



DeCAIR Project co-funded by the Erasmus+ Program of the European Union

Developing Curricula for Artificial Intelligence and Robotics (DeCAIR)

Project number: 618535-EPP-1-2020-1-JO-EPPKA2-CBHE-JP

Invitation to Tender

Equipment for AI and Robotics Study Labs

September 2021

<http://decair.ju.edu.jo/>



Dear Sir / Madam,

We kindly request you to submit your tender for the **supply of Equipment for study lab in Beirut Arab university in Lebanon**. This process is within the framework of DeCAIR Project “**Developing Curricula for Artificial Intelligence and Robotics (DeCAIR)**”, co-funded by the **ERASMUS+ Program of the European Union**.

When preparing your tender, please be guided by this invitation to tender.

Tenders should be submitted in English through **one** of the following means not later than **October 13, 2021 at 12 noon (Beirut Local time)**:

- a) **By email to achahine@bau.edu.lb**, kindly ensure that they are signed and in the pdf format. An acknowledgement of receipt will be sent to you accordingly.

- b) **Delivered by hand in a sealed envelope**: A receipt shall be obtained as a proof of submission, signed and dated by the receiving person at **BAU (Beirut Campus – Tarik El Jadida – Telephone : 01 300110) – Dean of Student Affairs Office or purchasing department**. The Office is open from 8:30am to 4:00pm Monday to Friday excluding holidays.



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Part I - Project Presentation

1.1 About DeCAIR

DeCAIR Project is a Joint project co-funded by the ERASMUS+ program of the European Union. It intends to develop curricula in the areas of AIR through new master's and bachelor programs. These programs will give students opportunities to specialize in AI technologies, Robotics technologies, or using AI solutions to develop smart and autonomous robots that can solve unconventional problems. Additionally, DeCAIR will improve the curricula of existing masters and bachelor programs in the areas of AIR, establish relevant modern laboratories, and implement modern teaching methods such as flipped learning and project-based learning. All this will improve the graduates' practical skills and enable them to exploit these revolutionary technologies to solve local and regional problems, create new jobs, and to start new ventures.

1.2 Morale partners – Project Consortium

Jordan

- ✧ The University of Jordan
- ✧ Jordan University of Science and Technology
- ✧ Tafila Technical University

Lebanon

- ✧ Beirut Arab University (Project Coordinator)
- ✧ Lebanese University

EU Partners

- ✧ University of Pisa - Italy
- ✧ University of Genoa - Italy
- ✧ University of Granada - Spain
- ✧ University of Stuttgart - Germany
- ✧ Creative Thinking Development - Greece

1.3 Disclaimer

"This project has been funded with support from the European Commission. This document reflects the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein."



Part II – Tender specifications

2.1 Object of the tender

This document represents an invitation to tender for the supply of AI and Robotics equipment as part of the DeCAIR Project co-funded by the ERASMUS+ Program of the European Union.

This invitation to tender is in no way binding on the contracting authority. The contracting authority's contractual obligation commences only upon signature of the contract with the successful tenderer.

2.2 Currency of the tender

The tenders shall be presented in EURO for both the unit prices and the overall amount of the commitment. The currency of payment will be also in EURO.

2.3 Language of the tender

The tenders shall be presented in English.

2.4 Submission of the tenders: Means and Deadline

Tenders should be submitted in English through **one** of the following means not later than **October 13, 2021 at 12 noon (Beirut Local time):**

a) by email to achahine@bau.edu.lb, kindly ensure that they are signed and in the .pdf format. An acknowledgement of receipt will be sent to you accordingly.

b) delivered by hand in a sealed envelope: A receipt shall be obtained as a proof of submission, signed and dated by the receiving person at **BAU (Beirut Campus – Tarik El Jadida – Telephone : 01 300110) – Dean of Student Affairs Office or purchasing department**. The Offices are open from 8:30am to 4:00pm Monday to Friday excluding holidays.

In all cases, please add the below reference:

**DeCAIR Erasmus+ Project – “Invitation to Tender -
Equipment for Study Labs”**



As mentioned above, the deadline for submission of tenders is **October 13, 2021 at noon (Beirut Local time)**. No offer may be submitted or modified after this date.

2.5 Documents to be submitted by the Tenderer

The tenderer must provide and complete the following documents:

1. Tender duly signed, dated and sealed; including:
 - Profile of the company
 - Main contact's name, phone number, email and address
 - Technical specifications
 - VAT exclusive prices (in Euros)
 - Catalogs of the proposed equipment
2. A photocopy of the trade name registration papers
3. Signed letter for after-sales service and 12-month warranty letter

Additional documents such as instructions and operating manuals shall be required with the delivery of equipment.

2.6 Estimate value of the contract

Based on average wholesale **market prices in Lebanon** at the time of this tender, the total value of the offer (VAT exclusive) should not exceed **36210 Euros**.

2.7 Deadline for engagement

Tenderers shall remain bound by their tenders for a period of sixty (60) days from the closing date for submission (**October 13, 2021 at 12.00 noon**).

2.8 Subcontracting

It is prohibited for the tenderers to subcontract parts of the tender to third parties. The tenderer will be the only responsible part who will contact the Lebanese partner universities.



2.9 Goods delivery charges and locations

Equipment will be delivered to **Beirut Arab university in Lebanon**. Delivery charges must be included in the offer if applicable.

The full address and contact details of the responsible person will be provided after the signature of the contract with the selected supplier.

2.10 Goods Delivery time

The delivery period may not exceed 30 days from the date of signature of the contract with the selected supplier.

2.11 Payment terms

The payment shall be done according to the following terms:

100% upon delivery of the equipment

Payment shall be made through a transfer from the project coordinating institution (**University of Jordan**) to the selected supplier within one month maximum after the delivery date.

2.12 Evaluation and award of the contract

The key principles that shall govern the process of evaluation of tenders are listed as follows:

- **Non-discrimination:** Any discrimination with regard to tenderers is forbidden.
- **Equal treatment:** All tenders submitted within the set deadline are to be treated equally. They must be evaluated on the basis of the same terms, conditions and requirements set in the tender documents.
- **Transparency:** Detailed written records must be kept (normally in the form of reports and minutes of the meetings held) of all actions of the evaluation panel. All decisions taken must be sufficiently justified and documented. In this way, any discriminatory behavior can be prevented and if not prevented, then monitored.



- **Confidentiality:** The process of evaluation of tenders must be confidential. Information concerning the process of evaluation of tenders and the award recommendation is not to be disclosed to the tenderers or to any other person who is not officially concerned with the process, until information on the award of the contract is communicated to all tenderers.

The contract will be awarded to the tenderer whose tender has been found to be in conformity with the invitation to tender. The award method will be the "**best value for money**" meaning that the winning tender is the one offering the best quality/price ratio.

Exclusion criteria: Tenderers are excluded from participation in procurement procedures if:

- they have submitted a tender that does not meet the requirements;
- they are bankrupt or being wound up, are having their affairs administered by the courts, have entered into an arrangement with creditors, have suspended business activities, are the subject of proceedings concerning those matters, or are
- in any analogous situation arising from a similar procedure provided for in national legislation or regulations;
- They have been guilty of grave professional misconduct proven by any means which the contracting authority can justify;
- They have not fulfilled obligations relating to the payment of social security contributions or the payment of taxes in accordance with the national legal provisions.

Selection criteria: Tenderers will be selected based on the following criteria:

- Having submitted the tender that complies with all of the specifications, requirements and offers the lowest price, as well as all other evaluation criteria indicated, shall be selected.
- Having the necessary economic, financial, technical and professional capacity to perform the contract

Award criteria: The awarded tenderer will be the one who offered the best quality and price tender out of those submitted by tenderers which are not excluded and which meet the selection criteria. The awarded tenderer should:



- Be in full compliance of tender to the tender specifications, quantities and technical specifications;
- Have previous related projects and references including proofs of similar contracts completed in the past
- Provided Technical information for all the equipment to be supplied

At the time of award of Contract or Purchase Order, the project reserves the right to vary (increase or decrease) the quantity of goods.

2.13 Opening / Evaluation Committee

Tenders will be opened by the **DeCAIR Project BAU Tender Evaluation Committee** comprising at least five members appointed for the purpose.

2.14 Notification of results

Tenderers will be notified of the results by email. Thus, it is important to provide the email of the main contact person.

2.15 Cancellation of the contract

Cancellation of Contract if the delivery/completion is delayed by four weeks with the condition of returning the down payment to the project.



Part III – Quantities and Technical Specifications

List of Equipment to Order through DeCAIR Project

Partner Name	Beirut Arab University	
Targeted Program(s)	Computer Engineering	
	Item	Quantity
1.	High-Performance Computing System	1
2.	FPGA Training Boards	12
3.	High-Performance FPGA Board	1
4.	GPUs	1
5.	Board Computers and Accessories	12
6.	Automation and Robotics Laboratory Kits	12
7.	Software Laboratory (MATLAB Toolboxes)	99 Users – Academic License

Specs:

1. High-Performance Computing System (quantity = 1):

Workstation minimum specs:

Processor: One or two Intel® Xeon® processor Scalable family CPUs with up to 28 cores per processor and Intel Advanced Vector Extensions, Intel Trusted Execution Technology, Intel AES New instructions, Optimized Intel Turbo Boost and optional Intel vPro™ technology.

OR Equivalent

Operating System: Windows 10 Pro (64 bit)

Other: High end 3D graphics acceleration cards; minimum of 64-128 GB RDIMM ECC SDRAM; High-end SSD hard disks.

2. FPGA Training Boards (quantity = 12):

Development Kit for FPGAs, minimum specs:

FPGA: 110K LEs, 41509 ALMs, 5140 M10K memory blocks, 6 FPGA PLLs and 3 HPS PLLs, 2 Hard Memory Controllers.

OR Equivalent

Co-processor system: A Dual-Core ARM Cortex™-A9 MPCore™ Processor, 512 KB of shared L2 cache, 64 KB of scratch RAM, Multiport SDRAM controller with support for DDR2, DDR3, LPDDR1, and LPDDR2; 8-channel direct memory access (DMA) controller.

OR Equivalent



Memory Devices: 1GB DDR3 SDRAM on FPGA; 1GB DDR3 SDRAM on Co-processor; 64MB QSPI Flash on Co-processor; Micro-SD Card Socket on Co-processor; Flash on FPGA.

OR Equivalent

Other: USB, 10/100/1000 Ethernet; Display (VGA, LCD, etc.); Audio (24-bit CODEC, Line-in, line-out, and microphone-in jacks); Arrays of switches, buttons, LEDs, reset buttons, etc.; Sensors (G-Sensor, Temperature Sensor on FPGA, etc.).

Programmable in VHDL

3. High-Performance FPGA Board (quantity = 1):

High-end FPGA Development Kit, minimum specs:

Purpose: For computationally intensive applications including AI and ML.

FPGA: High-end (speed) and high-density (area), hybrid (DSP modules, etc.); such as Intel Stratix X (or higher) or equivalent.

Memory: DDR4 SDRAM, RLDRAM3, etc.

Other: PCIe x16 edge connector, Serial digital interface (SDI) channel, Ethernet, and USB, etc.

OR Equivalent

Programmable in VHDL

4. GPUs (quantity = 1):

Minimum Specifications:

Frame Buffer: 12 GB HBM2

Boost Clock: 1455 MHz

Tensor Cores: 640

CUDA Cores: 5120

NVIDIA TITAN V <https://www.nvidia.com/en-us/titan/titan-v/>

OR Equivalent

5. Board Computers and Accessories (quantity = Varies):

Raspberry Pi Kits or equivalent.

Item	Quantity
Raspberry Pi 4 Desktop Kit	12 Boards
Compute Module Development Kit	4 Boards
Raspberry Pi Touch Display	4 Modules
Sense HAT	4 Modules
Raspberry Pi PoE HAT	4 Modules
Pi NoIR Camera V2	4 Modules
Camera Module V2	4 Modules
Raspberry Pi Zero W	4 Boards
Compute Module 3+	4 Modules

6. Automation and Robotics Laboratory Kits (quantity = Varies):

Arduino-based robotics and automation kits

OR Equivalent

Item	Quantity
ARDUINO Starter Kits	12 Boards
ARDUINO Bluetooth Shields	12 Shields
ARDUINO; GSM/GPS/GPRS/3G Shields	4 Shields
FPGAmazing Bundle	1 Bundle
Kysan 1124090 Nema 17 Stepper Motor	12 Motors
ARDUINO 4 Relays Shield	6 Motors
ARDUINO Motor Shield Rev3	6 Shields
Feetech 6 KG 360 Continuous Rotation Servo motor	6 Motors
Jumper wires of different types and lengths	5 Sets from each type and length
Arduino Robotics Kits	6 Kits

7. Software Laboratory (MATLAB Toolboxes) (quantity = 99 Users):

Curve Fitting

Reinforcement Learning

Text Analytics



HDL Coder
HDL Verifier
GPU Coder
HDL Verifier