Dear Sirs,

INVITATION TO TENDER FOR THE SUPPLY OF

Participation in Robotic Competition (Tender/2122/07)

You are invited to quote for the supply 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 duplicate should be clearly marked on the outside envelope: Tender for Participation in Robotic Competition.

The envelope should be addressed to "S.K.H. TSOI KUNG PO SECONDARY SCHOOL, 101 Chung Hau Street, Homantin, Kowloon" and arrive not later than 12:00pm on 15th February 2022. Late tenders will not be accepted. Your tender will remain open for 90 days from the "Closing Date", and you may consider your tender to be unsuccessful if no order is placed with you within these 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 quote, it would be appreciated if you would return the tender form with reason to the above address at your earliest convenience.

Tender will be accepted on an *'overall' / ~~'group'~~ / ~~'itemized~~' basis.

Yours sincerely,

_____

(Ms.) Lam Yuk Kei

Principal

Encl.

Please delete as appropriate

TENDER FORM FOR THE SUPPLY OF
Participation in Robotic Competition (Tender/2122/07)

Name and Address of School S.K.H. Tsoi Kung Po Secondary School

101 Chung Hau Street, Homantin, Kowloon

Tender Closing Date and Time 15th February 2022 12:00pm

PART I

The undersigned hereby offers to undertake the service as described in the tender schedule within the period of time as specified therein from the date of a firm order placed by the school at the price or prices quoted in the tender schedule including labour, materials, all other charges and in accordance with the details provided by the school. 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 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 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 15th February 2022.

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.

Dated this _____ day of _____ 20 _____ .

Name (in block letters): _____

Signature _____ in the capacity of _____ .

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

Duly authorized to sign tenders for and on behalf of :

_____

whose registered office is situated at_____

_____ Hong Kong.

Telephone No. _____ .Fax No. _____

S.K.H. TSOI KUNG PO SECONDARY SCHOOL

TENDER

(1) Item No.	(2) Description / Specification	(3) Quantity required	(4) Unit Rate	(5) Total Amount (HK$)	(6) Delivery Offered
1	Participation in Robotic Competition (see attachment)				

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

Company Chop

Name of Supplier : _____

Name and Signature of Person authorized to sign Written quotation

Name (in block letters)_____ Signature: _____

Date : _____

聖公會蔡功譜中學

機甲大師青少年挑戰賽 計劃

項目: 機甲大師青少年挑戰賽 計劃 **(Participation in Robotic Competition)**

目的:
1. 培養學生對資訊科技的興趣並在學校營造學習資訊科技的氛圍
2. 讓學生了解新科技的最新發展
3. 加強學生的運算思維技巧
4. 增強學生應用所學的資訊科技知識及技能的能力
5. 豐富學生的學習經驗，例如參與比賽、參觀、專題研習等

A. 要求

* 所有投標價錢必須根據以下表格填寫

項目一: 課程部份					
項目	**服務詳情**	**單項價格**	**時數**	**單位**	**價錢(HK$)**
Youth Tournament course					
Robot control and coding session	● 對象: 中三學生 ● 人數: 60 人 (共兩班，每班約 30 人) ● 時數: 6 小時 ● 課程要求，請看附件三		6	小時	
Advanced Training	● 對象: 中四至中五學生 ● 人數: 20 人 ● 課程內容: ■ 理論課: 3 小時 ■ 實習課: 12 小時 ■ 課程要求，請看附件一 ● 完成課程後，學生有能力參加機甲大師青少年挑戰賽 2022 (RoboMaster Youth Tournament 2022) (RoboMaster Youth Tournament 2022)		15	小時	
提供以上課程，並供應以下器材供課程之用 (項目二)			**項目一: 課程部份總額**		

項目	詳情	單項價格	數量	單位	價錢(HK$)
項目二: 硬件部份（以下器材擁有權歸學校）					
Robotic Car	詳情請看附件二		10	架	
Programmable drone	詳情請看附件三		5	架	
Battery	Li-ion battery - For Robotic Car - High energy Li-ion battery - Up to 35 minutes of battery life - Multiple battery protection functions		20	件	
Gel beads	---		6	件	
Battlefield	Youth Tournament Site (full zone) ● These kits are used in robotic competition (RoboMaster Youth Tournament [Must]), interactive gaming, and education		1	set	
Maintenance	Repair and exchange		1	年	
以上器材擁有權歸學校所有			**項目二: 硬件部份總額**		

計劃總額: 項目一總額 + 項目二總額 = HK$_____

投標者必須提供以下文件，如投標者欠缺以下文件，將會影響本校對投標者的評分:

No.	內容	如有，請用「✓」
1	推行相關課程的例子 (例如曾在其他學校推行，並須提供有關文件)	

B 其他要求：

- 比賽場地 (Battlefield) 必須符合機甲大師青少年挑戰賽 2022 (RoboMaster Youth Tournament 2022) 的標準，若不符合標準者，標書則不作考慮。
- Robotic Car 及 Programmable drone 必須符合機甲大師青少年挑戰賽 2022 (RoboMaster Youth Tournament 2022) 的標準，若不符合標準者，標書則不作考慮。
- 完成項目一課程後，學生必須能夠有能力參加機甲大師青少年挑戰賽 2022 (RoboMaster Youth Tournament 2022)，若不符合標準者，標書則不作考慮。
- 投標者提供之導師及教材，必須符合「中華人民共和國香港特別行政區維護國家安全法」(港區國安法) 要求，所有教材必須先由本校老師檢閱其內容。
- 導師須進行性罪行定罪紀錄查核，相關文件須於課程前交給學校查核。
- 導師進入校園必須遵守當時教育局有關對 Covid-19 之防疫指引。
- 因本校必須遵守當時教育局有關對 Covid-19 之防疫指引，因此活動安排隨時有更改，甚至取消。若課程在舉行之時段內，教育局宣佈停課，本校會按已舉辦之時數，按比例支付課程費用。
- 課程預計於 2022 年 3 月開始。
- 確保課程內容不會侵犯其他知識產權。
- 交回報價單的地址: 九龍何文田忠孝街 101 號 聖公會蔡功譜中學 1 樓校務處。

C. 評審準則

本校會選取評分計劃中整體最高分數的投標書，評審準則如下:

No.	項目	百分比	備註
1	報價	50%	價格合理
2	課程內容	40%	包括課程設計，計劃可行性，切合本校學生的能力等
3	專業經驗	10%	曾推行相關課程的經驗
	總分	100%	

D. 查詢

如有任何查詢或說明等，可聯絡本校馮廣恒老師，聯絡電話: 2760 0463。

附件一: Youth Tournament course specification

- Eligibility for RoboMaster Youth Tournament 2022
- 10 lessons focus on RoboMaster Youth Tournament 2022
- The content of the course as below

Lesson	Content
1	Description of coding logic
2	Artificial intelligence data reading and understanding
3	PID control and analysis
4	TOF and deep infrared sensing applications
5	The installation and test of robotic arm
6	Applications of robotic arm
7	AI smart car line-based tasks
8	Automatic tracking labels
9	Resource Island ammunition clamping Mission
10	Battle training

附件二: Robotic Car specification

Four-wheeled Robot with programmable Modules, Scratch and Python Coding

This educational robot offers programming and AI to any classroom. It also brings the official stand-alone Software Development Kit (SDK), expandable software and hardware, a custom curriculum, and the all-new tournament.

Specification

1. Robot body
- Weight Approx. 3.3KG
- Dimensions 320x240x270mm(Length x width x height)
- Chassis Speed Range 0-3.5m/s (forward) 0-2.5m/s (backward) 0-2.8m/s (sideways)
- Max Chassis Rotational Speed 600 degree/second
2. Infrared Distance Sensor
- Detection Range: 0.1-10m
- FOV 20 degree
- Accuracy: +/- 5%
3. Robotic Arm
- Movement Range Horizontal: 22cm, Vertical: 15cm
- Number of Axes 2
4. Gripper
- Range Approx. 10cm
5. Servo
- Weight Approx. 70g
- Body Dimensions 44.2x22.6x28.6mm
- Transmission Ratio 512:1
- Operation Modes Angle mode, Speed mode
6. Sensor Adaptor
- Port Type IO, AD
- Number of Ports 2

7. Power Connector Module

- Communication Port CAN bus (5)
- Output USB Type A power port: 5V 2A
- Power port with pin header: 5V 4ATX30
- Power port: 12V 5A Input TX30

8. Camera

- FOV 120 degree
- Max still photo resolution 2560x1440
- Max Video resolution FHD: 1080/30fps HD: 720/30fps
- Max Video Bitrate 16Mbps
- Photo Format JPEG
- Video Format MP4
- Sensor CMOS ¼
- Effective picels: 5MP
- Operating Temperature Range -10 to 40 ℃

9. Narrow Infrared Units

- Effective range [2] 6m (indoor lighting conditions)
- Effective Area Varies from 10 to 40 degree
- Effective range decreases as distance from the target increases.

10. Wide Infrared Units

- Effective Range [2] 3m (indoor lighting conditions)
- Effective Width 360 degree (indoor lighting conditions)

附件三: Programmable drone

Aircraft Modular with expansion kit	
Aircraft	
Take-off weight	87g (included Battery, Propellers, Guards)
Size	98x92.5x41 mm
Propellers	3 inches
Built-in functions	Range Finder, Barometer, LED, Vision System, 720p Live View, Wi-Fi Connection
Port	Micro USB Charging Port
Flight Performances	
Max. Flight Distances	100m
Max. Speed	8 m/s
Max. Flight Time	13 mins
Max. Flight Height	30m
Battery	
Detachable Battery	1.1Ah/3.8V
Camera	
Photo	5MP
FOV	82.6°
Video	HD720P30
Format	JPG(Photo); MP4(Video)
EIS	Yes

Open-Source Controller	
Weight	12.5g
Size	49.5 x 32 x 15.2 mm
Operating Mode	Direct Connection Mode, Router Mode
Wi-Fi	2.4G, 5.8GHz
Bluetooth	2.4GHz
MCU	ESP32-D2WD, Dual-core Main Frequency: 160 MHz, Calculation ability: 400 MIPS
Open Source	Support SDK, Arduino, Scratch and MicroPython
Expansion	14-pin expansion port (I2C, UART, SPI, GPIO, PWM, power source)
LED	Full Color LED
Extension Board	
DIY Connection	14-pin extension port to 2x7 pin, 2.54mm dual in-line package, two reserved positions for 5V/3.3V power indicators, two reserved position for test indicators

Aircraft battery	
Model	GB1
Weight	26g
Detachable Battery	1.1Ah/3.8V
Volume	1100mAh

Battery hub	
Model	G1CH
Weight	29 g
Compatible Battery Model	GB1-1100mAh-3.8V
Input Current	3A
Input Voltage	5V

Sphere guard	
Size	186mm*186mm*111mm
Weight	13 g

Mission pad	
Description	Programmable mission pad designed for swarm fly

Router for swarm fly	
CPU	Quad core 717 MHz
Memory	256 MB DDR3
Antenna type	2x2 MIMO high-performance internal antenna (2.4 GHz / 5 GHz)
Lan port	Gigabit (RJ-45) x 1
Wan port	Gigabit (RJ-45) x 1
External ports	USB 3.0 x 1 (5V, 0.9A power output)
Size	154 mm x 199 mm x 65 mm
Wifi encryption	WEP, WPA/WPA2-Personal, WPA/WPA2-Enterprise, WPA2/WPA3-Personal, WPA3-Personal/Enterprise, Wi-Fi Enhanced Open (OWE)
IEEE 802.11ac	• IEEE 802.11a/b/g/n/ac • Simultaneous tri-band Wi-Fi • 5GHz-1: 867Mbps • 5GHz-2: 867Mbps • 2.4GHz: 400Mbps
IEEE 802.11ac wave2	MU-MIMO