11a/b/g/n compatible Bluetooth 4.2 wireless technology Wireless Keyboard and Mouse				
Pre-loaded Operating System	Latest Operating System				
Warranty	1 year warranty				

## 2. Desktop Computers (High-end 2)

Minimum Technical Specifications		Qty.	Delivery Time	Payment Mode	Statement of Compliance
Processor	<b><u>At least 3.0 Ghz Processor, (8M Cache, 8C/8T)</u></b>	76	Delivered and completely installed within forty-five (45) calendar days from receipt of the	One Time Payment	
Memory	At least 8GB DDR4				
Optical Drive	<b><u>DVD-RW (manufacturer's standard)</u></b>				
Storage/ Hard Disk	At least 1TB Sata 7200 RPM HDD				
Audio In/Out Jacks	Integrated				
Network Interface	Gigabit Ethernet				

	At least Wi-Fi 802.11 ac, <b><i>built-in</i></b>		Notice to Proceed.		
Rear Video I/O connectors	Integrated Graphics				
Display Screen	At least 23" LED Monitor, At least 1280 x 800 resolution				
Pre-loaded Operating System	Latest 64Bit Pro Operating System				
Pointing Device	Wireless or USB Optical Mouse				
Standard I/O Ports	At least 2 USB ports (at least 1 USB 3.0 port) , Card Reader, HDMI				
Input Device	Wireless or USB Keyboard				
Others	Internal Speaker or External Speaker				
Warranty	1 Year Warranty				
<b>3. Laptops (High-end 1)</b>					
<b>Minimum Technical Specifications</b>		<b>Qty.</b>	<b>Delivery Time</b>	<b>Payment Mode</b>	<b>Statement of Compliance</b>
Processor	At least 1.6GHz, Turbo Boost up to 3.6GHz, with 4MB L3 cache	32	Delivered and completely installed within forty-five (45) calendar days from receipt of the Notice to Proceed.	One Time Payment	
Memory	At least 8GB of 2133MHz onboard memory				
Storage / Hard Disk	At least 128GB PCIe-based SSD				
Video camera	At least 720p HD camera				
Graphics / Video Processor	Integrated or shared graphics				
Wireless	802.11ac Wi-Fi wireless networking; IEEE 802.11a/b/g/n compatible, Bluetooth wireless.				
Audio	Stereo speakers 3.5 mm headphone jack				
Display Screen	At least 13.3-inch diagonal LED-backlit display with IPS technology; At least 2560-by-1600 native resolution at 227 pixels per inch with support for millions of colors				
Operating System	Latest Operating System				
Battery and Power	Up to 12 hours wireless web Up to 13 hours movie playback Up to 30 days of standby time				

	At least Built-in 50.3-watt-hour lithium-polymer battery 30W USB-C Power Adapter; USB-C power port				
Standard I/O Ports	At least Two (USB-C) ports with support for: Charging, Display Port (up to 40 Gbps) USB-C 3.1 Gen 2 (up to 10 Gbps)				
Warranty	1 Year Warranty				
<b>4. Laptops (High-end 2)</b>					
<b>Minimum Technical Specifications</b>		<b>Qty.</b>	<b>Delivery Time</b>	<b>Payment Mode</b>	<b>Statement of Compliance</b>
Processor	At least (8M Cache, up to 4.00 GHz)	32	Delivered and completely installed within forty-five (45) calendar days from receipt of the Notice to Proceed.	One Time Payment	
Memory	At least 8B DDR4				
Storage /Hard Disk	At least 1TB SATA Hard Disk Drive				
Graphics/Video Processor	Integrated or shared graphics				
Network Interface	At least 802.11ac Wi-Fi, LAN port Bluetooth 4.0				
Display Screen	15.6" or below HD LED Display. At least 1280 x 800 resolution				
Operating System	Latest 64Bit Pro Operating System				
Battery	At least 3 Cell Battery				
Standard I/O Ports	At least 2 USB ports (at least 1 USB 3.0 port), Card Reader, HDMI				
Others	Free laptop bag				
	Weight: 3.5Kg or below				
Warranty	1 Year Warranty				

<b>5. Latest Licensed Software Applications</b>					
<b>Minimum Technical Specifications</b>		<b>Qty.</b>	<b>Delivery Time</b>	<b>Payment Mode</b>	<b>Statement of Compliance</b>
Software Applications	Latest (Word processing, spreadsheet & slides presentation) for Business, <b>with individual DVD installer</b> without annual fee subscriptions, installable with the same CD key. 49 licenses for Mac 108 licenses for Windows Total Licenses: 157	157	Delivered and completely installed within forty-five (45) calendar days from receipt of the Notice to Proceed.	One time payment	
<b>6. Latest Licensed Design Applications</b>					
<b>Minimum Technical Specifications</b>		<b>Qty.</b>	<b>Delivery Time</b>	<b>Payment Mode</b>	<b>Statement of Compliance</b>
Multimedia Editing Softwares	<b><u>Perpetual license for Suite including the following applications:</u></b> *Design images and composition with world-class tools *Video editing software for film, TV, and the web. Creative tools, integration with other multimedia apps and services, and the power to help you craft footage into polished films and videos in one seamless workflow. *Create vector-based graphics and illustrations for print, web, video, and mobile. *Create custom-branded graphics, web pages, and video stories in minutes. *Easily create high quality, photorealistic 3D images. *Browse, organize, and search your photos and design files in one central place.	16	Delivered and completely installed within forty-five (45) calendar days from receipt of the Notice to Proceed.	One time payment	

<b>LOT No. 2</b>					
<b>OTHER IT EQUIPMENT and SECURITY APPLICATIONS</b>					
<b>7. Bandwidth Management Appliance</b>					
<b>Minimum Technical Specifications</b>		<b>Qty.</b>	<b>Delivery Time</b>	<b>Payment Mode</b>	<b>Statement of Compliance</b>
Identifying user	Must support user identification base on IP, MAC, and hostname.	1	Delivered and completely installed within forty-five (45) calendar days	One time payment	
User account importing	CSV file user account information import, and support user synchronization with LDAP, database and H3C CAMS Server		from receipt of the Notice to Proceed.		
Main authentication	Must support password based, SMS, WeChat, QR code, Facebook, LDAP, RADIUS, Pop3, CAS, H3C CAMS authentication.				
Integration and SSO option	Must support single sign-on authentication base on Active Directory, Radius POP3, Proxy Web Server, HTTPAPI, and Database Server.				
Account attribution	Must support custom account attribution and access control base on account attribution.				
Account binding Access control, Application control	Must support IP, MAC bind with user account. Application Database must support more than 2500 app. Rules. Include cloud, web and mobile application categories and self-define app rules. Database application rule update: < 1 mos.				

URL filter	<p>Must support 10 (ten million) URLs of URL database:                  Sub-filter categories includes: e.g. pornography, gambling, games and illegal drugs.                  Must support self-define URL groups.                  Must support websites filter base on URL, keyword search and file types. Support URL redirect if system blocks illegal URL.                  Support page customization.</p>				
Enhanced email control	<p>Must support control and audit of email base on source address, destination address, keywords in email, keywords in body/title, and attachment type/size/count.</p>				
	<p>Must support blocking and auditing of Gmail, Yahoo mail, Hotmail via Fox mail, Outlook, and Flash mail client.                  Must support blocking and auditing of web mail base on sender and receiver information, key word, attachment file type for application such as Exchange and Hotmail.</p>				
Enhanced IM control	<p>Must support comprehensive management and IM tools. (Yahoo, Google-talk, web-MSN, encrypted IM such as Skype, web-WeChat, WeChat, Facebook messenger, Line, Telegram, WhatsApp messenger and QQ).</p>				
Enhanced social media application control	<p>Must support encrypted social media application management (Facebook, Twitter, Instagram, LinkedIn).</p>				



Enhanced Forums Management	Must support forum identification and control e.g. detik.com, compass.com: support content filtering based on key words. Support forums and web sites auditing including records of destination URL, title, content and content search based on key word.				
key words filtering	Must support keywords filtering for search engine (Google, Yahoo, and Bing).				
SSL traffic control	Support SSL protocol application identification and control for Facebook, Twitter, You tube, Google search, Dropbox, Skype, WeChat, web-WeChat, QQ, Facebook messenger, Line, Telegram, WhatsApp, and HTTPS based website (Desktop/Mobile)				
Proxy control	Must support anti-proxy function: proxy tools control and identification: (free Gate, Ultra surf, Psiphon, TOR, Free VPN, Green VPN, Opera Turbo, Tuna Proxy, Ways online, Zen mate, Ad Net, VPN123 ,secure vpn.)				
BANDWIDTH MANAGEMENT Dynamic bandwidth management Advanced P2P control	Support dynamic bandwidth management: Average allocation/dynamic allocation in single user traffic pipe. Support accurate identification and management of known variant of encrypted and unknown P2P behaviors. (Xunlei P2P, BT, eMule, Ares, Bit Torrent sync, P2P-NAT, P2P Behavior)				
Report center, Report objects	Support logs search base on time, IP address, end point devices, application flow/action.				

Traffic ranking	Support application traffic ranking, URL category traffic ranking, URL traffic ranking, application duration ranking, URL category traffic ranking, URL traffic ranking, file upload ranking, IM ranking, Email and microblog ranking, term search ranking, and endpoint device ranking.				
Traffic trend	Support application access trend: URL category access trend, TOP talks URL trend, endpoint access trend.				
Real-time report Content log	Support Real-time monitor: CPU/hard disk/ traffic/ connection / session status, online user information, traffic ranking, connection ranking and real-time utilization visibility of bandwidth channels.				
Customizable risk report	Support content logging: IM chat (Gtalk, Skype, QQ, and Yahoo! Messenger); SMTP and Web mail content and attachment (Gmail, Yahoo, Exchange), keyword search (Google, Bing).				
API interface Proxy Tools Block, Multiple Manage Methods	Must support API interface for data export to 3rd party system.  Support multiple management of anti-proxy. Identify, warn and block user’s login using proxy tools. Ability to block proxy tools download link.				
Multiple proxy tools block	Must support anti-proxy function, support proxy tools block. (FreeGate, Ultrasurf, Psiphon, TOR, FreeVPN, GreenVPN, Opera Turbo, TunaProxy, Waysonline, Zenmate, AdNet, VPN123, secure vpn.)				
Blocking Log	Support proxy tools blocking log.				
Virtualized bandwidth management, Multi- platform Integration	Support separate software/hardware architecture e.g. x86 server				

Hardware Specifications	Device Dimension: At least 2U				
	At least HD Capacity: 1TB				
	Maximum Concurrent Users: 6000 user				
	Power (Watt): 350W				
	Hardware Bypass port (Copper): 3 pairs				
	Ethernet port: 6 (10/100/1000 Base-T)				
	Serial port: RJ45x1				
	USB port: 2				
	Application Layer Throughput: 1.2 Gbps				
	FW Throughput : 2.1Gbps				
External Switch	48 port Gigabit Manageable Switch, <b><u>Non-POE (separate unit)</u></b>				
Others	Installation, Configuration and End-user free Training				
Warranty	3 years hardware and subscriptions license <b><u>including External Switch</u></b>				
<b>8. Wireless Controller (with 25 Access point Licenses)</b>					
<b>Minimum Technical Specifications</b>		<b>Qty.</b>	<b>Delivery time</b>	<b>Payment Mode</b>	<b>Statement of Compliance</b>
Hardware Features	At least 1U rack mountable Easy discovery from PC using UPnP Manage multiple locations Two 1000 Mbps ports for full redundancy Lifetime warranty coverage	1	Delivered and completely installed within forty-five (45) calendar days from receipt of	One time payment	

Software Features	Central control and configuration of up to 500 APs Support for 1,024 WLANs Integrated DHCP server Easy-to-use setup wizard Ultra-intuitive GUI 1+1 redundancy with auto synchronization Smart Mesh Networking control and monitoring Real-time client admission control Load-balancing, admission control Customizable dashboard Dynamic RF channel and power mngt. Quality of Service with WLAN prioritization, band steering and airtime fairness WISPr Smart Client Support Band balancing Integrated captive portal Native Active Directory/RADIUS/LDAP support Local authentication database Dynamic VLAN assignment Guest access BYOD, Zero IT, Dynamic generation of unique Pre-Shared Keys Rogue AP detection and graphical map view location services support Hotspot authentication using WISPr	the Notice to Proceed.			
Licenses	With licensed for 25 Access Points				
Compatibility	<b><u>Wireless Controller must be compatible with the existing Controller (Zone Director I200) and Access Point (Ruckus Zoneflex R300 and R310).</u></b>				
Warranty	1 Year Warranty				
Others	Installation, Configuration & End user free Training				
<b>9) Network Video Recorder (NVR) for CCTV Storage</b>					
<b>Minimum Technical Specifications</b>		<b>Qty.</b>	<b>Delivery Time</b>	<b>Payment Mode</b>	<b>Statement of Compliance</b>
Video/Audio Input	IP Video Input 64-ch Two-way Audio Input 1-ch, BNC	1	Delivered and completely	One Time Payment	

Network	Incoming Bandwidth 384Mbps Outgoing Bandwidth 384Mbps Remote Users 128 Protocols P2P, UPnP, NTP, DHCP, PPPoE		installed within forty-five (45) calendar days from receipt of the Notice to Proceed.		
Video/Audio Output	HDMI/VGA Output VGA: 1920x1080p/60Hz, 1920x1080p/50Hz, 1600x1200 /60Hz, 1280x1024/60Hz, 1280x720 /60Hz, 1024x768/60Hz				
	HDMI1:4K(3840x2160)/30Hz, 1920x1080p /60Hz, 1920x1080p/50Hz, 1600x1200/60Hz,1280x1024/60Hz 1280x720 /60Hz, 1024x768 /60Hz				
	HDMI2: 4K (3840x2160)/30Hz, 1920x1080p/60Hz, 1920x1080p/50Hz, 1600x1200/60Hz, 1280x1024 /60Hz, 1280x720 /60Hz, 1024x768 /60Hz				
	Recording Resolution 12MP/8MP/6MP/5MP/4MP /3MP /1080p/960p/720p/D1/2CIF/ CIF				
	Audio Output 1-ch, BNC				
	Synchronous Playback 16-ch				
	Corridor Mode Screen 3/4/5/7/9/10/12/16/32				
Decoding	Decoding format Ultra 265, H.265, H.264				
	Live view/Playback 12MP/8MP/6MP/5MP/4MP /3MP/ 1080p/960p/720p/D1/2CIF/ CIF Capability 4 x 12MP@20, 4 x 4K@30, 16 x 1080p@30, 36 x 720p@30, 64 x D1				
Hard Disk	10 pcs SATA 10TB HDD SATA 16 SATA interfaces HDD can support up to 10TB for each HDD Esata 1 eSATA interface miniSAS 2 miniSAS ports				

Features	VCA Detection Face detection, Intrusion detection, Cross line detection, Audio detection, Defocus detection, Scene change detection, Auto tracking VCA Search Face search, Behavior search Statistical Analysis People counting			
Disk Array	Can support Array Type RAID 0/1/5/6/10/50/60			
External Interface	Network Interface 4 RJ-45 10M/100M/1000M adaptive Ethernet Interface 2 1000M SFP Ethernet Interface Serial Interface 1 x RS232, 1 x RS485 USB Interface Rear panel: 4 x USB3.0 Alarm In 24-ch Alarm Out 8-ch Decoding Card (optional) 2 slots (4-ch HDMI or 6-ch HDMI outputs per card) Power Output 12V			
Power	Power Supply 100 ~ 240V AC Power Consumption: ≤ 50 W 2 units redundant power supply			
Compatibility	NVR must be compatible with the third-party IP cameras supported* <u>*existing IP CCTV cameras and NVR are AVTECH and UNIVIEW brands</u>			
	with ONVIF conformance: Profile S, G, C, Q, A, T			
Others	Installation, Configuration & End user free Training			
Warranty	1 year			

**10. Two-Factor Authentication (2FA)**

Minimum Technical Specifications		Qty.	Delivery Time	Payment Mode	Statement of Compliance
Compatibility	Word press (at least version 5.x)	1	Delivered and completely installed within forty-five (45)	One time payment	
User Accounts	At most 50 users				
Multi-Factor Authentication (MFA)	Supported				

Two-Factor Authentication Methods	At least: Universal 2-Factor (U2F) SMS Passcodes Push Notification Phone Callback Security Tokens Bypass Codes	calendar days from receipt of the Notice to Proceed.	
Features	Works when no cellular coverage		
Device Support	Smartphones, Desktops		
Code Generation Algorithm	Time-based One-Time Passcodes; HMAC-based One-Time Password		

**11. Secure Socket Layer (SSL) Certificate**

Minimum Technical Specifications		Qty.	Delivery Time	Payment Mode	Statement of Compliance
Validation type (Trust Level)	Extended Validation	2	Delivered and completely installed within forty-five (45) calendar days from receipt of the Notice to Proceed.	One time payment	
Signature Algorithm Strength	At least SHA-256 with ECC option				
Key Encryption Strength	At least 2048-bit				
Cryptographic Protocol Version	At least TLS 1.2				
Compatibility	All browsers and devices				
Underwritten Warranty	At least USD 1,500,000				
OTHERS:					
Certificate Provider Qualifications	Global Public Certification Authority				
Vendor Qualifications	<ul style="list-style-type: none"> <li>Local technical support team</li> <li>Support provision from 9AM to 6PM Monday thru Friday</li> <li>Local support availability thru phone and email</li> </ul>				
SSL/Website Security Checker with evaluation reports	Included				
Inclusive features	<ul style="list-style-type: none"> <li>Clickable Secure Site Seal</li> <li>Free Certificate Inventory Tool (CIT) Secure domain.com with and without www</li> </ul>				

<b>12. Uninterruptible Power Supply (UPS)</b>					
<b>Minimum Technical Specifications</b>		<b>Qty.</b>	<b>Delivery Time</b>	<b>Payment Mode</b>	<b>Statement of Compliance</b>
Rating (VA/W)	20kVA/16kW	1	Delivered and completely installed within forty-five (45) calendar days from receipt of the Notice to Proceed.	One time payment	
Format	Tower				
<b>Electrical Characteristics</b>					
Technology	Online double conversion				
Input voltage	220/230/240V				
Input voltage range without using batteries	176-276V without derating (up to 110-276V with derating)				
Output voltage/THD U	220V/230V/240V $\pm 2\%$ , THDU				
Input frequency range	45Hz-66Hz, 50/60Hz auto selection				
Efficiency	Up to 93% in Online mode, 97% in ECO mode				
Short circuit current	273A				
Overload capacity	105%-110%:5min, 110% 130% : 1min, 130%-150% :				
	10s, >150% : 100ms				
<b>Connections</b>					
<b>Input</b>	Terminal block				
<b>Outputs</b>	Terminal block				
<b>Typical backup times at 50% and 75% load</b>					
9E	15/9				
9E + 1 EBM	27/19				
9E + 4 EBM	82/54				
<b>Communication</b>					
Communication ports	1USB port + 1 RS232 serial port (USB and RS232 ports cannot be used simultaneously)				
Communication slot	1 slot for Network-MS, ModBus-MS or Relay-MS cards				
Software	Intelligent UPS Software				
<b>Operating conditions,</b>					
<b>Standards and Approvals</b>					
Operating temperature	0 to 40°C				
Noise level	<55dB				
Safety	IEC/EN 62040-1				
EMC, Performance	IEC/EN 62040-2				
Approvals)	CE, CB report (TUV)				



<b>Rack</b>				
Managed Rack	Outlet grip plug retention, color-coded outlet sections, branch circuit protection			
Warranty	1 year			
<b>13. Satellite Wifi Hotspot</b>				
<b>Minimum Technical Specifications</b>		<b>Qty</b>	<b>Delivery Time</b>	<b>Payment Mode</b>
Main unit		2	Delivered and completely installed within forty-five (45) calendar days from receipt of the Notice to Proceed.	One time payment
Geographic Coverage	At least Asia and Europe			
Network	At least 2 Geostationary Satellites			
Firmware Version	At least includes English			
Main power supply adapter (AC Power Range)	Minimum of At least 100V Maximum of At least 240V			
Battery Life - Talk Time	At least up to 3 hours			
Battery Life - Standby Time (With WIFI)	At least up to 9 hours			
Battery Life - Standby Time	At least up to 70 hours			
Services	At least Satellite calls, SMS and data			
Compatibility	At least iOS and Android			
Inclusions	At least SIM, charger, stand, user manual			
Satellite Data Speed	At least up to 60 kbps of Download Speed At least up to 15 kbps of Upload Speed			
Weight	At most 300 grams			
Dimension	At most 169 x 75 x 42 mm			
SOS/Assistance Button	Included (if applicable)			
Warranty / Liability Program	Included (if applicable)			
Warranty	1 year			
Inclusive of SIM with US\$120 preload value valid for 365 days (VAT inclusive)				
Additional load for Data	250 units of additional load	4		

<b>14. Satellite Phones</b>					
<b>Minimum Specifications</b>		<b>Qty</b>	<b>Delivery Time</b>	<b>Payment Mode</b>	<b>Statement of Compliance</b>
Geographic Coverage Network Frequency Firmware Version PC Compatibility (for Firmware upgrades) Battery Life - Talk Time Battery Life - Standby Time Satellite Antenna Services Inclusions Weight Dimension Network features Organizer features Warranty / Liability Program	At least Asia and Europe L-band At least includes English Windows  At least up to 6 hours At least up to 80 hours Omni-directional At least Satellite calls and Satellite SMS At least SIM, charger, stand, user manual At most 186 grams At most 128 x 53 x 27 mm At least: Voice mail At least: World time Included (if applicable)	2	Delivered and completely installed within forty-five (45) calendar days from receipt of the Notice to Proceed.	One time payment	
Warranty	1 year				
*Inclusive of SIM with US\$120 preload value valid for 365 days (Vat Inclusive)					
Additional load for Voice	250 units of additional load	4			
<b>NOTHING FOLLOWS</b>					

I hereby commit to comply and the deliver all of the above requirements in accordance with the above-stated schedules.

\_\_\_\_\_  
*Name of Company/Bidder*

\_\_\_\_\_  
*Signature over Printed Name of Representative*

\_\_\_\_\_  
*Date*