Tender No:

KDU/PRO/CAP/ 102 /2022

General Sir John Kotelawala Defence University,
KandawalaEstate, Ratmalana,
Sri Lanka.
T: Phone: 2632028 , 2622995
Fax : 2622504, 2623599
Web:www.kdu.lk

07/ 06 / 2022

INVITATION TO BID AND GENERAL CONDITIONS OF TENDER

1. The Vice Chancellor of the General Sir John Kotelawala Defence University, as the Chairman, Department Procurement Committee Invites Bid/s from prospective Bidders for supply of **item/s listed in the schedule in Annex "A"**. **The relevant specifications of the item/s are indicated in Annex "B".**

2. **CLOSING DATE & TIME**. The tender will close at 1000 hrs. on 28/06 /2022. Any Bid submitted after the closing time of the tender will be rejected & unopened such bids will be returned to the bidder.

3. **VALIDITY OF BID**. The bid submitted under this tender **must be valid for a period of 120 days from the date of closing of tender**.

4. BID BOND / GUARANTEE.

(a) If the quoted bid value exceeds Rs: 2,000,000.00, such Bids should be accompanied with 1% of Bid Value an "on demand" and "unconditional" Bid Bond/Guarantee for a sum of **Rs: .....** in the format given in Annex "C" through a recognized local Bank or Insurance Company registered in Sri Lanka which is authorized by the Insurance Board of Sri Lanka to issue such Bid Guarantees. All Bid Bond/Guarantees should be valid for at least 30 days more than the validity period of bids, ie, for 150 days from the date of Bid opening. **Cheques will not be accepted as Bid Guarantee**.

(b) Submission of insufficient Bid Bond/Guarantee value or period will be considered as a "**major deviation**" and such offer will not be considered for further procurement action and will be rejected.

5. **VALUE ADDED TAX.** The Bidders who bid for locally delivered items must have the VAT registration. The VAT portion must be shown separately in the price schedule in Annex "A" and VAT registration number must be indicated. If the quoted item is exempted from VAT or Bidding Company is not liable for VAT, reference number and date of relevant Act number/Gazette notification/a certificate (as applicable) **issued for the current financial year** from the Commissioner General of Inland Revenue to that effect should be submitted along with the Bid.

6. **BID SUBMISSION.** The **bidder must duly sign at the last page (before Annexes) of this document** indicating the name of the signatory and the name of the company & place the company common seal to confirm the acceptance of tender conditions. **The Bid/s that do not include authorized signature will be rejected**. The Bid/s duly signed by the bidder enclosed and sealed in an appropriate cover addressed to the following address should be sent by registered post or could be deposited in the **appropriate tender box placed at General Sir John Kotelawala Defence University, Kandawala Estate, Ratmalana** (at the Main Entrance of General Sir John Kotelawala Defence University) on or before the time & date specified for the closing of tender. **The tender reference number, date & time of closing tender should be indicated & underlined at the top left corner of the envelop**.

Tender Ref No :.....
Closing Date & Time :.....

The Chairman,
Department Procurement Committee,
General Sir John Kotelawala Defence University,
Kandawala Estate, Ratmalana,
Sri Lanka.

7. The Bid/s must be submitted in the attached schedule of prices in Annex "A" as applicable. However, bidders could use similar formats prepared with their own letter heads with all the details mentioned therein and submit in **three copies along with duly signed copy of a General Conditions of tender**. The Bid/s must contain **Technical Literature, Pamphlets, Drawings and Quality Standard Certificate etc** necessary to determine characteristics of items offered and in case of Machinery/Vehicles & Equipment, servicing and workshop data/after sales service, back up facilities or any other facilities provided by the supplier.

8. **SUBMISSION OF SAMPLES/PAYMENT OF TESTING CHARGES**.

When it is required to submit samples, **every offer** must be accompanied with pre - marked samples. The marking of samples **indicating the Bidder & Offer number** must be done and the samples must be handed over to the officer at same place where tender box is placed **on or before the closing date & time of the Bid**. Samples submitted after closing time of the Bid will be rejected. The documents such as Air Way Bills etc, will not be accepted in place of samples. When the testing charges are required to be paid, bidders shall pay testing charges separately **for all offers** indicated in their bid/s.

(1) **Samples.** Please submit..... samples.

(2) **Testing Charges**. A sum of Rs ..... **per offer** must be paid to the Bursar of KDU, prior to the submission of bid and a copy of the receipt must be annexed to the bid. It is the responsibility of bidder to inform the Cashier of the Account Office to note the tender number on the receipt issued for such payments.

8. **BID OPENING**. All duly received bids **will be opened immediately after the scheduled closing time of Bids at the same venue**. Bidders or their accredited agents could be present at the time of opening of bids.

9. **PRICES.**

For locally delivered items (including locally manufactured items & foreign items imported by the bidders) price must be quoted in Sri Lankan Rupees, inclusive of all charges for delivery of items to General Sir John Kotelawala Defence University Ratmalana, Faculty of Allied Health Science (FAHS) Werahera and University Hospital Werahera or Southern Campus Sooriyawewa. **Unit price, VAT and Total price should be clearly indicated in schedule in Annex "A"**. Other than VAT, all other type of taxes (eg : NBT, BTT, etc.) should not be indicated separately and should be included in unit price.

10. **RESTRICTED TENDERS**. Invitation to Bids are circulated among the registered suppliers with Ministry of Defence (MOD), only bids submitted by registered suppliers will be allowed for consideration. However, Chairman, Department Procurement Committee reserves the right to invite the bids from multiple combinations of Procurement Methods as stipulated in Chapter III of the Government Procurement Guideline, 2006 to ensure highest competitiveness.

11. **PERFORMANCE BOND/GUARANTEE.** A successful bidder shall furnish a Performance Bond/Guarantee in the form of "On Demand" & "Unconditional" Bank/Insurance Guarantee for a sum equivalent to 10% of the contract value for every contract that exceeds Rs. 2,000,000.00 or equivalent amount in foreign currency through a recognized Commercial Bank registered in Sri Lanka or through an Insurance Company authorized by the Insurance Board of Sri Lanka to issue such Performance Guarantee for this purpose, **within two weeks from the date of notification of award**. The proceeds of the Performance Bond/Guarantee shall be payable to the Vice Chancellor of the General Sir John Kotelawala Defence University as compensation for any loss resulting from the supplier's failure to complete his performance obligations under the contract. If the contracted supplier fails to deliver the items on time or fails to complete the works as per the agreed contract, **THE TOTAL VALUE OF THE PERFORMANCE BOND/GUARANTEE** will be forfeited. If only partial delivery is made during the agreed contract period, the corresponding value percentage of undelivered quantity from the Performance Bond/Guarantee will be forfeited.

12. **SIGNING OF CONTRACT.** The notification of award will be transmitted to the successful bidder by post, by fax or e-mail. This notification constitutes the formation of the contract. The successful bidder should submit his written acceptance for the award and performance bond / guarantee (For awards over Rs. 500,000.00 without VAT) within 14 days of receipt of such notification. Upon acceptance of the award and furnishing of the Performance Bond/Guarantee, the successful bidder will have to enter into a formal contract with the Vice Chancellor of the General Sir John Kotelawala Defence University by signing the Contract.

13. **DELIVERY.** Preference will be given for early delivery. In case of bulk supplies for locally manufactured items, the delivery of **total quantity must be completed within 120 days of signing of contract**, unless mutually agreed for extended delivery period with General Sir John Kotelawala Defence University. **The bidder/s must indicate the proposed delivery schedule in Annex "D"**. In the event of placing a purchase order with the successful bidder, the total quantity so ordered must be supplied as one consignment unless part deliveries are agreed upon in the contract. The deliveries not made as per agreed delivery schedule will be considered as bad performances by the suppliers and **no extended delivery period will be authorized**. Under extreme unavoidable conditions too, the Chairman, Department Procurement Committee (Vice Chancellor of the General Sir John Kotelawala Defence University) reserves the right to grant or refuse delivery period extensions only within the current financial year with or without liquidated claim for delayed deliveries and that decision will be final.

14. **LIQUIDATED DAMAGES.** In case of delivery period extensions requested by the successful bidder, a sum equivalent to 1% of the total value of the delayed supply per delay of one week or part thereof may be deducted from the payment due to the supplier from the General Sir John Kotelawala Defence University as liquidated damages up to the maximum limit of 12% of the total value of delayed supplies.

15. **PAYMENT TERMS FOR LOCALLY DELIVERED ITEMS.** Payment will be made after acceptance of items which should be subjected to a pre-acceptance inspection/testing by General Sir John Kotelawala Defence University authorities. The delivery made to the General Sir John Kotelawala Defence University should not be considered as quantities taken over by General Sir John Kotelawala Defence University until items are properly accepted after pre-acceptance inspection. Any item that does not conform to the specifications or already approved sample will be rejected & it is the responsibility of the supplier to remove them from General Sir John Kotelawala Defence University stores/premises within 07 working days of such intimation (either verbal or written) at his own cost and replace them with items conforming to specification within one month of such rejection. The bidder shall allow approximately 60-90 days' period of credit from the date of acceptance of items for Account Office, General Sir John Kotelawala Defence University to obtain liquid cash from General Treasury & release the payment.

16. **RIGHTS OF THE PROCUREMENT COMMITTEE**. The Department Procurement Committee reserve the right to accept or reject whole or part of this tender and their decision will be final. The successful bidders will be notified. Information with regard to rejected or unsuccessful bids will not be communicated.

Thanking You,
Yours faithfully,

HRL ABEYRATHNA
For Vice Chancellor
General Sir John Kotelawala Defence University

I/We agree to abide by the conditions of tender and undertake to supply the items as per delivery schedule mentioned in the contract, in the event of an order been placed with me/my firm/company as a result of this tender.

……. Signature
…… Name of Signatory
……Name of the Company/Bidder

Date :- ……. Company seal

ANNEX "A"

SCHEDULE OF PRICES FOR LOCALLY DELIVERED ITEMS

S/N	ITEMS	DENO	QTY	PRICE EACH SLRS	TOTAL PRICE SLRS
	PURCHASE OF CIM/FMS TRAINING SYSTEM FOR MECHANICAL ENGINEERING DEPARTMENT				
01	CIM/FMS Training System	No's	01		
	As per attached specification				
	TOTAL				
	DISCOUNT				
	TOTAL(AFTER DISCOUNT)				
	VAT %				
	GRAND TOTAL				

(A) OTHER DETAILS

(i) DELIVERY PERIOD - **…….....**
(ii) MAKE & MODEL - **…….....**
(iii) VALIDITY PERIOD - **……...**
(iv) WARRANTY PERIOD - **……...**
(v) PAYMENT TERMS - **CREDIT**
(vi) COUNTRY OF ORIGIN - **……...**
(vii) DISCOUNT IF ANY - **……...**
(viii) ANY OTHER TAXES - **……...**

(B) VAT DETAILS - **VALUE ADED TAX PERMANENT REGISTRATION CERTIFICATE / VAT EXEMPTION LETTER ISSUED BY DEPARTMENT OF INLAND REVENUE TO BE ATTACHED**

(C) PLACE OF DELIVERY - **ITEMS TO BE DELIVERED TO THE "GENERAL SIR JOHN KOTELAWALA DEFENCE UNIVERSITY, KANDAWALA STATE, RATMALANA ALONG WITH THE COPY OF ORDER AND RELEVANT INVOICE.**

(D) Any queries / information with regard to this procurement / tender could be obtained from Officer Commanding Logistics Services office at General Sir John Kotelawala Defence University through e-mail ocls@kdu.ac.lk and by telephone number 0112622504 during working hours.

NOTE: UNIT PRICE AND TOTAL PRICE ARE TO BE INDICATED CLEARLY IN THE TENDER, IF NOT QUOTATION WILL BE REJECTED.

SUPPLIER NAME - ……

ADDRESS - ……

CONTACT NUMBER - ……

E MAIL ADRESS - ……

Company Seal

(E) Bid Reference: KDU/PRO/CAP/ 102 /2022

……
DATE

TECHNICAL SPECIFICATIONS OF CIM/FMS TRAINING SYSTEM

Equipment		**Specifications**
CIM/FMS system		The Flexible Manufacturing System (FMS) needs to expose students to automation and industrial applications by combining CNC technology with robotics and materials handling. Students should be able to develop and edit programs, record precise robotic positions, accurately mill/turn parts, and synchronize mill/turn and robot operation. Students should gain "virtual hands-on" experience in CNC and robot programming, especially in I/O commands. These packages can be able to use as a stand-alone work cell, or integrated within a CIM system. The robot tends the CNC machine and performs other part manipulation and/or assembly tasks. When used in a CIM system, the robot loads and unloads parts to and from the CIM conveyor. The robot is mounted on a base for mobility and a larger work area.
No	**Station**	**Technical Specifications**
1.	**CNC Turning Center**	WORKSPACE a) Travel in X/Y/Z 60/-/280mm b) Max. bar capacity 15mm c) Max turning diameter 60mm d) Max part length with tailstock 60mm e) Swing over bed 130mm f) Tool cross-section for external machining 12x12mm g) Tool cross-section for internal machining dia 10 h) Rapid traverse speed X/Y/Z 3/-/3m/min i) Work feed X/Y/Z 0 - 2 m/min j) Max. feed force in X/Y/Z 1000N MAIN SPINDLE k) Max RPM 300-4200 rpm

		l) spindle connection :Reputed Brand m) Max. drive power 1.1kW n) Max. Torque 10Nm TAILSTOCK o) quill stroke 35mm TOOL TURRET p) Number of tool positions 8 DIMENSIONS q) Dimensions (LxWxH)895x745x550 r) machine weight 150kg GENERAL s) Compact desktop CNC lathe t) Profile rail guides (linear guides) u) Automatic 8-fold tool turner v) Automatic referencing w) High resolution axis motors x) Spindle right/left rotation y) Industry-standard, stable gray cast iron sloping bed construction z) Safety technology according to the latest lathe standard aa) Software included bb) Constant surface speed : Programmable cc) Included Interchangeable Control System dd) Industrial design : 2 axes slant bed lathe ee) Safety equipment : Compliance with CE regulations ff) The system should be able to integrate into FMS or CIM systems.With the robotics interface, the machine can be connected to other machines or devices (eg loading and

		unloading robots) in addition to the basic control of peripherals (such as door automation, vice, etc.). gg) A DNC interface enables programs to be transferred or started from the host computer. hh) Compatible Keyboard ii) automation- and tool kits
2.	**6 Axis Robot**	6 Axis Robot grabs the workpiece and places it on the machine tool to process and complete the relevant action requirements. a) Degree of freedom: 6 b) Installation posture: On floor, hanging c) Structure: Vertical multiple-joint type d) Drive system: ACservo motor (J1 toJ3:50W with brake, J4,J6:15W no brake, J5:15Wwith brake) e) Position detection method: Absolute encoder f) Arm length: Shoulder shift g) Shoulder shift: 0 h) Upper arm: 250 i) Fore arm: 160 j) Elbow shift: 90 k) Wrist length: 72 l) Operating range (In degree) J1 300(-150 to +150) J2 180(-60 to +120) J3 95(+60 to +155) J4 320(-160 to +160) J5 180(-90 to +90)

		J6 400(-200 to +200) m) Maximum resultant velocity Approx. 2200 mm/s n) Load MaximumNote1) 1.5 kg o) Rating 1 kg p) Pose repeatability Note2) ± 0.02mm q) Ambient temperature 0 to 40℃ r) Mass Approx. 19kg s) Allowable moment load J4 1.44 Nm J5 1.44 Nm J6 0.73 Nm t) Allowable inertia J4 2.16x10-2 kgm2 J5 2.16x10-2 J6 5.62x10-3 u) Arm reachable radius (front p-axis center point) 418mm v) Tool wiring : Four input signals (Hand section), Four output signals (Base section), Motorized hand output (Hand section) w) Tool pneumatic pipes Φ4x4 (Base to hand section) x) Supply pressure 0.5 ± 10% MPa y) Protection specification IP30 z) Robot interface adapter aa) Pneumatic multi-functional gripper with an optical sensor bb) Teach box cc) Station trolley with profile plate dd) User panel with emergency stop

		ee) Pneumatic equipment including maintenance unit ff) The power supply unit 24 V gg) Electric cabling hh) Process module robot handling ii) Input slide module jj) Workpiece socket with sensor kk) Assembly retainer with sensor ll) 2 stack magazines mm) Mounting plate nn) Standardized cabling concept oo) Fixing materials for repeatable highly accurate fixation of the processing module on the profile plate pp) Process module robot assembly qq) Stack magazine module (caps) rr) Pallet (pistons) ss) Separating module (springs) tt) Output slide module uu) Mounting plate vv) Standardized cabling concept ww) Fixing materials for repeatable highly accurate fixation of the processing module on theprofile plate xx) Silent compressor for the Pneumatic multi-functional gripper yy) Software package with a eight-user license for offline programming and simulation of robot cells. zz) Software package with a dual-user license for online programming and visualization of robot cells aaa) The robot arm should satisfy the EU Machinery Directive 2006/42/EC in compliance with DIN EN 60204-1 and DIN EN ISO 12100. bbb) This station should be able to operate as a standalone station to perform customized assembly and manipulation tasks. When used in a CIM system, the robot loads and unloads parts to and from the CIM conveyor. ccc) The robot arm should be teachable, programmable and custamizable for different practicals with grippers and manipulations. ddd) Expected function of the system is given in annexure B.

		eee) A practical / workbook for students is required for operating the robot standalone activities. fff) Installation / Training session / after sales service required. ggg) Computer - A Desktop computer with an i7 processor, 8 GB RAM, 1 TB HDD, DVD ROM, 23-inch monitor, keyboard, and mouse.
3	**Conveyors**	700 mm conveyor belt with 24 V DC motor incl. stoppers After CNC machining, the robot removes the finished part and places it on the station's other conveyor belt, where it is either buffered or separated for further transport. **The proposed laboratory practical from this section is provided in Annexure A.** The practical will be operated and controlled using Programmable logic controller (PLC) and Desktop computer.
5	**RFID System**	The RFID system unit identifies the material by reading the electronic tag of the material on the Pallet, and submits the data to the upper computer, and the upper computer performs the corresponding action Technical parameter
6	**Machine Vision System**	General requirements of visual inspection unit: The visual inspection unit receives the signal from the upper computer, takes pictures, processes the results, and returns them to the upper computer to judge whether the workpiece is qualified.
7	**Management Station**	The PLC (Programmable Logic Controller) should control and monitor the flow of pallets on the conveyor with the help of sensors and actuators that are built into the stop stations. Various PLC types (Siemens, Omron, etc.,) and field bus systems (digital I/O, PROFIBUS, ASI bus) have to be supported. To achieve a proper pallet tracking function the following additional products are required • Closed Loop Conveyor to mount the stop stations and carry the pallets.

		• The conveyor has to stop alongside each CIM workstation. Include magnetic sensors for pallet detection and pneumatic pistons for halting and releasing the pallets. CIM software should provide a comprehensive solution for the study and practice of CIM/FMS methods and operations. CIM software should implement manufacturing execution system (MES) technology. It should integrate real-time information with the system's PC-based database, and maintain online communication with all subsystems through a LAN, a lab network, or the Internet. The CIM software should allow users to monitor CIM/FMS cell operations in real-time from remote locations. , users should be able to view real-time reports generated by the CIM manager, remotely track live production cycles in and view details of current CIM/FMS cell status. The CIM software open architecture should enable the integration of various hardware and software components, making it easy to expand and customize the CIM/FMS system. The Management Station should include PLC electrical control and I / O communication system, which is mainly responsible for peripheral equipment and robot control to realize the process and logic general control of intelligent manufacturing unit; the touch screen is responsible for human-machine interface and setting operation data
	Other	a) The units are supplied fully assembled b) Preferred CPU processing times for bit operations. c) PLC approvals: CE mark, UL, cULus FM, RCM (formerly C-TICK), KC, Marine Compatible with other items in the trainer and furniture. d) compatible Control panel mounted on the robot trolley e) compatible Trolley type incl. profile plate 700 x 350 f) software license and educational licences required. g) CNC programming software, machine license required.

		General Terms 1. Manufacturer authorization letter 2. Warranty – 2 year 3. Country of Origin – UK, EU, Japan, USA 4. Only reputed brands are accepted 5. Product support – 10 years 6. Annual maintenance arrangement to be signed by successful bidder 7. Comprehensive training for 5 personal 8. All manuals should be in English (workshop manual, spare part catalogue, operations manual) Standard set of operation tools, cutting tools and coolants

ANNEX "C"

SPECIMEN FORM OF BID SECURITY

By this Bond we .....(hereinafter called "the Bidder") and We (name of bank or insurance company) whose registered office is at..... (hereinafter called "the Surety") are held and firmly bound onto ……. (hereinafter called the Authority") in the sum of …….. for the payment of which sum the Bidder and the Surety bind themselves their successors and assigns jointly and severally by those presents.

Whereas the authority has invited the Tender and other persons to compete tenders in similar terms for the supply of ..... and to submit the same for the consideration of the Authority, and the Bidder proposes to submit to the Authority a Bid (hereafter called "the Bid") in accordance with such invitation, the Bond shall provide security to the Authority that the Bidder will honour certain obligations to be undertaken by him in the Tender in accordance with the following conditions.

Now the Conditions of this Bond are:

(a) That it shall remain in full force and effect until the earliest of

(i) (Date), being ( ) days from (submission date), the date stipulated by the Authority for the submission of tenders, or any prolongation of such date above notified to the Authority by the Bidder and the Surety in writing.

(ii) In the event of acceptance of the Tender by the Authority, the date upon which the Bidder provides a performance security to the Authority in accordance with the terms of the contract thereby made between them, or

(b) Subject to this Bond being in full force and effect, the Surety shall pay the full amount specified in this Bond upon receipt of first written demand form the Authority stating that.

(i) The Bidder has withdrawn his Tender during the validity of this Bond, or

(ii) The Bidder has failed to provide a performance security to the Authority in accordance with the terms of the tender within 14 days from receipt of intimation of award of the Tender.

No alteration in the terms of the Tender, nor any forbearance of forgiveness in or in respect of neither any matter or thing concerning the Tender on the part of the Authority, nor any objection from the bidder shall in any way release the Surety from any liability under this Bond.

The benefit of this Bond shall not be assignable by the Authority and upon its ceasing to be in full force and effect the Authority shall return the same to the Bidder.

This Bond shall be governed by the laws of Sri Lanka

I executed as a deed on this ( ) day of ( ) 20 ( )

For and on behalf of the Bidder	For and on behalf of the Surety
----------	----------
----------	----------
Signed by.....	Signed by .....
In the capacity of ----------	In the capacity of ----------
and by.....	and by .....
In the capacity of ----------	In the capacity of ----------
Seal (where applicable)	Seal (where applicable)

ANNEX "D"

DELIVERY SCHEDULE

(IT IS MANDATORY TO FILL THE FOLLOWING SCHEDULE BY THE BIDDER)

TENDER NO :

ITEM : …….

QTY : …….

DURATION	QTY
EX STOCK QTY (WITHIN 01 WEEK)	
01MONTH	
02 MONTHS	
03 MONTHS	
04 MONTHS	
TOTAL	

NAME OF THE BIDDER : …….

SIGNATURE OF BIDDER : …….

DATE : ……..

COMPANY SEAL : ……..: