

第一部分

澳門培正中學「2021-2022 學年資訊科技教育項目」購置標書

報價項目	
A. 設備保養及優化方案 (項目包括 A1 ~ A4) 目標：持續優化本校的網絡相關設備、有效監測及管理網絡，並善用頻寬，令網上教學暢順進行。	
A1. 校園網絡及無線網絡設備延續保養服務 (1 年)	見附件 A1
A2. 伺服器設備延續保養服務 (1 年)	見附件 A2
A3. 新增無線接入點	見附件 A3
A4. 延續 VMware 支援服務	見附件 A3
B. 更換伺服器	見附件 B
C. e-Class 網上學習平台 (C1-C5)	
<ul style="list-style-type: none"> • C1. e-Class 網上學習平台相關服務 • C2. eSchoolPad MDM Service (1 年) • C3. Integration Service of SSL Certificate (Renewal) • C4. eLibrary plus 中文電子圖書 • C5. eClass iPortfolio 帳號 	<p>見附件 C1</p> <p>見附件 C2</p> <p>見附件 C3</p> <p>見附件 C4</p> <p>見附件 C5</p>
D. 伺服器機櫃背板冷凍系統保養服務	見附件 D
E. 人工智能課程	見附件 E
F. 配合 eClass 對外服務租用高速校聯網光纖 (500M 本地 + 20M 海外 + 16 x IP) 服務年費	
G. 配合 eClass 及其他 API 發送短訊之服務費或年費 (以 3200 名學生計算) 包括 25,000 條短訊	
H. 租用光纖寬頻服務 1G (2 條)	

報價注意事項：

- 一、報價單請用澳門幣作貨幣單位
- 二、有效期應超越 2022 年 9 月 1 日
- 三、請列明交貨日期、安裝、保養方法、期限及付款方式
- 四、以上各項目可以個別報價，請列明是否可作部份項目購置
- 五、可提供同類產品
- 六、諮詢請電 28529333 內線 109 陳德明副主任，或內線 116 駱劍峰副主任
- 七、報價單請於 **2021 年 6 月 25 日下午 4 時前**，密封後交總務處 郭敬文副校長收，信封面請寫上

“2021-2022 學年資訊科技教育項目標書”

附件 A1

A1. Cisco 校園網絡及無線網絡設備延續保養服務 (1 年)

目的 :

為本校的網絡及無線網絡設備延續保養及提供為期 1 年的技術支援及保養服務。

設備內容 :

Item	Item Description	Qty	Unit Price (Mop)	Total Price (Mop)
a-1	- Hardware Maintenance and Service for Wi-Fi Network	1		
	Below items maintenace period - 1 YEAR, 8x5xNBD Period from 1/7/2021~30/6/2022	hw/year		
	AIR-CAP3602I-N-K9, 802.11n CAP w/CleanAir; 4x4:3SS; Mod; Int Ant; N Reg Domain	64		
	WS-C2960S-48FPD-L, Catalyst 2960S 48 GigE PoE 740W, 2 x 10G SFP+ LAN Base	1		
	WS-C3750X-24P-L, Catalyst 3750X 24 Giga Port PoE LAN Base, with 715W AC power	1		
	AIR-CT5508-50-K9, 5508 Series Controller for up to 50 Aps	2		
	AIR-CAP3602E-N-K9, 802.11n CAP w/CleanAir; 4x4:3SS; Mod; Ext Ant; N Reg Domai	6		
	WS-C2960S-24PD-L, Catalyst 2960S 24 GigE PoE 370W, 2 x 10G SFP+ LAN Base	1		
a-2	- Hardware Maintenance and Service for New Wi-Fi Network	1		
	Below items maintenace period - 1 YEAR, 8x5xNBD Period from 1/9/2021~31/8/2022	hw/year		
	AIR-CAP2702I-S-K9, 802.11ac CAP w/CleanAir; 3x4:3SS; Mod; Int Ant; S Reg Domain	28		
	Peplink 710 Multi-WAN Router	2		
	FortiGate - 500D Firewall (include Gateway AV, NIDP, Content Filtering,Web Filtering & Antispam)	2		
	WS-C2960X-24TS-S, Catalyst 2960X 24 GigE , 2 x SFP+ LAN Lite	1		
	WS-C3750X-24T-S, Catalyst 3750X 24 Giga Port IP Base, with 350W AC power supply	1		
	AIR-AP2802I-S-K9, 802.11ac CAP w/CleanAir; 4x4:3MU/SS; Mod; Int Ant; S Reg Domain	3		

a-3	- Hardware Maintenance and Service for Data Network	1		
	Below items maintenace period - 1 YEAR, 8x5xNBD Period from 1/7/2021~30/6/2022	hw/year		
	WS-C3750G-12S-S, Catalyst 3750 12 SFP Standard Multilayer Image	2		
	WS-C3750G-24TS-S1U, Catalyst 3750 24 10/100/1000 + 4 SFP Std Multilayer;1RU	2		
	WS-C2960S-48TS-S, Catalyst 2960S 48 GigE, 4 x 1G SFP+ LAN Base	2		
	WS-C2960X-24TD-L, Catalyst 2960X 24 GigE, 2 x 10G SFP+ LAN Base	1		
	WS-C4500X-16SFP+,Catalyst 4500X 16SFP+	1		
b	- Professional Maintenance/Admin Service	1 year		
	- Network equipment is per list in item a-1,a-2,a-3			
	- Service scope is as per below, & service under level 8x5xNBD			
			Total :	

Service Scope:

(A) Service requirement:

- 1) 8x5xNBD (9.00am~5.30pm), excl public holidays, Saturday & Sunday by the proper response time, or work to remedy by mutual arrangement.
- 2) System is under good air-condition, stable electricity, safe/secure space.
- 3) Supported by phone/e-mail/remote/on-site (fix, review, visit or meeting)
- 8x5xNBD on site (min 2 hours a trip), 8x5 on phone/e-mail/fax/remote.
- 4) School's support team provides 1st line support for daily work, e.g. w/ IT co-ordinator; and service provider supply 2nd line support for the system admin, tuning or remedy.
- 5) Equipment datasheets and Cisco information are from www.cisco.com.
- 6) When co-adm, all related docu, IP, master passwords and also have a latest system back-up copy on school's hand and required to release.

(B) Service work:

1. Perform a health check on-site/remote once maintenance has confirmed; To validate if the equipment is in good condition to continue maintenance.
2. All relevant passwords and docus are ready to work and sync together.
3. System fine-tune work only (not rebuild, migrate or relocate the system) unless the system has been corrupted naturally. It is recovered by (B) 5.
4. Problem identify and fix issues with minor modification and fine-tunning, and it is not limit to hardware failure, but any issue relates to the network.
5. Reload backup/config to the replaced devices and ensure proper running.
6. Update patch and bug fix on condition (patches or fixes are from Cisco).

7. Provide rigid advices where applicable for other systems integration, inlliaison w/ other project parties, also recommendation of new firewalls, etc.
8. System review/re-training/care 2 times for 1 year (school's client's arrangement), and each time of system review/re-training will be conducting 4 hours.
9. System log report will provide by service provider to Pui Ching by monthly.
10. Network documentation report will produce and update a year.

Item Description		Qty	Unit Price (Mop)	Total Price (Mop)
c	-WiFi Equipment warranty	1		
	Ruckus R710 AP Service Period: 1/7/2021~30/6/2022	57		
	Ruckus SmartZone 100 Service Period: 1/7/2021~30/6/2022	2		
d	- Professional Maintenance/Admin Service - equipment is per list in Equipment List - Service scope is as per below, & service under level 8x5xNBD	1 year		
			Total :	

Service Scope:

(A) Service requirement:

- 1) 8x5xNBD (9.00am~5.30pm), excl public holidays, Saturday & Sunday by the proper response time, or work to remedy by mutual arrangement.
- 2) System is under good air-condition, stable electricity, safe/secure space.
- 3) Supported by phone/e-mail/remote/on-site (fix, review, visit or meeting)
- 8x5xNBD on site (min 2 hours a trip), 8x5 on phone/e-mail/fax/remote.
- 4) School's support team provides 1st line support for daily work, e.g. w/ IT co-ordinator; and service provider supply 2nd line support for the system admin, tuning or remedy.
- 5) Equipment datasheets and Ruckus information are from www.ruckuswireless.com.
- 6) When co-adm, all related docu, IP, master passwords and also have a latest system back-up copy on school's hand and required to release.

(B) Service work:

1. Perform a health check on-site/remote once maintenance has confirmed; To validate if the equipment is in good condition to continue maintenance.
2. All relevant passwords and docus are ready to work and sync together.
3. System fine-tune work only (not rebuild, migrate or relocate the system) unless the system has been corrupted naturally. It is recovered by (B) 5.
4. Problem identify and fix issues with minor modification and fine-tunning, and it is not limit to hardware failure, but any issue relates to the network.
5. Reload backup/config to the replaced devices and ensure proper running.
6. Update patch and bug fix on condition (patches or fixes are from Ruckus).

7. Provide rigid advices where applicable for other systems integration, inclliaison w/ other project parties, also recommendation of new firewalls, etc.
8. System review/re-training/care 2 times for 1 year (upon school's arrangement), and each time of system review/re-training will be conducting 4 hours.

附件 A2

A2. 伺服器設備延續保養服務 (1 年)

目的：

為本校的檔案系統及設備延續保養及服務 1 年。

設備內容：

Item Description		Quantity	Unit Price(Mop)	Total Price(Mop)
1	POWEREDGE R730	2		
	Serial Number : 4HPPG62 ; HN84MD2 Service Level : PSP-4HR(7*24) Service Period : 01-Jan-2022 to 31-Dec-2022			
2	POWEREDGE R730	1		
	Serial Number : CQ2QMK2 Service Level : PSP-4HR(7*24) Service Period : 21-Jul-2021 to 31- Dec -2022			
			Total :	

附件 A3

A3. 新增無線接入點

目的：於指定地點新增無線接入點，提升網絡的連線的覆蓋範圍及穩定性。

設備內容：

Item Description		Quantity	Unit Price(Mop)	Total Price(Mop)
1	Ruckus AP R710			
1.1	ZoneFlex R710 dual-band 802.11abgn/ac (802.11ac Wave 2),Wireless Access Point, 4x4:4 streams, MU-MIMO, BeamFlex+, dual ports, 802.3af/at PoE support. Does not include power adapter or PoE injector. Includes Limited Lifetime Warranty. Part No. 901-R710-WW00	1		
1.2	Ruckus Multipurpose Mounting Bracket for Indoor AP's Part No. 902-0120-0000	1		
1.3	Ruckus Wireless Controllers Licenses AP management license for SZ-100/vSZ 3.X/SCG200/SZ300, 1 Ruckus AP access point. Part No. L09-0001-SG00	1		
1.4	Support for Per SZ/(v)SZ AP, 5 Years	1		
2	Installation and configuration	1		
			Total :	

附件 A4

A4. 延續 VMware 支援服務

目的：續訂 VMware 三年支援服務，支援等級不變。

設備內容：

Item Description		Quantity	Unit Price(Mop)	Total Price(Mop)
1	Part No. VS7-STD-P-SSS-C Production Support Coverage VMware vSphere 7 Standard for 1 processor Service Period : 09-AUG-21 to 08-AUG-24	2		
2	Part No. VCS7-STD-P-SSS-C Production Support Coverage VMware vCenter Server 7 Standard for vSphere 7 (Per Instance) Service Period : 09-AUG-21 to 08-AUG-24	1		
			Total :	

附件 B

B. 更換伺服器

目的：

更新運作不穩或已不獲續保的伺服器。

內容：

- 以下設備可提供具同等或以上功能的產品
- 所有新購設備需提供未來 5 年之保養及支援服務
- **Service Level : (7x24) 4-hour Onsite Service**

	Item Description	Qty	Unit Price (Mop)	Total Price (Mop)
1	Dell PowerEdge R440 Server Intel Xeon Silver 4208 2.1G, 8C/16T, 9.6GT/s, 11M Cache, Turbo, HT (85W) DDR4-2400 iDRAC Group Manager, Enabled 2.5" Chassis with up to 8 Hot Plug Hard Drives Standard Bezel Riser Config 1, 1 x 16 FH PowerEdge R440 x8 Drive Shipping Material Quick Sync 2 (At-the-box mgmt) Performance Optimized 3200MT/s RDIMMs 2 x 16GB RDIMM, 3200MT/s, Dual Rank iDRAC9,Enterprise 4 x 2.4TB 10K RPM SAS 12Gbps 512e 2.5in Hot-plug Hard Drive Internal PERC PERC H740P RAID Controller, LP Adapter Performance BIOS Settings Standard Heat Sink DVD +/-RW, SATA, Internal Dual, Hot Plug, Redundant Power Supply (1+1), 550W 2 Jumper Cord - C13/C14, 2M, 250V, 10A (EU, TW, APCC countries except ANZ) CS2.0 Tollfree number label for HK Dual-Port 1GbE On-Board LOM ReadyRails Sliding Rails With Cable Management Arm RAID 5 Windows Server 2019 Standard,16CORE,Digitally Fulfilled Recovery Image, Multi Language Limited Warranty:5 year (Labor)	1		

2	Service for DHCP Server - Data Migration - Migrate existing HP Server VM to new Server - Office hours - Including testing and site survey - Hardware and cabling work are excluded	1		
			Total :	

附件 C1

e-Class 網上學習平台相關服務 (1 年)

內容 :

Item Description		Qty	Unit Price (Mop)	Total Price (Mop)
1	eClass Parent App (3200 users)	1 year		
2	eClass Teacher App (201-250 users)	1 year		
3	PowerLesson App Connection Service	1 year		
4	Onscreen Marking Tool	1 year		
5	Flipped Channels with VOD - Disk space: 400GB - Monthly Playback traffic: 6TB	1 year		
6	Annual managed maintenance service	1 year		
7	eClass Maintenance Package Renewal	1 year		
8	Hardware Maintenance Renewal of Cisco Switch · CON-SMBS-WSC24TDL · SMB SA 8x5xNBD for WS-C2960X-24TD-L (1 year hardware maintenanceonly) · S/N: FOC1820S0PX · Covered Period: 9 Oct 2021 - 8 Oct 2022	1 year		
			Total :	

附件 C2

eSchoolPad MDM Service (1 年)

內容 :

Item Description		Qty	Unit Price (Mop)	Total Price (Mop)
1	eSchoolPad MDM Service(IOS) Service Period: 1 year Covered Period: 1 Jan 2022 to 31 Dec 2022	650		
			Total :	

附件 C3

Integration Service of SSL Certificate (Renewal)

內容：

Item Description			Qty	Unit Price (Mop)	Total Price (Mop)
1	Class Web SSL Integration Service	<ul style="list-style-type: none"> ■ Installation of a valid SSL certificate on eClass web server is based on the necessary information provided by client ■ Configuration of eClass web server for using the SSL certificate 	1		
2	Sectigo Positive SSL Certificate for eClass System Web Service	<ul style="list-style-type: none"> ■ Domain validated certificate ■ 2048 bit industry standard SSL certificate ■ 128/256 bit encryption ■ Email and web support 	1		
				Total :	

附件 C4

eLibrary plus 中文電子圖書：

內容：

Item Description		Qty	Unit Price (Mop)	Total Price (Mop)
1	<p>中文電子圖書 - 870 中文流行讀物系列_2021</p> <ul style="list-style-type: none"> ● 870 本中文流行讀物圖書數目 ● 適合中小學程度 ● 可作學科的參考書籍或課後讀物 <ul style="list-style-type: none"> ◆ 系列圖書：心靈勵志、成長自助、科普讀物、旅遊、健康、飲食文化、藝術、語文、教育、數學、通識、環 ◆ 保、小說、散文、詩集、中外名人傳記、歷史故事、神話故事、童話故事、漫畫繪本等 ◆ 系列出版社：天行者、天窗、爸媽學堂、青春、青桐社、青馬、青源、青藍、小麥文化、皇冠、突破、匯識教育、螢火蟲、藍鯨工作室等 <p>Covered Period: 8 Nov 2021 - 7 Nov 2022</p>	1 year		
			Total :	

附件 C5

eClass iPortfolio 帳號：

內容：

Item Description			Qty	Unit Price (Mop)	Total Price (Mop)
1	eClass iPortfolio Account	■ A unique account for each student	300		
				Total :	

附件 D

伺服器機櫃背板冷凍系統保養服務 (1 年)

目的：維持資料中心內的伺服器穩定運作。

設備內容：

Item	Item Description	Qty	Unit Price (Mop)	Total Price (Mop)
	- Rear Door Heat Exchanger Cooling System			
D1	7x24x365, 4 Hours, Parts (Repair or Replace, Excluded Pump Unit) & Labor for cooling system	1 year		
	<ul style="list-style-type: none"> ■ Coolcentric Rear Door Heat Exchanger Lite Version (LRDHx)/8-12Kw/42U H/ 600mm W ■ Coolcentric VT-20 6U Rackmount /20Kw Capacity, 230V Single Phase, 50/60Hz, Full Unit ■ 3/4" Brass Quick Coupling Pair (QCCFM) ■ High Pressure Hose, 350psi/Meter (HKJPHKT) ■ Manifold (CDU-XUFQ3B. 4 way with brass quick coupling connection) 			
D2	7x24x365, 4 Hours, Parts (Repair or Replace) & Labor for air cooled chiller system	1 year		
	Air Cooled Chiller <ul style="list-style-type: none"> ■ 22.5KW air cooled chilled (York Model: YCGA022SSE50/Carrier Model: 30RB021) ■ 32mm dia. Chilled water pipe with thermal insulation from chiller to CDU ■ Fresh water pipe to chiller ■ Power supply to chiller 			
D3	Provide preventive maintenance for chiller and RDHx quarterly	1 year		

附件 E

E. 人工智能課程

目的：

在中學設置人工智能課程，包括課程內容、線上實驗平台、線下硬體實教具，使學生了解人工智能初步技術，體驗人工智能技術應用。

設備或內容：

Item	Item Description	Qty	Unit Price (Mop)	Total Price (Mop)
E1	SenseStudy GPU 硬件實驗平台維護費	1 year		
E2	SenseStudy 平台課程			
E2.1	人工智能入門課程（上）- 學習平台	1 year		
E2.2	人工智能基礎課程 - 學習平台	1 year		
E2.3	Rover Pro 無人駕駛實驗包 - 學習平台	1 year		
E2.4	Storm Lego 智能車課程 - 學習平台 基礎版、提高版、進階版	1 year		
E2.5	人工智能入門課程（下）- 學習平台	1 year		
E3	導師培訓	5		

第二部分

澳門培正中學「2021-2022 學年資訊科技設備」購置標書

報價項目	
P1. 資訊科技教育 - 手提電腦	見附件 P1
P2. 線上直播、遠程交流課堂設備	見附件 P2
P3. 軟件	見附件 P3
P4. Lego Education Spike Prime Set	35 套

報價注意事項：

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- 三、請列明交貨日期、安裝、保養方法、期限及付款方式
- 四、以上各項目可以個別報價，請列明是否可作部份項目購置
- 五、可提供同類產品
- 六、諮詢請電 28529333 內線 109 陳德明副主任，或內線 116 駱劍峰副主任
- 七、報價單請於 **2021 年 6 月 25 日下午 4 時前**，密封後交總務處 郭敬文副校長收，信封面請寫上

“2021-2022 學年資訊科技教育項目標書”

附件 P1

P1. 資訊科技教育—手提電腦

數量&報價要求：請參考以下表格

Item	Description	Qty	U/Price MOP	Total Amount MOP
1	Lenovo ThinkPad T14 Notebook - Intel Core i7-10510U - 16GB DDR4-3200Mhz Memory - 512GB SSD M.2 PCIe-NVMe - 14" FHD (1920 x 1080), IPS, Anti-Glare, 250 nits - Intel Wi-Fi 6 AX201 2x2ax, Bluetooth 5.0 - 720P HD Camera with Mic, Fingerprint Reader - Backlit KB, 3Cell 50Wh Internal Battery - 65W USB-C AC adapter - W10 Professional - 4 Years warranty for parts & labour - USB Mouse + Carrying Case	4		
1.2	ThinkPad UltraSlim USB DVD Burner	4		
1.3	Upgrade to 1TB SSD M.2 PCIe-NVMe	4		
2	Lenovo ThinkPad X13 Yoga Notebook - Intel Core i7-10510U - 8GB DDR4-3200 Ram - 512GB M.2 2280, NVMe SSD - 13.3" FHD (1920x1080) IPS, Anti Reflection, 300nits, Multi-Touch - Integrated graphics, 3 cell 50Wh internal battery - Intel Wi-Fi 6 AX201, BT, FPR, ThinkPad Pen Pro - Win 10 Pro - 2D-Camera with Microphone, Backlit KB - 4 Years warranty for parts & labour - USB Mouse + Carrying Case	3		
2.2	ThinkPad UltraSlim USB DVD Burner	3		

Item	Description	Qty	U/Price MOP	Total Amount MOP
3.1	<p>Apple 13-inch MacBook Air</p> <ul style="list-style-type: none"> - Apple M1 chip with 8-core CPU, 8-core GPU - 16GB unified memory - 256GB SSD storage - Retina display with True Tone - Backlit Magic Keyboard - US English - Touch ID, Touch ID - AppleCare Protection for upgrading to 3 years warranty 	6		

附件 P2

P2. 線上直播、遠程交流課堂設備

數量&報價要求：請參考以下表格

Item	Description	Qty	U/Price MOP	Total Amount MOP
1	Crestron-CCS-UC-1-AV-PLUS Crestron Mercury® – Tabletop UC Video Conference System w/Huddly IQ camera(Smart Zoom)	1		

附件 P3

P3. 軟件

目標：教學(學生)及教職員使用的軟件。

軟件名稱	數量及授權方法
Parallels Desktop for Mac - Parallels Desktop for Mac Business Edition Acad Renewal 1Yr (per user) (License type)	47 套 & 1 year
Microsoft Office 365 Home (1-year Subscription; 5 Licenses)	14 套 & 1 year
Microsoft OfficeStd 2019 SNGL OLP NL Acdmc	7 套
Microsoft OfficeMacStd 2019 SNGL OLP NL Acdmc	6 套
ESET School Site License (Total Solution) - Renew Existing ESET NOD32 or ESET Smart Security School Site License user Level: 500 - 999 Users	1 套