



東灣莫羅瑞華學校  
Tung Wan Mok Law Shui Wah School

香港 大嶼山 石壁  
Shek Pik, Lantau Island, Hong Kong  
Tel:2980 2383 Fax:2980 3241 E-mail:office@twmlsws.edu.hk

School Ref. No.: T18/19-06

5 July 2019

Company name:

By Registered Mail

Company address:

Dear Sirs,

INVITATION TO TENDER LETTER  
TENDER FOR THE SUPPLY OF  
**BROADBAND, TELEPHONE & WIFI SERVICES**

You are invited to tender for the supply and/or undertaking services of the items as specified in the enclosed tender schedule. If you are not prepared to accept a partial order, please state this clearly on the tender schedule.

Your sealed tender, **in duplicated**, should be clearly marked on the envelope:

**“Tender for the Supply of Broadband, Telephone & Wifi Services”**

The envelope should be addressed to **Tung Wan Mok Law Shui Wah School, Shek Pik, Lantau Island** and arrive **not later than 2 pm on 26 July 2019 by registered mail**. Late tenders will not be accepted. Your tender will remain open for 90 days from the above “Closing Date”, and you may consider your tender to be unsuccessful if no order is placed with you within 90 days. You are requested to note that unless Part II of the tender form is completed, the tender will not be considered.

If you are unable or do not wish to tender, it would be appreciated if you would return the tender form with reason to the above address at your earliest convenience.

Tenderers are required to signify their understanding and confirm compliance with the anti-collusion clause set out in the Annex by signing and returning the confirmation letter (Appendix 1 to Annex). The submission of tender without such confirmation letter will be disqualified.

The school reserves the right to select on basis other than price and do not have to award the supplier to the lowest price bidder.

Tenders will be accepted on an “itemized” basis.

Yours sincerely,

CHEUK Tak Kan Paul  
Principal

### **Anti-collusion Clause**

- i) The supplier shall not communicate to any person other than Tung Wan Mok Law Shui Wah School (hereafter referred to as the School) the amount of any tender, adjust the amount of any tender by arrangement with any other person, make any arrangement with any other person about whether or not he or that other person should or should not quote or otherwise collude with any other person in any manner whatsoever in the tendering process until the quotation is notified by the School of the outcome of the tendering exercise. Any breach of or non-compliance with this sub-clause by the supplier shall, without affecting the supplier's liability for such breach of rules and laws or non-compliance, invalidate his tender.
  
- ii) Sub-clause (i) above shall have no application to the supplier's communications in strict confidence with his own insurers or brokers to obtain an insurance quotation for computation of quotation price and communications in strict confidence with his consultants/sub-contractors to solicit their assistance in preparation for tender submission.
  
- iii) The supplier shall submit to the School a duly signed letter in the form set out in Appendix 1 to the effect that he understands and will abide by these clauses. The letter shall be signed by a person authorized to sign the contract on the supplier's behalf.

To: Tung Wan Mok Law Shui Wah School

Dear Sirs,

**Tender No. T18/19-06**  
**Confirmation Letter for Compliance with**  
**Anti-Collusion Clauses in Tender**

We/I \_\_\_\_\_ of

(Name of the Tenderer)

\_\_\_\_\_  
(Address of the Tenderer)

refer to my / our submission of the above tender.

We/I confirm that before We/I sign this confirmation letter, We/I have read and fully understood the anti-collusion clauses in the tender.

We/I confirm that as at the time of submission of this letter and other than the Excepted Communications referred to in the last paragraph of this letter, We/I had not communicated to any person other than Tung Wan Mok Law Shui Wah School (hereinafter referred to as the School) the amount of any tender, adjusted the amount of any tender by arrangement with any other person, made any arrangement with any other person about whether or not We/I or that other person should quote or otherwise colluded with any other person in any manner whatsoever and undertake that at any time thereafter in the tendering process for the above tender until We are/I am notified by the School of the outcome of the tendering exercise and other than the Excepted Communications referred to in the last paragraph of this letter We/I will not communicate to any person other than the School the amount of any tender, adjust the amount of any tender by arrangement with any other person, make any arrangement with any other person about whether or not We/I or that other person should tender or otherwise collude with any other person in any manner whatsoever.

In this letter, the expression "Excepted Communications" means our/my communications in strict confidence with our/my own insurers or brokers to obtain an insurance quotation for computation of quotation price and communications in strict confidence with our/my consultants or sub-contractors to solicit their assistance in preparation of tender submission.

\_\_\_\_\_  
Signed for and on behalf of the Tenderer with Company Chop

\_\_\_\_\_  
Date

**TENDER FORM FOR THE SUPPLY OF  
BROADBAND, TELEPHONE & WIFI SERVICES**

Name and Address of School:

**Tung Wan Mok Law Shui Wah School, Shek Pik, Lantau Island**

School Ref. No: T18/19-06

Tender Closing Date and Time: **2 pm on 26 July 2019**

**PART I**

The undersigned hereby offers to undertake the service as described in the tender schedule within the period of time as specified therein against the date of a firm order placed by the school at the price or prices quoted in the tender schedule free of other charges. In so doing, the undersigned acknowledges that all items not otherwise specified shall be provided in accordance with such details; 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 tender remains open. The undersigned also warrants that his Company's Business Registration and Employees' Compensation Insurance Policy are currently in force and that the service which his Company offers to undertake will not cause any damage to the school's premises.

**PART II**

**RECONFIRMATION OF TENDER VALIDITY**

With reference to Part I of this tender document, it is reconfirmed that the validity of tender offered by this company remains open for 90 days from 5 July 2019. The undersigned also agrees to accept the fact that once the validity of tender is reconfirmed, the pre-printed clause specified in the Company's tender forms in regard to this nature shall NOT apply.

Tender and all accompanying documents must be submitted in duplicate to the address and before the deadline set forth in the covering notice. All submissions have to be sealed and marked " Tender" with the Tender Reference and the closing date on the envelope and addressed to the principal.

Name (in block letters): \_\_\_\_\_

Signature: \_\_\_\_\_ in the capacity of \_\_\_\_\_

(state official position, e.g. Director, Manager, Secretary, etc.)

Date: \_\_\_\_\_

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

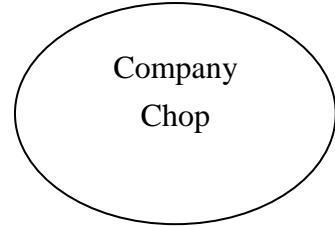
\_\_\_\_\_

whose registered office is situated at \_\_\_\_\_

\_\_\_\_\_ Hong Kong.

Telephone No.: \_\_\_\_\_

Fax No. \_\_\_\_\_



# WiFi Requirements Specification

## 1. Introduction

The Contractor is invited to

- build up a new WiFi network in Tung Wan Mok Law Shui Wah school at the new site at 12 Wong Yin Street Tuen Mun; and
- provide and maintain a WiFi service through subscription mode

## 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 network or above in a standard classroom. The minimum number of classrooms to be covered shall be at least equal to the number of approved classes for the 2019/20 school year that is **16** classrooms.
- **Number of Concurrent Connection** – commensurate with the maximum number of students, say **12**, in a class with at least **1.5Mbps/** 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** – cannot rely on any ITED 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 for the WiFi service.
- **Managed Service** – operate the WiFi network using managed service model, provide end-to-end service with single point of contact including configuration, provisioning of service, proactive monitoring, maintenance and regular reporting.
- **Wi-Fi Controller Service** – operate the Wi-Fi network controller using managed service model, with local in school controller not acceptable, the controller service should be provided in a service center in Hong Kong provided by the service provider with redundancy.
- **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.

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

- **WiFi coverage** – to include special rooms and open areas
- **Broadband Service** – provide two additional Broadband Service at least **1000Mbps** Internet connection at the School and Island Hostel.
- **Authentication Method** – user account system being used by School and Island Hostel.
- **WLAN system access control** – specific request on MAC address filtering.
- **Enclosures and UPS** – The contractor must provide all IT equipment enclosures for the School WiFi equipments as well as UPS for these equipments.
- **Internet Content Filtering Service** – specific request on content filtering.
- **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.
- **Redundancy** – increase the availability of the WiFi service.
- **Support hours** – extended support hours and/or reduced time for recovery.

### 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 Standard Provision**

- 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.
- 4.1.3 The WLAN APs shall be compatible with IEEE 802.11a/b/g/n/ac standard or above, support dual band of 2.4GHz and 5GHz.
- 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.
- 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 deployed shall be non-Asian brand
- 4.1.28 The contractor shall be authorized by the WLAN vendor to bid for this project to avoid any faked or low quality products are deployed. A vendor certificate shall be provided during the tender submission.
- 4.1.29 The contractor shall have at least 5 certified engineers on the proposed WLAN brand for at least 6 months.
- 4.1.30 Those certified engineers shall be permanent staff of the contractors for at least 6 months in order to ensure the service quality on deployment and after-sales services can be maintained. The Contractor shall submit those supporting documents during tender submission.
- 4.1.31 The cabling deployed in the WiFi network shall be non-Asian brand, (e.g. Systimax, AMP, Krone, Brandrex, 3M & etc...).
- 4.1.32 The contractor shall be authorized by the cabling vendor to bid for this project to avoid any faked or low quality products are deployed. A vendor certificate shall be provided during the tender submission.

## **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.

### **4.3 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.
- 4.3.2 The Access Switch shall consist of 8/12/24/48 x 10/100/1000Base-T Ethernet ports, with minimum of 1 x 1000Base-T / 1000Base-SX SFP Gigabit Ethernet uplink ports connected with the Core Switch.
- 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.
- 4.3.5 The Access Switches shall be at wired speed.
- 4.3.6 The Access Switches shall be provided sufficient port density to meet all the required links.
- 4.3.7 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.
- 4.3.8 The Access Switches shall support Internet Group Management Protocol (IGMP) snooping and multicast and unicast storm control, IEEE 802.1D

Spanning-Tree Protocol.

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

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

#### **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 cloud 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.

#### **4.5 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 A 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 services 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, instant messaging and fax, for enquiries and complaints.
- 4.8.2 The Helpdesk Service shall answer enquiries and complaints originated from the School not only concerning the Service, as well as remote re-configuration of existing firewall, switches, virtual machines, active directory and PC/files management.
- 4.8.3 The Helpdesk Service shall operate 24 hours from Mon to Sat, and 9am to 5pm with operators providing tier 1 remote re-configuration services as stated in 4.8.2.
- 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](http://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. Technical Specification (Add-on Requirement)**

**5.1. IT cabinet/ Enclosure** – The contractor shall provide at least 4 units of 12Rack Units (RU) Wall Mounted Enclosures with 600mm x 600mm dimension and at least 1 unit of 42RU x 800mm x 1000mm or as much as the solution provided requires with UPS provided at the Server Room.

### **5.2. IP Telephone System (Tung Wan Mok Law Shui Wah School)**

- 5.2.1 The Contractor should provide an advanced subscription based telephone system that included 45 SIP Clients (IP Phones) with a never busy feature, allowing 45 concurrent at least 2 concurrent lines per phone between the school and the outside world.
- 5.2.2 The Contractor should provide a cloud based SIP Phone server, with minimum equipments installed at the school, these phones should also make use of the school’s new WiFi network where possible.
- 5.2.3 The Contractor should provide IP Phone solution which includes all basic telephone features such as call transfer, call hold, caller ID and will be able to deliver the school’s existing PRI number when dialing out of the

school, any other numbers displayed will not be accepted.

5.2.4 The contractor should also be able to provide (Upon request of the school) a Voice Notice board feature, announcing information to the caller from outside of the school, and this IVR system will not take up any of the school's concurrent calling channels when the caller is listening to the information announced.

5.2.5 The contractor should provide a mobile IP phone app with the following features:

- Able to present school hotline number instead of personal mobile number when away from the desk
- Dedicated Office Number Equipped with Presence Management for Direct Contact Document can be attached for quick reference
- Office Visual Voicemail to Separate Work & Personal Life
- Dedicate page and clear indication allow staff to quick response to the messages; An office voicemail box will be provided for work-related calls; Voice messages with caller information will be listed clearly in the app
- The app must not use more than 10kb per call, and uses actual mobile voice minutes during the voice call
- The app must not use the mobile number for app activation/registration
- Keep user privacy by not showing teacher's individual number

### **5.3. IP Telephone System (Island Hostel)**

5.3.1 The Contractor should provide an advanced subscription based telephone system that included 10 SIP Clients (IP Phones) with a never busy feature, allowing 10 concurrent at least 2 concurrent lines per phone between the school and the outside world.

5.3.2 The Contractor should provide a cloud based SIP Phone server, with minimum equipments installed at the school, these phones should also make use of the school's new WiFi network where possible.

5.3.3 The Contractor should provide IP Phone solution which includes all basic telephone features such as call transfer, call hold, caller ID and will be able to deliver the school's existing PRI number when dialing out of the school, any other numbers displayed will not be accepted.

5.3.4 The contractor should also be able to provide (Upon request of the school) a Voice Notice board feature, announcing information to the caller from outside of the school, and this IVR system will not take up any of the school's concurrent calling channels when the caller is listening to the

information announced.

5.3.5 The contractor should provide a mobile IP phone app with the following features:

- Able to present school hotline number instead of personal mobile number when away from the desk
- Dedicated Office Number Equipped with Presence Management for Direct Contact Document can be attached for quick reference
- Office Visual Voicemail to Separate Work & Personal Life
- Dedicate page and clear indication allow staff to quick response to the messages; An office voicemail box will be provided for work-related calls; Voice messages with caller information will be listed clearly in the app
- The app must not use more than 10kb per call, and uses actual mobile voice minutes during the voice call
- The app must not use the mobile number for app activation/registration
- Keep user privacy by not showing teacher's individual number

#### **5.4. Firewall for ITED**

5.3.1 The performance of the Firewall shall not be degradable.

5.3.2 Network Address Translation (NAT) is required.

5.3.3 Access Control Policy is required.

5.3.4 The configuration settings of the cloud appliance shall control all incoming and outgoing Internet traffic, serving as the sole entry and exit point between the Internet and School's ITED network.

5.3.5 The cloud appliance shall provide Intrusion prevention System in order to prevent signature based attacks such as imminent security policy violation and shall not impact the performance of the Broadband Line provided by the ISP.

5.3.6 The school shall have administrative rights to change and configure the standard blacklist and website white list of the firewall.

5.3.7 The service shall be a Value added service of the broadband internet provided.

#### **6. Wi-Fi.HK (optional service)**

6.1 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.

6.2 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.

- 6.3 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.
- 6.4 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.
- 6.5 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.
- 6.6 Content filtering is not a requirement for Wi-Fi.HK
- 6.7 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.
- 6.8 More details of the scheme can be found at Wi-Fi.HK thematic website (<http://www.wi-fi.hk>).

## **7. Sub-Contracts**

- 7.1 The Tenderer shall be the prime Contractor for all the services specified in this

tender. The Tenderer shall be the single point of contact for all contractual matters.

- 7.2 The Tenderer shall be liable for the performance or breach of any provisions of the contract by Sub-Contractors.
- 7.3 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. The hierarchy of the sub-contracting shall also be clearly stated below. If there are no Sub-Contractors, please enter nil.
- 7.4 No Sub-Contractor(s) specified in Section 5 of Part C shall be replaced unless prior written consent has been given by the School.
- 7.5 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;
- 7.6 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).

## 8. Schedule of Work

8.1 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 1 Aug 2019	1 Sep 2019	0
II	Subscription of service	1 Sep 2019 After UAT	31 Aug 2022 3 years after UAT	Quoted price

## 9. Delay of Schedule

- 9.1 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.
- 9.2 Within one 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.
- 9.3 The Contractor shall reinstate and make good the concerned area of the School to the satisfaction of the School after removal of the hardware.

## **10. Terms of Payment**

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

## **11. Price Proposal**

**11.1 The Service Provider is required to provide a breakdown on the service charges for each of the service items as set out in the TENDER SCHEDULE. Failure in complying with this requirement will render the tender disqualified.**

11.2 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 Tender Schedule.

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

## **12. Invitation for Tenders**

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

12.2 Please provide two sets of tender documents for processing of the tender.

## **13. Tender Preparation and Submission**

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

- A Statement of Compliance to provide response that the quotation complies with all requirements stated in this Specification.
- Tender 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 shown 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.

#### **14. Briefing Session/Site Visit**

To facilitate the Service Provider to propose the quotation, a briefing session is arranged as follows. The Service Provider must attend the briefing session and carry out WiFi survey with appropriate tools.

Date: **19 July 2019**

Time: **0900-1500**

Venue: **12 Wong Yin Street, Tuen Mun**

#### **15. 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

#### **16. Enquiry**

For enquiry, please contact **LEE Chi Fong (Mr.)** of the School at **lcf@twmlsws.edu.hk** or by phone at **2980 2383**.

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**TENDER SCHEDULE**  
**(To be completed in duplicate)**

**1. Price details for Standard Provision**

Standard Provision	3 years		School's choice on confirmation
	Monthly price	Annual price	
WiFi Service Subscription: Total: approximately 32 rooms			
Total in HK\$			

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

Add-on Service		3 years				School's choice on confirmation
Item	Description	Additional monthly price		Additional annual price		
WiFi coverage for other areas	<ul style="list-style-type: none"> <li>All indoor and outdoor areas</li> </ul>					
Broadband service	<ul style="list-style-type: none"> <li>Provide at least one 1000Mbps Internet connection at school and one connection at hostel.</li> </ul>					

Add-on Service		3 years				School's choice on confirmation
Item	Description	Additional monthly price		Additional annual price		
Authentication Method	<ul style="list-style-type: none"> <li>● 802.1x standard based authentication</li> </ul>					
WLAN Access Control	<ul style="list-style-type: none"> <li>● Use pre-shared key mechanism. (Roaming SSID)</li> </ul>					
Internet Content Filtering Service	<ul style="list-style-type: none"> <li>● Base on filtering profile commonly adopted by most schools and managed by vendors.</li> </ul>					
Integration of networks	<ul style="list-style-type: none"> <li>● System integration with existing network with secure design.</li> </ul>					
Monitoring of WiFi network	<ul style="list-style-type: none"> <li>● Manage service model, provide end-to-end service including configuration provisioning of service, proactive monitoring maintenance and regular reporting</li> </ul>					

Add-on Service		3 years				School's choice on confirmation
Item	Description	Additional monthly price		Additional annual price		
Redundancy	<ul style="list-style-type: none"> <li>● 99.7% availability redundancy</li> </ul>					
WiFi Service Recovery	<ul style="list-style-type: none"> <li>● Support three-hour response time and three-hour service recovery</li> </ul>					
Support hours	<ul style="list-style-type: none"> <li>● From Mon to Sat 8:00 am to 6:00 pm</li> </ul>					
Reporting	<ul style="list-style-type: none"> <li>● Provide monthly monitoring reports for the School.</li> </ul>					

Items	Description	Once-off Payment	School's confirmation
Broadband and telephone lines fiber charge	Construction works and Fiber Charge		
Setup and installation charge of telephone lines	Setup and installation charge of telephone lines		
Supply and install of IT Enclosure and Cabinets	Number of 12RU: Number of 42RU		
Supply and install of UPS for the 42RU	Number of UPS:		

### 3. Wi-Fi.HK Service

Wi-Fi coverage area of Wi-Fi.HK :	
Will you provide free Wi-Fi.HK service (Y/N) ?	Y / N

### 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)		

**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

**5. 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

**6. A floor plan (provided by the School) is attached.**

To: Techoy Construction Company Limited

**TENDER SCHEDULE**  
**(To be completed in duplicate)**

**Fee on road excavation works - if applicable**

(1) Item No.	(2) Description/ Specification	(3) Unit Rate (HK\$)	(4) Total Amount (HK\$)	(5) Remarks (if any)
1.	Fee on road excavation works for providing  the Broadband, Telephone and Wifi Services  <i>(Address of the site being installed the service: 12 Wong Yin Street, Tuen Mun)</i>			

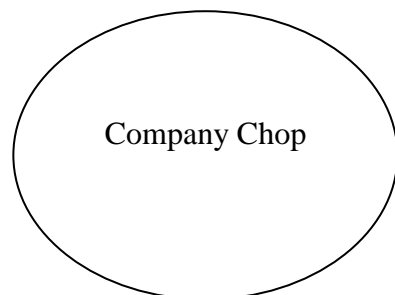
We/I understand that if we/I fail to supply the services as offered in our/my tender upon accepting the company's order, we are/I am prepared to pay the price difference to the company if such services are obtained from elsewhere.

Name of Company: \_\_\_\_\_

Signature of Person Authorized

to sign Tender: \_\_\_\_\_

Date: \_\_\_\_\_



The envelope cover should be marked as follows:

<p style="text-align: center;"><b>The Principal</b></p> <p style="text-align: center;"><b>Tung Wan Mok Law Shui Wah School</b></p> <p style="text-align: center;"><b>Shek Pik, Lantau Island</b></p> <p style="text-align: center;">(Tender for the Supply of Broadband, Telephone &amp; Wifi Services)</p> <p style="text-align: center;"><b>Tender Reference: T18/19-06</b></p>
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