TENDER FORM FOR THE SUPPLY OF WIFI NETWORK (to be completed in duplicate)

Name and Address of School : Islamic Kasim Tuet Memorial College
22 Tsui Wan Street, Chai Wan, Hong Kong.
School Reference No. : IKTMC21/22-Wifi-01

Tender Closing Date and Time : 12:00 noon, 3 Aug, 2022

PART I : Contents of Tender

Particulars		Quantity	Unit Amount (HKD)
IKTMC Wifi Network with 1GB bandwidth Internet 3-year subscription			
a)	WiFi Controllers	1	
b)	*48 sets Access Point – Part X*		
c)	*Firewall*		
d)	Core Switch		
e)	Access PoE Switches		
f)	LAN Cables		
g)	WiFi REQUIREMENTS SPECIFICATION – Part X		
h)	PRICE SCHEDULE – Part Y		

PART II : Declaration of suppliers

The undersigned hereby offers to supply all or any part of the items described in the tender schedule attached with the delivery term quoted therein against the date of a firm order placed by the school at the price or the prices quoted in the tender schedule free of all other charges and in accordance with any drawings and/or specifications provided by the school. In so doing, the undersigned acknowledges that all items not otherwise specified shall be in accordance with British Standard specifications where such exist; tenders shall REMAIN OPEN FOR 90 DAYS after the Closing Date; and the school is not bound to accept the lowest or any tender and reserves the right to accept all or any part of any tender within the period during which the tenders remain open. The undersigned also warrants that his Company's Business Registration and Employees' Compensation Insurance Policy are currently in force and that the items which his Company offers to supply do not to his knowledge infringe any patents.

PART III : Prevention of Bribery Ordinance

I. The bidder, its employees and agents shall not offer any advantage (as defined in the Prevention of Bribery Ordinance, Cap. 201) to the school employees, IMC members, or any parent or student representative in a committee responsible for considering any matters in relation to this contract. Any such offer by the bidder or its employees or agent may constitute an offence under the Prevention of Bribery Ordinance and may render the contract null and void. The school may also cancel the contract awarded and hold the bidder liable for any loss or damage the school may sustain.

II. If a school employee or supplier or contractor has committed any of the above offenses, the tender will not be considered and the contract signed will be invalidated even if it has come into effect.

Duly authorized to sign tenders for and on behalf of :-

_____

whose registered office is situated at _____

_____ Hong Kong.

Business Registration Certificate No. : _____ (Expiry date : _____)

Telephone No. : _____

Fax No. :_____

Signature： _____

aca

_____ Name of Person In Charge ： _____

Date： _____ Title of Person In Charge ： _____
(State official position, e.g. Director, Manager, Secretary, etc.)

PART X – WiFi REQUIREMENTS SPECIFICATION

1. Introduction

The Contractor is invited to

- Build up a WiFi network **Islamic Kasim Tuet memorial College** (The School); and
- Provide and maintain a WiFi service through subscription mode.
- Provide bandwidth 1GB with 16 fixed IP

2. Background

The School will **enhance** / **top up** the IT infrastructure so as to set up the necessary WiFi environment in the school premises (full WiFi coverage in ALL classrooms) for supporting e-learning in class. Regarding the enhancement of WiFi infrastructure, we would like to hire a contractor to design, build, operate and maintain the whole infrastructure; and to pay for the service by subscription thereafter, through a **subscription** model.

3. User Requirements

This section specifies the user requirements of the School of the WiFi network. The Contractor shall be capable of supporting the requirements set out below.

3.1 Standard Provision

- **WiFi Internet Connectivity** – use IEEE 802.11 a/b/g/n/ac/ax network or above in a standard classroom. The minimum number of AP to be covered shall be at least 48.
- **Number of Concurrent Connection** – commensurate with the maximum number of students, say **40**, in a class with at least **2Mbps** upload / download bandwidth per connection
- **Number of classrooms using WiFi concurrently**.
- **Authentication Method** – use 802.1x standard based authentication and Hong Kong Education City single sign-on services.
- **Session Control** –Hong Kong Education City authentication service can support one device or multiple devices to connect based on user group (student, teachers).
- **Internet Content Filtering Service** – based on filtering profile commonly adopted by most schools and managed by vendors.
- **Existing Network Facilities** – not rely on any existing network facilities and cabling of the school, nor interfere with the existing WiFi network of the School. The Wi-Fi network shall be physically separated from the school network
- **Broadband Network** – use separate broadband with 16 fixed Ips for the WiFi service. Provide at least 1Gbps Internet connection at school

- **Managed Service –** operate the **WHOLE** WiFi network **(Including Access Point, On-premise Controller, Switch, Firewall)** using managed service model, provide end-to-end service with single point of contact including configuration, provisioning of service, proactive monitoring, maintenance and regular report.
- **Service Level Agreement** – ensure at least 99.7% availability of the WiFi service, support four-hour response time and four-hour service recovery with active monitoring, helpdesk support with support hours from Mon to Sat 8:00 am to 6:00 pm, and provide monthly monitoring reports for the School.
- **Contract End Arrangement** – All provisions of trunks, conduits, cables, LAN ports and power points shall be considered as fixture of the School and shall become the property of the School. The Contractor shall remove or keep those provisions according to the instruction of the School. Contractor can remove the network equipment such as switch, routers, and access points.
- **Tenders will be disqualified and not be allowed to enter into the next stage if they fail to meet any of these mandatory requirements**

3.2 Add-on Service (to be aligned with Part Y)

- **WiFi coverage** – to include special rooms and open areas
- **Authentication Method** – user account system being used by school, etc.
- **Session Control** – Other requirements
- **WLAN system access control** – specific request on MAC address filtering.
- **MAC Address Monitoring** – The lists of filtering and filtered MAC addresses are to be monitored by Chi Lin Buddhist Primary School
- **Internet Content Filtering Service** – School **MUST** have **FULLY** administrative right to manager internet content filtering service
- **Hardware configuration** – School **MUST** have the **FULLY** rights to configure Access Point controller and firewall setting
- **Integration of networks** – system integration with existing network with secure design.
- **Internet addresses subscription & configuration** – for Internet access to school internal resources.
- **Monitoring of WiFi network** – specific request on monitoring of WiFi network by School.
- **Support hours** – extended support hours and/or reduced time for recovery.
- **Contract End Arrangement** – All provisions of trunks, conduits, cables, LAN ports and power points shall be considered as fixture of the School and shall become the property of the School. The Contractor shall remove or keep those provisions according to the instruction of the School. Contractor can remove the network equipment such as switch, routers, and access points.
- **Tenders will be disqualified and not be allowed to enter into the next stage if they fail to meet any of these mandatory requirements**

3.3. Deliverables

3.3.1 The Contractor is required to provide the following deliverables for the WiFi network design:

- Master Activity Plan
- Network Configuration Report and Network Diagram
- Network Test Plan and Network Test Result Report
- Operation Manual for End User
- User Acceptance Test Plan
- Exit Plan

3.3.2 The Contractor is required to provide the monthly monitoring report with the following items:

- Network Health Report
- Network Usage Report
- Reporting of security incidents
- Reporting on trend and statistics of incident and their analysis
- Reporting of the failure rate for all equipment with detailed fault analysis
- Problem log and incident log for critical failure of the network
- Statistical report on the type and no. of calls
- Summary of the outstanding enquiry for the month-to-date

4. Technical Specification (Standard Provision)

4.1 **WiFi Network**

4.1.1 The Wireless LAN (WLAN) System of the WiFi network shall support simultaneous dual-operation-mode that is FAT Access Point (AP) and Thin Access Point are both supported together with WLAN Controller. WLAN Controller shall be capable of fully centralized provisioning, configuration and monitoring all APs functionalities; a backup of the WLAN Controller shall be available.

4.1.2 The thin client WLAN Access Point (AP) shall be a high-performance wireless network access device, which shall be connected with the Power over Ethernet (PoE) Access Switches via Structured Cabling System. Appropriate type of connection cables between WLAN APs and the antenna shall be provided. Support FAT/FIT/MACC modes switching. When operating in FIT mode, the AP can communicate with the AC via CAPWAP. **The AP shall be able to managed by on-premise hardware controller;** Should Support PPSK or equivalent feature, WLAN Controller provide a one-time wireless password every user by batch, the device hardware MAC Address will be binded automatically, and the user cannot share their own password to other devices

4.1.3 The WLAN APs shall be compatible with Wi-Fi 6 standard (IEEE 802.11ax), dual-radio dual-band, concurrent 802.11ax and 802.11a/b/g/n/ac. Should support total 4 spatial streams, 2×2:2 in 2.4GHz , 2×2:2 in 5GHz. Support 5G radio mode operation for high-density environment and Maximum throughput (2.4GHz+5GH mode) per AP should be at least 1.775Gbps. Support PoE (802.3af/802.3at), power consumption <12.95w, also support local power supply; PoE 802.3af with full spectrum radio operation. The WLAN Aps should support WIDS (Wireless Intrusion Detection System) feature, including RF interference tracking, rogue AP detection & containment, anti-ARP spoofing ,etc.

4.1.4 The Contractor shall design the WLAN System to provide the coverage for the required wireless coverage place. The received signal strength measurement from the WiFi Service at the WiFi client device (such as tablet PC or notebook computer) is no worse than -68 dBm. The Contractor shall provide certificate or test report to illustrate that the WiFi client device for testing satisfies the power emission requirement.

4.1.5 The WLAN AP shall support DHCP, PoE, WPA2, IEEE 802.1x and certificate authentication.

4.1.6 The WLAN System shall support automatic channel selection, protocol filtering, multicast/broadcast storm filtering and load balancing.

4.1.7 The WLAN system shall allow single or multiple devices per user account to be authenticated using 802.1x and Hong Kong Education City single sign-on service.

4.1.8 Each WLAN AP shall be able to support at least concurrent 40 users connecting to the network simultaneously. In no circumstance shall the speed of data transmission symmetrically fall below the data rate requirement at any place or any corner or any highly congested area within the areas being covered. In case the transmission speed is below the said data rates, the Contractor shall be responsible for all remedial measures to rectify or configure fine-tuning of antenna or even increase the quantity of the WLAN AP at Contractor's own costs in order to meet the data rate requirement as mentioned in the Specification. A complete set of catalogues with brand and model shall be submitted and highlighted for reference. The catalogues shall show all the features and technical specifications of the products and systems.

4.1.9 The system shall provide bandwidth control per connection.

4.1.10 The WLAN shall allow different authentications by using Service Set Identifiers (SSIDs).

4.1.11 The SSIDs shall be able to be set hidden from searching by WiFi devices. The devices have to manually set SSID to make connection.

4.1.12 Individual APs shall be allowed to be assigned by more than one SSIDs.

4.1.13 Antennas of APs shall be capable of detecting user locations in real time for direction switching while devices in motion.

4.1.14 The DHCP server shall support at least 30 queries/sec.

4.1.15 The WLAN system shall suspend the session of the user once the session control is expired and the suspension time shall be configured by the school.

4.1.16 The Contractor shall in provision of the service comply with non-interference requirements of and shall not cause interference prohibited under the Telecommunication Ordinance (Cap 106) or any other laws or regulation of Hong Kong.

4.1.17 The WLAN System shall provide termination of idle sessions and control of the duration features.

4.1.18 The WLAN System shall support client roaming across Access Points.

4.1.19 The WLAN system shall cover all areas specified under this tender.

4.1.20 The quotation shall include the cost to provide sufficient quantity and its cabling work required, including but not limited to supply and install the Fibre optics, Cat 6 cable, Conduit, cable patch panel, cable faceplate, Cable patch cord. For the backbone, fibre optic is suggested.

4.1.21 The Contractor shall provide complete set of WLAN Systems which consist of Wireless Access Point, Connection Cable, Authentication System, Wireless LAN Controller, PoE Switch, horizontal UTP Cat 6 cable/OM3 Fiber, patch cable UTP Cat 6 / OM3 Fiber Optics, any required license and all associated accessories.

4.1.22 All access points (AP) shall be certified by OFCA and copy of certificates issued by OFCA shall be attached to the proposals.

4.1.23 The Contractor shall ensure that there is no interference between WLAN Access Points due to limited non-overlapping channels assignment when the WLAN AP is installed. The Contractor shall be responsible at his own costs for providing solution to eliminate the interferences including but not limited to reassignment of the non-overlapping channels, adding extra APs with lower transmission power and/or replacement of the WLAN AP.

4.1.24 The WLAN System shall support Web GUI management.

4.1.25 FTP service shall not be allowed in the WiFi network (to avoid exchanging credential and files in plain text without any encryption).

4.1.26 The WLAN System shall support IPV6 addressing method.

4.1.27 The WLAN System should support auto recognition of mainstream operating systems such as iOS, Android and Windows, etc. Support a self-adaptive authentication page that fits any screen size for easy access. Provide technology white paper as proof. Should be no additional license.

4.1.28 The WLAN System should support radio country code, channel and power setting.

4.1.29 The WLAN System should support MAX clients number limitation for each radio.

4.1.30 The WLAN System should support SSID and mapping VLAN management.

4.1.31 The WLAN System should support built-in and external portal management, including social login, One-click, Voucher, Account login methods, Portal page customization and language configuration.

4.1.32 The WLAN System should support WEB and telnet security configuration.

4.1.33 The WLAN System should support AP load balancing and roaming setting.

4.1.34 The WLAN System should support RRM auto RF planning.

4.1.35 The WLAN System should support auto-propose of device firmware version.

4.1.36 The WLAN System, Switch deployed shall be same brand to ensure the service quality on deployment and after-sales services can be maintained.

4.2 Core Switch

4.2.1 The Core Switch would be responsible for connecting all PoE access switches in typical floors for WLAN AP.

4.2.2 The Core Switch shall be capable of providing the required bandwidth, QoS, and policy-based routing to carry all sorts of information including video, voice, data, image, etc.

4.2.3 Each Core Switch shall provide a Gigabit Ethernet connection to each PoE Access Switch in typical floors.

4.2.4 The Core Switch shall support Layer 2 and Layer 3 switching and capable of providing the wired speed performance.

4.2.5 The Core Switch shall support basic IP unicast routing protocols, Static route, Routing Information Protocol (RIPv1, RIPv2), inter VLAN routing.

4.2.6 The Core Switch shall support Internet Group Management Protocol (IGMP) snooping and multicast and unicast storm control, Spanning-Tree Protocol.

4.2.7 The Core Switch shall support WebGUI Management, Access Control Lists (ACLs), DHCP Interface and SNMP.

4.2.8 The Core Switch shall support VLANs including support for IEEE 802.1Q and IEEE 802.1p.

4.2.9 The network equipment deployed shall be same brand to ensure the service quality on deployment and after-sales services can be maintained.

4.3 PoE Access Switch

4.3.1 The Access Switches shall be deployed to provide high performance interconnectivity between the Core Switches and the WLAN APs on typical floor. The Access Switch should support at least 264 Gbps switching capacity and 96Mpps Packet Forwarding Rate. The Access Switch should have 2 power modules, and support 1+1 power redundancy and Hot-swappable power module. Should support AC power supply and DC(-36V to -72V DC) power supply. The Switch should have at least 2 extension slots, the extension slots should support 10GBase-T and 10GBASE-X expansion modules.

4.3.2 The Access Switch shall consist of 24/48 x 10/100/1000Base-T Ethernet ports, with minimum 2 of 10GE Ports Ethernet uplink ports connected with the Core Switch. The switches are managed switches offer advanced Layer 2 and basic Layer 3 features as well as High-power PoE Technology (IEEE 802.3bt). The switches adopt new web interface and can be managed at the Cloud platform, provides easy device onboarding, configuration, monitoring, and troubleshooting.

4.3.3 The Access Switch shall be used for connecting the WLAN APs. The Contractor shall determine the Maximum power loading of the devices to be connected with the PoE Access Switches. The Contractor shall provide additional PoE Access Switch(es) if the total power loading summed up from the PoE devices exceeds the maximum power loading capacity of the PoE Access Switch.

4.3.4 The Access Switches shall support VLAN configuration, spanning tree protocols of 802.1d, 802.1w, and 802.1s to ensure rapid convergence, improves fault tolerance capabilities, ensures stable running of networks and load balancing of links, and provides redundant links.

4.3.5 The Access Switches shall be provided sufficient port density to meet all the required links.

4.3.6 The Access Switches shall support PoE and shall conform to IEEE 802.af / IEEE 802.3af standard, which delivers power over single copper UTP cable for WLAN AP.

4.3.7 The Access Switches shall support Internet Group Management Protocol (IGMP) snooping and multicast and unicast storm control, IEEE 802.1D Spanning-Tree Protocol.

4.3.8 The Access Switches shall support Virtual local area network (VLANs) including support for IEEE 802.1Q and IEEE 802.1p.

4.3.9 The Access Switches shall support WebGUI Management, Access Control Lists (ACLs), DHCP Relay and SNMP.

4.3.10 The 24/48 ports PoE Access Switches supports IEEE 802.3af, IEEE 802.3at and IEEE 802.3bt and is also backward compatible with earlier standards, offering up to 90W output per port and 370W per device. The front 1-4 ports enable high power PoE application.

4.3.11 The network equipment deployed shall be same brand to ensure the service quality on deployment and after-sales services can be maintained.

4.4 Firewall

4.4.1 The performance of the Firewall shall not be degraded with 100% Internet bandwidth utilization.

4.4.2 Network Address Translation (NAT) is required.

4.4.3 Access Control Policy is required.

4.4.4 The configuration settings of the appliance shall be allowed to export to files for backup and restore for rapid recovery and shall control all incoming and outgoing Internet traffic, serving as the sole entry and exit point between the Internet and the WLANs in all locations.

4.4.5 The configuration settings of the appliance shall support blocking specific network ports, including ports of Transmission Control Protocol (TCP) and User Datagram Protocol (UDP). Blocking denial of service (DoS) attacks and malformed packet attacks shall also be configured.

4.4.6 The firewall policy should be applied to control network traffic such that public users should be prohibited to access the internal network segments of the School.

4.4.7 The firewall must provide the performance or better;

- Should support at least 8 fixed 1000BASE-T ports, 1 fixed 1000BASE-X port and 1 fixed 10GBASE-X port.
- Should provide standard 1U chassis and multi-core non-x86 architecture.
- Should support 1 hard disk of at least 1TB storage size.
- Should support 1 power supply with power consumption less than 25W.
- Should support at least 2GB memory.
- Should support 2000 concurrent users and at least 6000Mbps (1518 Bytes) or 3725Mbps (512Bytes) throughput.
- Should support max concurrent session upto 600K

4.4.8 The firewall (for Wi-Fi network) must support below software requirement

Routing optimization

- Should provide at least 6 ports as WAN ports for multi-link access.
- Should support multiple Internet access modes such as static IP, DHCP and PPPoE dial-up connection.
- Should support multiple routing protocols such as static routing, RIP (V1/V2/V3) and OSPF.
- Should support multi-link load balancing of multiple modes such as bandwidth-based and load-based to ensure the reasonable bandwidth allocation for multiple external network links.
- Should support application-based routing based on applications such as communication and video app.
- Should support graphical display for the results of application-based routing.
- Should support link bypass and regular link inspection. When the link is abnormal, it should be shut down in time so that the applications can pass through other normal links.

User management

- Should support DHCP and provide DHCP service for the intranet.

- Should support DHCP address pool allocation status and generation of IP and MAC correspondence list.
- Should support user account creation with IP, MAC and IP-MAC binding.
- Should support batch creation of user accounts through texts and forms, as well as batch creation of accounts, passwords, and full paths.
- Should support local web authentication and integrated authentication with external authentication server.
- Should support local user authentication, LDAP authentication and Microsoft AD single sign-on.
- Should support local guest voucher authentication processing by integration with cloud-based voucher management system; the voucher can limit the guest data usage and network access duration.

Application recognition (DPI) and flow control management

- Should support at least 120 application protocol identification and provide at least 43 application categories.

Network security

- Should support interface access control (ACL), which can filter and block specific ports and IP, as well as reflexive ACL.
- Should support ping blocking and blacklisted website blocking to ensure the device security.
- Should support protection against ARP spoofing, static ARP binding, disabling of ARP learning, and effective ARP mapping and binding. Screenshots of the device configuration interface should be provided with the manufacturer's official seal.
- Should support IPsec VPN and provide access authorization for at least 1000 IPsec VPNs.
- Should support automatic topology generation after the establishment of the IPsec VPN, so as to facilitate the online status monitoring of all devices.

Device management and monitoring

- Should support the display of CPU and memory usage on the web interface.
- Should support web management through HTTPS and HTTP.
- Should support SNMPv2/ v3 and multiple traps reception configuration. Screenshots of the device configuration interface should be provided with the manufacturer's official seal.

4.5 Service Requirements

4.5.1 The Contractor shall be responsible for the total project management and shall assign a person to act as the single contact point to the School regarding all related activities of the contract. This single contact point cannot be transferred to a sub-contractor unless explicitly agreed by the School. Contractor should formally inform the School in writing if there is a change of contact point.

4.5.2 The Contractor shall provide rack/cabinet or use existing school rack if there is available rack space. All switches/firewall shall be properly installed into wall mounted cabinet or rack.

4.5.3 Cables shall be labelled with connected port and its device id.

4.5.4 All the equipment shall be labelled with an identifiable id.

4.5.5 The placement of cables, cabinets, racks and appliances shall be shown on the network diagram.

4.5.6 Switches and/or other appliances shall be properly installed into cabinet/rack with appropriate ventilation.

4.5.7 13A power cord(s) shall be bundled with appliance(s).

4.5.8 Cable shall be properly set up onto appropriate cable management guide.

4.5.9 Contractor should make sure that the actual environment is suitable for the installation and operation of equipment with School agreement in advance, and make necessary suggestions, if any.

4.6 Service Level Requirements

4.6.1 The Contractor shall provide incident/problem report to the School within 5 working days after each incident and the resolution taken.

4.6.2 The Contractor shall derive mechanism, including forms and reference tables for measuring and recording the Service Level Measures, to ease the administration and monitoring by the School.

4.6.3 Advance notice by at least 2 weeks shall be given to the School prior to all scheduled maintenance. At most 4 scheduled maintenances per year are excluded from the calculation of Service Levels. No more than 1 hour service interruption or an agreed time slot is accepted for each scheduled maintenance.

4.6.4 Service Level, expressed in percentage, is the ratio of actual available time to the scheduled available time for the WiFi network of the School and is calculated according to the following formula:

Service Availability Level = (Schedule Uptime within the month– Unscheduled Downtime within the month) / Scheduled Uptime within the month, where

Scheduled Uptime: The duration, in unit of minutes, for the WiFi network of the School is scheduled to be available for the month. The duration will exclude the scheduled downtime, which is defined as duration agreed between the School and the Contractor during which the service may be deliberately

made unavailable to users.

Unscheduled Downtime: The amount of time, in unit of minutes, that the service are unavailable due to equipment failure or other reasons under the responsibility of the Contractor.

4.7 Service Level Rebates

4.7.1 The Service Rebates to the School operate as liquidated damages for the performance fallen short of the target service levels over a period of one month. The service measures stipulated in 4.6 will be used to determine the Service Rebates in Service Availability (S1) and Service Resumption Time (S2).

4.7.2 The application of the Service Level Rebates adjustment to the monthly charge will commence with effective from the acceptance of the reliability test.

4.7.3 For each month, the Service Rebates for different service measures (S1, S2) will be calculated as below if the Contractor cannot meet the target Service Levels for the WiFi network of the School under the availability agreed:

Failure Hour x [(Yearly Subscription Fee) / (365 x 24)] x 2, where

Failure Hour: The unscheduled downtime or the time to resume the network due to the failure of hardware or software which is provided by the Contractor. Failure Hour is calculated in the increment of 0.5 Hour.

4.7.4 The Service Rebates of the WiFi network of the School, if any, will be paid by crediting the invoice of the following month.

4.8 Helpdesk Service

4.8.1 The Helpdesk Service shall maintain dedicated hotline, including phone, email and fax, for enquiries and complaints.

4.8.2 The Helpdesk Service shall answer enquiries and complaints originated from the School concerning the Service.

4.8.3 The Helpdesk Service shall operate from Mon to Sat 8:00 am to 6:00 pm.

4.8.4 The Helpdesk Service shall maintain call logs on enquiries and complaints. The information shall

be included but not be limited to date, time, description of issues, contact information, and follow-up actions. The Contractor shall observe and comply with Personal Data (Privacy) Ordinance in handling all information relating to these enquiries and complaints.

4.8.5 The Contractor shall provide the following information concerning the Helpdesk service related to the implementation of the Service:

- Detailed information of the helpdesk office, such as address, phone number, fax number; and
- Facilities, computer systems and equipment provided in the helpdesk office, such as private branch exchange (PBX), keyline telephone system (KTS), interactive voice response system (IVRS) and voice recording system.

4.8.6 The Contractor shall provide helpdesk staff with the necessary tools, including but not limited to hardware and software, related training for supporting the Service.

4.8.7 The Contractor shall not make use of the Helpdesk Service to transmit any message or conduct any activity to the School, which is not connected with the provision of the Service. The School shall have the full discretion to determine whether any such message or activity is in breach of this provision. The Contractor shall forthwith stop transmitting such message or conducting such activity and refrain from doing it further once the School has notified the Contractor in writing or verbally of its determination.

4.9 User Acceptance Test

4.9.1 The Contractor shall conduct tests with the School before the service is officially accepted and subscription started. Tests shall include User Acceptance Test for reliability and performance of the hardware and software, and also the monitoring, operation support and all other aspects related to the Service Level Agreement of the Service. At least 14 school working days of trial period is expected for service monitoring after testing.

4.9.2 The contractor will be required to perform test making reference to the User Acceptance Test and System Test documents at www.edb.gov.hk/ited/wifi900. They include the types of testing to be performed, the requirements to be tested, the testing environment, testing tools and pass/fail criteria as reference to the Contractor.

4.9.3 The Contractor shall upon request by the School arrange briefings to the School and/or Responsible Parties of the School, with briefing materials, prior to the User Acceptance Test when required.

4.9.4 The Contractor shall provide detailed acceptance test plan and a step by step testing procedure with expected results against the requirements set out in this specification.

4.9.5 The Contractor shall provide, configure and set up the proper software and hardware for the School to carry out the User Acceptance Test.

4.9.6 The Contractor shall be required to carry out tests to demonstrate that the equipment and system meet the specification and other contractual requirements. The Contractor shall also be responsible for the timely preparation and compilation of all test schedules, test procedures and test reports.

4.9.7 The Contractor shall follow the agreed standards as laid down in this specification for the testing methods and procedures.

4.9.8 The Contractor shall submit a schedule of site performance and commissioning tests at least 3 working days prior to the commencement of the scheduled commissioning date.

4.9.9 Special tools, test equipment, test objects and simulators required for the demonstration of either bench or commissioning tests shall be made available by the Contractor at no extra charge to the School.

4.9.10 All test equipment used by the Contractor shall be properly and periodically calibrated. Measuring standards used in calibration shall be traceable to international or national measurement standards, or to an industry recognized manufacturer's reference, subject to approval of the School.

4.9.11 Calibration procedures and results shall be documented and signed by certifying body where applicable. The Contractor may be requested to show evidence of calibration of test equipment by submission of copies of these calibration records prior to conduction of any tests.

4.9.12 The Contractor shall submit the User Acceptance Test report within 3 working days. The acceptance of the installation will only be granted after receiving a satisfactorily UAT report from the Contractor.

4.9.13 All equipment to be installed may be subject to inspection and bench testing. The Contractor shall meet the cost of deliveries for bench test. Notwithstanding, the Contractor shall have carried out the tests in accordance with the requirements and procedures stipulated in this specification and submitted the associated test reports for inspection.

4.10 Termination of Service

4.10.1 The School reserves the right to terminate all or part of the Service at any time with written notice of 10 working days in advance if:

- The Contractor fails to meet the target service levels under Service Level Requirements for two consecutive months, or three months in total within the committed subscription period;
- The School suspects that unauthorized activity has occurred or is occurring in relation to the Service;
- The provision of the Service will cause the School to be in breach of any applicable law;

4.10.2 The Contractor shall provide to the School and implement the Exit Plan in accordance with:

- The Contractor shall provide to the School an Exit Plan with feasible arrangements before the committed subscription contract date;
- If the School considers the Exit Plan as not satisfactory, it will notify the Contractor with comments. The Contractor shall revise the Exit Plan by taking into consideration of the School's comments and provide to the School with five (5) working days after the date of receiving the School's comments. If the Exit Plan has been considered as not satisfactory for three or more times, the School shall have the right to terminate this Contract by giving 10 days' notice in writing;
- Detailed exit procedures, disengagement timetable and actions to be taken by both the Contractor and the School for smooth termination of all or any part of the Service;
- The Exit Plan shall aim at enabling the School or its authorized parties to perform in substitution for the Contractor and to eliminate or minimize any disruption or deterioration of the Service. The Exit Plan shall contain, but not limited to the following information:
  - Detailed exit procedures, disengagement timetable and actions to be taken by both the Contractor and the School for smooth termination of all or any part of the Service;
  - Any information that is necessary for the School or a new service provider to continue the provision of the Service;
  - Details of the Contractor's personnel and other resources that will assist the School or the School's authorized parties during the handover;
  - All provisions of facilities such as trunks, conduits, cables, LAN ports and power points, shall be considered as fixture of the School venues and shall become the property of the School. The Contractor shall remove or keep those provisions according to the instruction of the School. Contractor can remove the network equipment such as switch, routers, and access points.
- The Contractor shall be responsible for the implementation and execution of the Exit Plan and shall ensure that the exit plan is carried out in a timely and orderly manner.

5. Wi-Fi.HK (optional service)

5.1 The implementation of Wi-Fi.HK is advocated by the School, the decision of the implementation will not be served as a basis of discrimination for proposal evaluation.

5.2 To make it easier for the public and visitors to access free Wi-Fi services in Hong Kong, the Government is promoting the free Wi-Fi services offered by the public and private sectors in Hong Kong under a common Wi-Fi brand "Wi-Fi.HK". It will help the public and visitors find and connect to the public Wi-Fi hotspots throughout Hong Kong. These free hotspots will be promoted under the Wi-Fi.HK brand through various means such as the Wi-Fi.HK thematic website and mobile app. With a common brand in place, it will create more business opportunities for the Wi-Fi.HK participating organizations to promote and deliver their products and services to their customers by leveraging on mobile technologies.

5.3 Contractor is invited to provide free Wi-Fi service riding on the same Wi-Fi network infrastructure using the Wi-Fi.HK SSID for school visitors such as parents to access the Internet in schools and such services shall incur no additional charge to the School.

5.4 The following are the requirements of the Wi-Fi.HK scheme:

- Aggregated total of at least 30 minutes free access time per day per device;
- Service available 24 hours x 7 days or as long as the venue is accessible to the user;
- All Access Points providing public Wi-Fi service be registered with OFCA;
- SSID of Access Points be presented in "Wi-Fi.HK via <designated name of service provider>" format;
- Landing page with Wi-Fi.HK logo, terms and conditions and disclaimers for user to accept for connection but no need for user to login using username or password;
- Hotline service, contact email or on-site support be provided for public enquiry and technical support; and
- Preferably with installation of digital server certificate issued by recognized certificate authority on the landing page so that users can easily discern the legitimacy of the Wi-Fi services.

5.5 The network for supporting Wi-Fi.HK shall not be allowed to have direct access to the school's network. Connections via Wi-Fi.HK shall have access to the Internet only.

5.6 Content filtering is not a requirement for Wi-Fi.HK.

5.7 When the School terminates all or part of the Service, the Wi-Fi.HK service of the related area will be terminated together. The school also reserves the right to request the Contractor to terminate or suspend the Wi-Fi.HK service at any time.

5.8 More details of the scheme can be found at Wi-Fi.HK thematic website (http://www.wi-fi.hk).

6. Sub-Contracts

6.1 The Tenderer shall be the prime Contractor for all the services specified in Part X and Part Y of this contract. The Tenderer shall be the single point of contact for all contractual matters.

6.2 The Tenderer shall be liable for the performance or breach of any provisions of the contract by Sub-Contractors.

6.3 The Tenderer shall provide details of the sub-contract service for the Wifi operation and maintenance of the Sub-Contractors in the format listed on Section 5 of Part Y. The hierarchy of the sub-contracting shall also be clearly stated below. If there are no Sub-Contractors, please enter nil.

6.4 No Sub-Contractor(s) specified in Section 5 of Part Y shall be replaced unless prior written consent has been given by the School.

6.5 The Tenderer shall ensure that the quality of the service rendered by the Tenderer shall not be affected due to any change of Sub-Contractors;

6.6 The Tenderer shall not be relieved from any of its obligations hereunder by entering into any sub-contract for the performance of any part of this contract. If request by the School, the Tenderer shall describe which part of the service shall be performed by the Sub-Contractor(s) in the sub-contract(s) between the tenderer and its Sub-Contractor(s).

7. Schedule of Work

7.1 The Contractor shall provide the service according to the following schedule.

Phase	Items	Starting Date	Ending Date	Service fee
I	Build up of WiFi network	On or before 01 Sep 2022	31 Aug 2025	0
II	Subscription of service	1 Sep 2022	31 Aug 2025	Quoted price

8. Delay of Schedule

8.1 If the Contractor fails to provide any part of the WiFi service which shall be ready for use in the

School within 60 days after the target Ending Date specified in Section 8 of Schedule of Work then notwithstanding anything else contained in this Contract the School shall be entitled to terminate this Contract with forthwith by giving written notice to the Contractor and to recover from the Contractor the amount of all damages and loss suffered by the School resulting from such failure, including without limitation to any damages and loss resulting from the termination of related service orders.

8.2 Within one (1) week of the termination of this Contract, the Contractor shall collect its own Hardware and Software at his own cost after the contractor has removed the School Data in the Hardware.

8.3 The Contractor shall reinstate and make good the concerned area of the School to the satisfaction of the School after removal of the hardware.

9. Terms of Payment

9.1 The subscription will be paid in arrears of each month during the subscription period.

10. Price Proposal

10.1 The Service Provider is required to provide a breakdown on the service charges for each of the service items as set out in the Price Proposal at **PART Y - PRICE SCHEDULE**. Failure in complying with this requirement will render the quotation disqualified.

10.2 Please note that, the School has the absolute discretion to accept the whole of the Services or just part of the Services as listed out by items in the Price Proposal.

10.3 Set up cost will not be considered as a part of the cost in subscription mode.

11. Invitation for Quotations

11.1 Quotations are invited for the execution of the whole of the Services as described in this document. Quotations for part but not all of the Services will not be considered.

11.2 Please provide two sets of quotation documents for processing of the quotation.

12. Tender Preparation and Submission

12.1 The Service Provider is required to submit the following information and document.

- A Statement of Compliance to provide response that the quotation complies with all requirements stated in this Specification.
- Price Schedule
- No upfront cost or one off cost schools shall be paid throughout the entire subscription period.
- Proposed AP location mark on the Floor plan.
- Proposed Network infrastructure show on the Network Diagram.
- Implementation Plan.
- WiFi Access Point certificates issued by OFCA.
- Product information including technical and descriptive literature and catalogues. Information provided by the manufacturer shall be able to substantiate that the products offered meet the mandatory Technical Specification.
- Tenders will be disqualified and not be allowed to enter into the next stage if they fail to meet any of these mandatory requirements

13. Selection and Payment

School is looking for a contractor based on the following criteria

- Proposed pricing
- Proposed solution
- Equipment and services level
- Case reference
- Other useful information

14. Enquiry

For enquiry, please contact Mr. Wong of the School at iktmc@learn.iktmc.edu.hk by phone at 2570 9066**.**

PART Y - PRICE SCHEDULE

1. Price details for Standard Provision

Standard Provision	**3 years**		**Comply** ***Please specify**	**School's choice on confirmation**
	Monthly price	**Annual price**	**Yes/ No**	
WiFi Service Subscription (Requirement as stated in Part X) The WiFi System shall support 40 concurrent connections (each room) at least. WiFi signals should be evenly covering the desired locations. Location: 6/F: Rm601 – 606, Chem. Lab, Phy. Lab 5/F: Rm501 - 505, 507, Computer Rm, I.S. Lab, Geog Rm 4/F: Rm401 – 406, MMLC, Bio. Lab 3/F: Rm304 – 305, Computer Rm, Library (2), Needle Work Rm, Cooker Rm 2/F: Rm201 – 206, Staff Rm, Music Rm, Art&Design Rm				

Standard Provision	**3 years**		**Comply** ***Please specify**	**School's choice on confirmation**
	Monthly price	**Annual price**	**Yes/ No**	
1/F: Rm101, Hall, Conference Room, Rm110, Rm116 G/F: Cover Playground, Basketball court, RmG02				
Total in HK$				

2. Price details for Add-on Services (Offer will be considered on itemized basis)

Add-on Service		**3 years**		**Comply**	**School's choice on confirmation**
Item	**Description**	**Additional monthly price**	**Additional annual price**	**Yes/ No**	
Reuse or relocate the existing wifi routers	Requirement as stated in Part X				
WiFi coverage for Specific areas:	Requirement as stated in Part X				
Authentication Method	Requirement as stated in Part X				
Session Control	Requirement as stated in Part X				
WLAN Access Control	Requirement as stated in Part X				
Internet Content Filtering Service	School must have administrative right to manage web content filtering				

Add-on Service		**3 years**		**Comply**	**School's choice on confirmation**
Item	**Description**	**Additional monthly price**	**Additional annual price**	**Yes/ No**	
Integration of networks	Requirement as stated in Part X				
Internet addresses subscription & configuration	School must have **administrative right** to manage subscription & configuration				
Monitoring of WiFi network	School must have **administrative right** to manage subscription & configuration. **WHOLE** WiFi network **(Including Access Point, On-premise Controller, Switch, Firewall)** using managed service model, provide end-to-end service with single point of contact including configuration,				

Add-on Service		**3 years**		**Comply**	**School's choice on confirmation**
Item	**Description**	**Additional monthly price**	**Additional annual price**	**Yes/ No**	
	provisioning of service, proactive monitoring, maintenance and regular report.				
WiFi Service Recovery	Requirement as stated in Part X				
Support hours	Requirement as stated in Part X				
Reporting	Requirement as stated in Part X				
Contract End Arrangements	To be specified by school.				

3. Wi-Fi.HK Service

Wi-Fi coverage area of Wi-Fi.HK :	**To be specified by School.**
Will you provide free Wi-Fi.HK service (Y/N) ?	Y/N (to be input by Contractor)

4. Details of equipment to be proposed in the Buildup of WiFi network in the School

Items	**Quantity**	**Model**
WiFi Controllers		
Access Points		
Router/Firewall		
Core Switch		
Access PoE Switches		
LAN Cables		
Others (please specify)		

5. The Tenderer to provide details of the sub-contract service involved in the proposal for the project implementation, service operation and maintenance in the format listed below

Name of Sub-Contractor	Sub-contract service	Roles and responsibility

6. The Tenderer to provide case reference of past deployment in WiFi100/WiFi900 with Sub-Contractors details in the format listed below

Name of School	Name of Sub-Contractor	Sub-contract service	Roles and responsibility

7. A floor plan (provided by the school) is attached.

Annex: Floor Plan of the School