



Pak-Austria Fachhochschule: Institute of Applied Sciences & Technology, Haripur

KHYBER PAKHTUNKHWA

REQUEST FOR PROPOSAL (RFP) FOR “Supply, Installation & Commissioning of Labs Equipment for Sino-Pak Center for Artificial Intelligence (SPCAI)”

Submission of Bids: Thursday, December 9, 2021 @ 12:00 noon

Opening of Bids: Thursday, December 9, 2021 @ 12:30 pm

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Section 1. Letter of Invitation

The Pak-Austria Fachhochschule: Institute of Applied Sciences & Technology (PAF- IAST), Haripur invites sealed bids from interested firms for the “**Supply, Installation & Commissioning of Labs Equipment for Sino-Pak Center for Artificial Intelligence (SPCAI)**” under the following Lots.

Lot. 1: Computer Vision Laboratory
Lot. 2: Smart City Laboratory
Lot. 3: Intelligent Field Robotics Laboratory
Lot. 4: Laboratory Furniture
Lot. 5: IT Equipment

The bidder must be registered and duly recognized in Pakistan, and be registered with FBR; possess Manufacturer’s status or Distributor/ Dealer status with authorization from Manufacturer/ Principal specific for this tender, with sufficient financial, technical and human resources to take up the task assigned and complete the same within prescribed time limit on the finalization of contract with PAF- IAST.

Tender document containing instructions to bidders covering definitions, introduction/ background of the Project, scope of work, general terms and conditions, and special terms, procedure for submission of bids, opening of bid, evaluation criteria, and other related information, can be obtained against a written request on company’s letterhead, from Pak-Austria Fachhochschule: Institute of Applied Sciences & Technology, Haripur – Pakistan. Cost of the document is Rs. 500/- Non-refundable (Stationery charges) for each LOT separately. Tender document can also be downloaded from <http://www.paf-iaast.edu.pk/> free of cost, however, the Bid should also be submitted along with Pay Order/ Demand Draft of Rs. 500/- (Stationery Charges). No bid will be accepted without Tender Document fee.

Bidder(s) interested in participating in the tender process are advised to submit their Bid Proposal(s), along with the Earnest Money amounting 2% of their Bid Value in the shape of CDR, in accordance with the instructions in this tender document. Bid Proposal(s) must reach PAF-IAST, Haripur on Thursday the December 9, 2021 by 1200 hrs. Any late Bid(s) shall not be accepted and returned unopened. Accepted Bids will be opened on the same day at 1230 hrs, in presence of bidders who chose to attend. In case of sudden holiday on bid opening day, bids will be opened on next working day. The Tender shall be executed in accordance with PPRA Rule 36(b) “Single Stage, Two Envelope Procedure”.

This advertisement is also available on PAF: IAST and PPRA websites <http://www.paf-iaast.edu.pk/> & <http://www.ppra.gov.pk> .

Project Director

Sino-Pak Center for Artificial Intelligence (SPCAI)

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Section 2. Instruction to Bidders (ITB)

A. GENERAL TERMS	
1. Introduction	<p>1.1 Bidders shall adhere to all the requirements of this ITB, including any amendments made in writing by PAF-IAST. This ITB will be governed under Clause 36(b) "Single Stage, Two Envelope Procedure" of Public Procurement Regulatory Authority.</p> <p>1.2 Any Bid submitted will be regarded as an offer by the Bidder and does not constitute or imply the acceptance of the Bid by PAF-IAST. The Institute is under no obligation to award a contract to any Bidder as a result of this ITB.</p> <p>1.3 PAF-IAST reserves the right to cancel the procurement process at any stage without any liability of any kind for PAF-IAST, upon notice to the bidders or publication of cancellation notice on PAF- IAST website.</p>
2. Fraud & Corruption, Gifts and Hospitality	<p>2.1 PAF-IAST strictly enforces a policy of zero tolerance on proscribed practices, including fraud, corruption, collusion, unethical or unprofessional practices, and obstruction of PAF-IAST vendors and requires all bidders/ vendors observe the highest standard of ethics during the procurement process and contract implementation.</p> <p>2.2 Bidders/ vendors shall not offer gifts or hospitality of any kind to PAF-IAST staff members including recreational trips to sporting or cultural events, theme parks or offers of holidays, transportation, or invitations to extravagant lunches or dinners.</p> <p>2.3 In pursuance of this policy, PAF-IAST:</p> <p>(a) Shall reject a bid if it determines that the selected bidder has engaged in any corrupt or fraudulent practices in competing for the contract in question;</p> <p>(b) Shall declare a vendor ineligible, either indefinitely or for a stated period, to be awarded a contract if at any time it determines that the vendor has engaged in any corrupt or fraudulent practices in competing for, or in executing a PAF- IAST contract; or counseling or canvassing staff or elected representatives; or engaging in collusion with other bidders.</p>
3. Eligibility	<p>3.1 A Bidder should not be suspended, debarred, or otherwise identified as ineligible by any Government/ Semi-government/ or any other international Organization. Bidders are therefore required to disclose to PAF-IAST whether they are subject to any sanction or temporary suspension imposed by these organizations.</p> <p>3.2 It is the Bidder's responsibility to ensure that its employees, sub-contractors, service providers, suppliers and/ or their employees meet the eligibility requirements as established by PAF-IAST.</p>
4. General Terms	<p>4.1 The Bidder should be registered with Sales Tax and Income Tax Department.</p> <p>4.2 The Bidder should have not been blacklisted by any Government/ semi Government organization.</p> <p>4.3 There should be no litigation against the bidder/ firm.</p>
B. PREPARATION OF BIDS	
5. General Considerations	<p>5.1 In preparing the Bid, the Bidder is expected to examine the ITB in detail. Material deficiencies in providing the information requested in the ITB may result in rejection of the Bid.</p>

	5.2	The Bidder will not be permitted to take advantage of any errors or omissions in the ITB. Should such errors or omissions be discovered, the Bidder must notify the Project Director, SPCAI accordingly.
6. Cost of Preparation of Bid	6.1	The Bidder shall bear all costs related to the preparation and/ or submission of the Bid, regardless of whether its Bid is selected or not. PAF-IAST shall not be responsible or liable for those costs, regardless of the conduct or outcome of the procurement process.
7. Language	7.1	The Bid, as well as any, and all related correspondence exchanged by the Bidder and PAF- IAST, shall be written in the language(s) specified in the BDS.
8. Documents Comprising the Bid	8.1	<p>The Bid shall comprise of the following documents and related forms of which details are provided in the BDS. All pages of the Bid shall be signed, stamped and properly paginated.</p> <ul style="list-style-type: none"> a) Returnable Forms as referred in Section 6 shall be properly filled in Ink or Typed. Forms filled in using a pencil shall not be considered and substantiate the annulment of the Bid Proposal. b) Documents Establishing the Eligibility and Qualifications of the Bidder; c) Bid covering Technical Specifications in detail, and covering Price Schedule; d) Bid Security, if required by BDS; e) Any attachments and/ or appendices to the Bid.
9. Documents Establishing the Eligibility and Qualifications	9.1	The Bidder shall furnish documentary evidence of its status as an eligible and qualified supplier, using the Forms provided under Section 6 and providing documents required in those forms. In order to award a contract to a Bidder, its qualifications must be documented to PAF-IAST's satisfaction.
10. Technical Bid Format and Content	10.1 10.2 10.3 10.4	<p>The Bidder is required to submit a Bid using the Standard Forms and templates provided in Section 6 of the ITB.</p> <p>Samples of items, when required as per Section 5, shall be provided within the time specified and unless otherwise specified by the Purchaser, at no expense to the Institute. If not destroyed by testing, samples will be returned at Bidder's request and expense, unless otherwise specified.</p> <p>When applicable and required in Section 5, the Bidder shall describe the necessary training program available for the maintenance and operation of the equipment offered as well as the cost to the Institute. Unless otherwise specified, such training as well as training materials shall be provided in the language of the Bid as specified in the BDS.</p> <p>When applicable and required in Section 5, the Bidder shall certify the availability of spare parts for a period of at least five (5) years from date of delivery, or as otherwise specified in this ITB.</p>
11. Price Schedule	11.1 11.2	<p>The Price Schedule shall be prepared using the Forms provided in Section 6 of the ITB and taking into consideration the requirements in the ITB.</p> <p>Any requirement described in this ITB but not priced in the Price Schedule, shall be assumed to have been included in the prices of other activities or items, as well as in the final total price.</p>
12. Bid Security	12.1 12.2	<p>A Bid Security shall be provided in the amount and form indicated in the BDS. The Bid Security shall be valid for the duration as referred in BDS.</p> <p>The Bid Security shall be included along with the Bid. If Bid Security not found in the Bid, the Bid shall be rejected.</p>

	<p>12.3 If the Bid Security amount or its validity period is found to be less than what is required, PAF-IASST shall reject the Bid.</p> <p>12.4 In the event an electronic submission is allowed in the BDS, Bidders shall include a copy of the Bid Security in their bid and the original of the Bid Security must be sent via courier or hand delivery as per the instructions in BDS.</p> <p>12.5 The Bid Security will be forfeited by PAF-IASST, and the Bid rejected, in the event of any, or combination, of the following conditions:</p> <ul style="list-style-type: none"> a) If the Bidder withdraws its offer during the period of the Bid Validity specified in the BDS, or; b) In the event the successful Bidder fails: <ul style="list-style-type: none"> i. to sign the Contract after PAF-IASST has issued an award; or ii. to furnish the Performance Security, insurances, or other documents that PAF-IASST may require as a condition precedent to the effectivity of the contract that may be awarded to the Bidder.
13. Currencies	<p>13.1 All prices shall be quoted in the currency indicated in the BDS. Where prices are quoted in different currencies, for the purposes of comparison:</p> <ul style="list-style-type: none"> a) PAF-IASST will convert the currency quoted into the currency indicated in BDS, in accordance with the prevailing Inter Bank rate of exchange on the last day of submission of Bids; and b) In the event that PAF-IASST selects a Bid for award that is quoted in a currency different from the preferred currency in the BDS, PAF-IASST shall reserve the right to award the contract in the currency of PAF-IASST's preference, using the conversion method specified above.
14. Joint Venture, Consortium or Association	<p>14.1 If the Bidder is a group of legal entities that will form or have formed a Joint Venture (JV), Consortium or Association for the Bid, they shall confirm in their Bid that : (i) they have designated one party to act as a lead entity, duly vested with authority to legally bind the members of the JV, Consortium or Association jointly and severally, which shall be evidenced by an intent letter or an Agreement among the legal entities duly notarized, and submitted with the Bid; and (ii) if they are awarded the contract, the contract shall be entered into, by and between PAF-IASST and the designated lead entity, who shall be acting for and on behalf of all the member entities comprising the joint venture.</p> <p>14.2 After the Deadline for Submission of Bid, the lead entity identified to represent the JV, Consortium or Association or any change in the constitution of the JV, Consortium or Association shall not be altered without the prior written consent of PAF-IASST/ Procurement Committee.</p> <p>14.3 The lead entity and the member entities of the JV, Consortium or Association shall abide by the provisions of Clause 15 herein in respect of submitting only one Bid.</p> <p>14.4 The description of the organization of the JV, Consortium or Association must clearly define the expected role of each of the entities in the joint venture in delivering the requirements of the ITB, both in the Bid and the JV, Consortium or Association Agreement or Intent Letter. All entities that comprise the JV, Consortium or Association shall be cumulatively subject to the eligibility and technical qualification assessment by PAF-IASST as defined in Section 4: Evaluation Criteria.</p>

	<p>14.5 A JV, Consortium or Association in presenting its track record and experience should clearly differentiate between:</p> <ul style="list-style-type: none"> a) Those that were undertaken together by the JV, Consortium or Association; and b) Those that were undertaken by the individual entities of the JV, Consortium or Association. <p>14.6 Previous contracts completed by individual experts working privately but who are permanently or were temporarily associated with any of the member firms cannot be claimed as the experience of the JV, Consortium or Association or those of its members, but should only be claimed by the individual experts themselves in their presentation of their individual credentials.</p>
15. Only One Bid	<p>15.1 The Bidder (including the individual members of any Joint Venture) shall submit only one Bid, either in its own name or as part of a Joint Venture.</p> <p>15.2 Bids submitted by two (2) or more Bidders shall all be rejected if they are found to have any of the following:</p> <ul style="list-style-type: none"> a) they have at least one controlling partner, director or shareholder in common; or b) any one of them receive or have received any direct or indirect subsidy from the other/s; or c) they have the same legal representative for purposes of this ITB; or d) they are subcontractors to each other's Bid, or a subcontractor to one Bid also submits another Bid under its name as lead Bidder; or some key personnel proposed to be in the team of one Bidder participates in more than one Bid received for this ITB process. This condition relating to the personnel, does not apply to subcontractors being included in more than one Bid.
16. Bid Validity Period	<p>16.1 Bids shall remain valid for the period specified in the BDS, commencing on the Deadline for Submission of Bids. A Bid valid for a shorter period may be rejected by PAF-IAST and rendered non-responsive.</p> <p>16.2 During the Bid validity period, the Bidder shall maintain its original Bid without any change, including the availability of the Key Personnel.</p>
17. Extension of Bid Validity Period	<p>17.1 In exceptional circumstances, prior to the expiration of the Bid validity period, PAF-IAST may request Bidders to extend the period of validity of their Bids. The request and the responses shall be made in writing and shall be considered integral to the Bid.</p> <p>17.2 If the Bidder agrees to extend the validity of its Bid, it shall be done without any change to the original Bid.</p> <p>17.3 The Bidder has the right to refuse to extend the validity of its Bid, in which case, the Bid shall not be further evaluated.</p>
18. Clarification on ITB (from the Bidders)	<p>18.1 Bidders may request clarifications on any of the ITB documents no later than the date indicated in the BDS. Any request for clarification must be sent in writing in the manner indicated in the BDS. If inquiries are sent other than specified channel, even if they are sent to a PAF-IAST staff member, PAF-IAST shall have no obligation to respond or confirm that the query was officially received.</p>

	<p>18.2 PAF-IAST will provide the responses to clarifications through the method specified in the BDS.</p> <p>18.3 PAF-IAST shall endeavor to provide responses to clarifications in an expeditious manner, but any delay in such response shall not cause an obligation on the part of PAF-IAST to extend the submission date of the Bids, unless PAF-IAST deems that such an extension is justified and necessary.</p>
19. Amendment in ITB	<p>19.1 At any time prior to the deadline of Bid submission, PAF-IAST may for any reason, such as in response to a clarification requested by a Bidder, modify the ITB in the form of an amendment to the ITB. Amendments will be made available to all prospective bidders.</p> <p>19.2 If the amendment is substantial, PAF-IAST may extend the Deadline for submission of Bid to give the Bidders reasonable time to incorporate the amendment into their Bids.</p>
20. Alternative Bids	<p>20.1 Unless otherwise specified in the BDS, alternative Bids shall not be considered. If submission of alternative Bid is allowed by BDS, a Bidder may submit an alternative Bid, but only if it also submits a Bid conforming to the ITB requirements. Where the conditions for its acceptance are met, or justifications are clearly established, PAF-IAST reserves the right to award a contract based on an alternative Bid.</p> <p>20.2 If multiple/ alternative bids are being submitted, they must be clearly marked as "Main Bid" and "Alternative Bid"</p>
21. Pre-Bid Conference	<p>21.1 When appropriate, a pre-bid conference may be conducted at the date, time and location specified in the BDS. All Bidders are encouraged to attend. Nonattendance, however, shall not result in disqualification of an interested Bidder. Minutes of the Bidder's conference will be disseminated on the procurement website and/ or shared by email as specified in the BDS. No verbal statement made during the conference shall modify the terms and conditions of the ITB, unless specifically incorporated in the Minutes of the Bidder's Conference or issued/ posted as an amendment to ITB.</p>

C. SUBMISSION AND OPENING OF BIDS

22. Bid Proposal Submission	<p>22.1 The Bidder shall submit a duly signed and numbered all pages of the complete Bid in an Envelope sealed and marked as per ITB 22.6, and in accordance with PPRA Rule 36(b).</p> <p>22.2 The Outer Envelope should contain Two (02) separate sealed envelopes, one of which comprising the Forms (A – F) and supporting documents in accordance with requirements in the BDS, shall be marked as "Technical Proposal". Whereas, the other envelope containing the Form G: Price Schedule Form shall be marked as "Financial Proposal".</p> <p>22.3 The Bid Security as referred in BDS must be placed in the "Financial Proposal" but in duly sealed envelope and marked as "Bid Security". However, an Affidavit stating that the Bid Security (without indicating the amount) has been placed in the Financial Proposal, should be enclosed in "Technical Proposal". Bid Security envelope will be opened with financial proposal of Technically qualified bidders.</p> <p>22.4 Bid can be delivered either personally, or by courier as specified in the BDS.</p> <p>22.5</p>
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	<p>The Bid shall be signed by the Bidder or person(s) duly authorized to commit the Bidder. The authorization shall be communicated through a document evidencing such authorization issued by the legal representative of the bidding entity, or a Power of Attorney, accompanying the Bid. There should not be errors and/ or over-writings. Corrections (if any) should be made clearly and initialed with dates.</p>
	<p>22.6 Bidders must be aware that the mere act of submission of a Bid, in and of itself, implies that the Bidder fully accepts the General Contract Terms and Conditions.</p> <p>22.7 Hard copy submission by courier or hand delivery allowed or specified in the BDS shall be governed as follows:</p> <p>a) The signed Bid shall be marked "Original", and its copies marked "Copy" as appropriate. The number of copies is indicated in the BDS. All copies shall be made from the signed original only. If there are discrepancies between the original and the copies, the original shall prevail.</p> <p>(b) The Bid Proposals must be sealed and submitted in an envelope, which shall:</p> <p>i. Bear the name of the Bidder;</p> <p>ii. Be addressed to PAF - IAST as specified in the BDS; and</p> <p>iii. Bear a warning not to open before the time and date for Bid opening as specified in the BDS.</p> <p>If the envelope with the Bid is not sealed and marked as required, PAF-IAST shall assume no responsibility for the misplacement, loss, or premature opening of the Bid.</p>
23. Deadline for Submission of Bids and Late Bids	<p>23.1 Complete Bids must be received by PAF-IAST in the manner, and no later than the date and time, specified in the BDS. PAF-IAST shall only recognize the actual date and time that the bid was received by PAF-IAST.</p> <p>23.2 PAF-IAST shall not consider any Bid that is received after the deadline for the submission of Bids.</p>
24. Withdrawal, Substitution, and Modification of Bids	<p>24.1 A Bidder may withdraw, substitute or modify its Bid after it has been submitted at any time prior to the deadline for submission.</p> <p>24.2 A bidder may withdraw, substitute or modify its Bid by sending a written notice to PAF- IAST, duly signed by an authorized representative, including a Power of Attorney. The corresponding substitution or modification of the Bid, must accompany the respective written notice. All notices must be submitted in the same manner as specified for submission of Bids, by clearly marking them as "WITHDRAWAL" "SUBSTITUTION," or "MODIFICATION"</p> <p>24.3 Bids requested to be withdrawn shall be returned unopened to the Bidders, except if the bid is withdrawn after the bid has been opened.</p>
25. Bid Opening	<p>25.1 The Procurement Committee of PAF- IAST will open the Bid in the presence of Bidders' representative(s) who choose to attend.</p> <p>25.2 The Bidders' names, modifications, withdrawals, the condition of the envelope labels/ seals, the number of folders/ files and all other such other details as PAFIAST may consider appropriate, will be announced at the opening. No Bid shall be rejected at the opening stage, except for late submissions, in which case, the Bid shall be returned unopened to the Bidders.</p> <p>25.3 In case of public holiday on bid opening day, bids will be opened on next working day.</p>

D. EVALUATION OF BIDS

26. Confidentiality	<p>26.1 Information relating to the examination, evaluation, and comparison of Bids, and the recommendation of contract award, shall not be disclosed to Bidders, even after publication of the contract award.</p> <p>26.2 Any effort by a Bidder to influence PAF-IAST in the examination, evaluation and comparison of the Bids or contract award decisions may, at PAF-IAST's decision, result in the rejection of its Bid and may subsequently be subject to consequences.</p>
27. Preliminary Examination	<p>27.1 PAF-IAST shall examine the Bids to determine whether they are complete with respect to minimum documentary requirements, whether the documents have been properly signed, and whether the Bids are generally in order, among other indicators that may be used at this stage. PAF-IAST reserves the right to reject any Bid at this stage.</p>
28. Evaluation of Eligibility and Technical Qualification	<p>28.1 Eligibility and Technical Qualification of the Bidder will be evaluated against the Minimum Eligibility/ Qualification requirements specified in the Section 4: Evaluation Criteria.</p> <p>28.2 In general terms, Bidders that meet the following criteria may be considered qualified:</p> <ul style="list-style-type: none"> a) They are not included in the list of blacklisted or barred companies published on PPRA website, any federal or provincial government department; b) They have a good financial standing and have access to adequate financial resources to perform the contract and all existing commercial commitments, c) They have the necessary experience, technical expertise, production capacity, quality certifications, quality assurance procedures and other resources applicable to the supply of goods and/ or services required; d) They are able to comply fully with the General Terms and Conditions of Contract; e) They do not have a consistent history of court/ arbitral award decisions against the Bidder; and f) They have a record of timely and satisfactory performance with their clients.
29. Evaluation of Bid Proposals	<p>29.1 The evaluation team shall review and evaluate the Bids on the basis of their responsiveness to the Schedule of Requirements and Technical Specifications and other documentation provided, applying the procedure indicated in the BDS and other ITB documents. When necessary, and if stated in the BDS, PAF- IAST may invite technically responsive bidders for a presentation related to their Bids. The conditions for the presentation shall be provided in the bid document where required.</p>
30. Due diligence	<p>30.1 PAF- IAST reserves the right to undertake a due diligence exercise, aimed at determining to its satisfaction, the validity of the information provided by the Bidder. Such exercise shall be fully documented and may include, but need not be limited to, all or any combination of the following:</p> <ul style="list-style-type: none"> a) Verification of accuracy, correctness and authenticity of information provided by the Bidder; b) Validation of extent of compliance to the ITB requirements and evaluation criteria based on what has so far been found by the evaluation team; c) Inquiry and reference checking with Government entities with jurisdiction on the Bidder, or with previous clients, or any other entity that may have done business with the Bidder;

	<p>d) Inquiry and reference checking with previous clients on the performance on on-going or completed contracts, including physical inspections of previous works, as deemed necessary;</p> <p>e) Physical inspection of the Bidder's offices, branches or other places where business transpires, with or without notice to the Bidder;</p> <p>f) Other means that PAF-IAST may deem appropriate, at any stage within the selection process, prior to declaring the Bidder as Qualified.</p>
31. Clarification of Bids	<p>31.1 To assist in the examination, evaluation and comparison of Bids, PAF- IAST may, at its discretion, request any Bidder for a clarification of its Bid.</p> <p>31.2 PAF- IAST's request for clarification and the response shall be in writing and no change in the prices or substance of the Bid shall be sought, offered, or permitted, except to provide clarification, and confirm the correction of any arithmetic errors discovered by PAF-IAST in the evaluation of the Bids in accordance with the ITB.</p> <p>31.3 Any unsolicited clarification submitted by a Bidder in respect to its Bid, which is not a response to a request by PAF-IAST, may not be considered during the review and evaluation of the Bids.</p>
32. Responsiveness of Bid	<p>32.1 PAF-IAST's determination of a Bid's responsiveness will be based on the contents of the bid itself. A substantially responsive Bid is one that conforms to all the terms, conditions, specifications and other requirements of the ITB without material deviation, reservation, or omission.</p> <p>32.2 If a bid is not substantially responsive, it may be rejected by PAF-IAST and may not subsequently be made responsive by the Bidder by correction of the material deviation, reservation, or omission.</p>
33. Right to Accept, Reject, Any or All Bids	<p>33.1 PAF-IAST reserves the right to accept or reject any proposal in response to the ITB, to render any or all of the proposals as non-responsive, and to reject all Proposals in response to the ITB at any time prior to award of contract, while assigning the reason(s) thereof.</p> <p>33.2 PAF- IAST shall not be obliged to award the contract to the lowest priced offer.</p>
34. Nonconformities, Repairable Errors and Omissions	<p>34.1 Provided that a Bid is substantially responsive, PAF-IAST may waive any nonconformities or omissions in the Bid that, in the opinion of PAF-IAST, do not constitute a material deviation.</p> <p>34.2 PAF-IAST may request the Bidder to submit the necessary information or documentation, within a reasonable period, to rectify nonmaterial nonconformities or omissions in the Bid related to documentation requirements. Such omission shall not be related to any aspect of the price. Failure of the Bidder to comply with the request may result in the rejection of its Bid.</p>
	<p>34.3 For the Price Schedule that are submitted, PAF-IAST shall check and correct arithmetical errors as follows:</p> <p>a) if there is a discrepancy between the unit price and the line item total that is obtained by multiplying the unit price by the quantity, the unit price shall prevail and the line item total shall be corrected, unless in the opinion of PAF-IAST there is an obvious misplacement of the decimal point in the unit</p>

	<p>price; in which case, the line item total as quoted shall govern and the unit price shall be corrected;</p> <p>b) if there is an error in a total corresponding to the addition or subtraction of subtotals, the subtotals shall prevail and the total shall be corrected; and</p> <p>c) if there is a discrepancy between words and figures, the amount in words shall prevail, unless the amount expressed in words is related to an arithmetic error, in which case the amount in figures shall prevail.</p> <p>34.4 If the Bidder does not accept the correction of errors made by PAF- IAST, its Bid shall be rejected.</p>
35. Bidder Grievance	35.1 PAF- IAST's grievance readdress procedure provides an opportunity for appeal to those persons or firms not awarded a contract through a competitive procurement process. In the event that a Bidder believes that it was not treated fairly, the Bidder may lodge a complaint to the PAF-IAST's Grievance Readdress Committee.
E. AWARD OF CONTRACT	
36. Evaluation	<p>36.1 PAF-IAST will conduct the evaluation solely on the basis of response to this tender received from the firms.</p> <p>36.2 Evaluation shall be undertaken in the following steps:</p> <ol style="list-style-type: none"> Preliminary Examination including Technical Specifications and other compliances Arithmetical check and ranking of bidders who passed preliminary examination by price. Evaluation of prices <p>36.3 Price comparison shall be based on the landed price, including transportation, insurance and the total cost of ownership (including spare parts, consumption, installation, commissioning, training, special packaging, etc., where applicable)</p>
37. Integrity Pact	37.1 Bidders will also be required to submit a signed Integrity Pact on a stamp paper of appropriate value as part of their response. The text of Integrity Pact is available at Annex – I.
38. Award Criteria	<p>38.1 Prior to expiration of the period of Proposal validity, PAF-IAST shall award the contract to the Bidder that is found to be responsive to the requirements of the Technical Specifications and has offered the lowest price.</p> <p>38.2 PAF-IAST shall not be obliged to award the contract to the lowest priced offer, if the response is found deficient to the Technical Specifications and other compliances.</p> <p>38.3 In case of tie in Financial Bid Value, the Contract will be awarded to the bidder having more closest match to the Technical Specifications.</p>
39. Contract Signing	39.1 After the approval of any Work Award, a Contract Agreement on the stamp paper of appropriate value, shall be executed by PAF-IAST with Selected Bidder (i.e. Contractor) within 15 days from the date of issuance of Lol (Letter of Intent)/ Work Order.

	39.2 Failure to signing of Contract Agreement by the selected Bidder Firm with PAF-IAST within the stipulated time may constitute sufficient grounds for the annulment of the award, and forfeiture of the Bid Security, if any, and on which event, PAF-IAST may award the Contract to the Second highest rated or call for new Proposals.
40. Right to Vary quantity at the Time of Award	40.1 At the time of award of Contract, PAF-IAST reserves the right to vary the quantity of goods and/ or services, without any change in the unit price or other terms and conditions.
41. Sample draft Contract	41.1 A sample draft Contract to be signed, containing applicable General Terms and Conditions can be found at Annex – II.
42. Performance Security	42.1 A performance security, if required in the BDS, shall be provided in the amount specified in BDS, well prior to the Contract signing by both parties. Where a performance security is required, the receipt of the performance security by PAF-IAST shall be a condition for rendering the contract effective.
43. Bank Guarantee for Advanced Payment	43.1 No Payment will be released in advance.
44. Liquidated Damages	<p>44.1 PAF-IAST shall apply Liquidated Damages for the damages and/ or risks caused to PAF-IAST resulting from the Contractor's delays or breach of its obligations as per Contract.</p> <ul style="list-style-type: none"> a) In case of delay, the Procurement Committee, PAF-IAST reserves the right to impose a penalty not exceeding 10% of the total amount of the Contract Value at the rate as referred in the Sample Contract at Annexure – II. b) If the Contractor fails to complete work as per PAF-IAST requirement, the Rector, PAF-IAST reserves the right to reject it altogether or impose a penalty not exceeding 50% of the total amount of the Contract. c) If the Contractor fails to provide supplies/ services as per PAF-IAST requirements, PAF-IAST may forfeit his earnest money as well as Performance Security, and the work will be done at the risk and cost of Contractor. d) In case of any dispute, matter will be referred to Rector, PAF-IAST whose decision will be binding on both the parties.
45. Force Majeure	45.1 "Force Majeure" means an event which is beyond the reasonable control of a party and which makes a party's performance of its obligations under the Purchase Order/ Work Order/ Contract impossible or so impractical as to be considered impossible under the circumstances, and includes, but is not limited to, War, Riots, Storm, Flood or other industrial actions (except where such strikes, lockouts or other industrial issues are within the power of the party invoking Force Majeure), confiscation or any other action by Government agencies. In all disputes between the parties as to matters arising pursuant to this Purchase Order/ Work Order/ Contract, the dispute will be referred to Project Director, SPCAI whose decision will be final.
46. Delivery of Goods	46.1 Contractor will be required to deliver the goods as per the Delivery Schedule referred in BDS without claiming any additional cost to the PAF-IAST at the designated site(s) and in quantities as referred in the Contract.

47. Payment Provisions	<p>47.1 Payment may be made through LC (Letter of Credit) which will be Open by PAF-IAST within 30 days after signing the Contract. However, Payment will be made only upon PAF-IAST's acceptance of the goods and/ or services performed. The terms of payment shall be within thirty (30) days, after receipt of invoice, and certification of acceptance of goods and/ or services issued by the proper authority in PAF: IAST. Payment will be affected by bank transfer in the currency of the contract.</p> <p>47.2 The Contractor shall provide all necessary supporting documents along with GST invoice, delivery challan and any other relevant documents as required by the PAF- IAST.</p>
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Section 3. Bid Data Sheet

The following data for the goods and/ or services to be procured shall complement, supplement, or amend the provisions in the Invitation to Bid. In the case of a conflict between the Instructions to Bidders, the Bid Data Sheet, and other annexes or references attached to the Bid Data Sheet, the provisions in the Bid Data Sheet shall prevail.

BDS No.	Ref. to Section.2	Data	Specific Instructions / Requirements
1.		Background of the Project	Pak-Austria Fachhochschule: Institute of Applied Sciences and Technology (PAF: IAST) is novel in its content and holistic in approach. The project concept is based on the slogan of “Skilling Pakistan” to create a high-quality technical education infrastructure. This unique educational institution in Pakistan will closely collaborate with several institutions in Austria and China and award multiple foreign degrees. This is a historic and visionary initiative as it is probably the first time that an institution will be established in Pakistan with many foreign universities giving degrees to students who study in it.
2.		Objective	The main objective of this Tender is to equip the PAF-IAST with necessary and advanced level of laboratory facilities, providing enabling environment to the students and faculty to perform their academic and research work in a conducive and productive environment and deliver beyond the expectations.
3.		Scope of Work	<p>Supply of Laboratory Equipment</p> <p>The required items in various Lots as referred in Section – 5 have been sought by Sino-Pak Center for Artificial Intelligence (SPCAI) from a reputed Firms/ Companies. The supplier is expected to supply high quality products meeting the specification as stipulated in this ITB, which conforms to the international quality standards. The time specified for delivery, Installation and Commissioning in the tender form shall be deemed to be the essence of the contract and the Successful Bidder shall arrange within the specified period.</p> <p>Post-Delivery Warranty and Support Services</p> <p>It is required that Manufacturer’s Warranty and Post-delivery Bidder’s Support Services for at least One (01) year from the date of commissioning at PAF-IAST be provided by the Supplier within the quoted cost of items.</p> <p>Moreover, additional Warranty and Support Services for next two (02) years should be quoted separately by the Bidder on annual payment basis. However, it will be at sole discretion of PAF-IAST to avail additional Warranty and Support Services in subsequent year(s) or otherwise.</p>
4.	7	Language of the Bid	English
5.	22, 23, 27	Submitting Bids for Parts or subparts of the Schedule of Requirements (partial bids)	The Purchase Committee shall consider the Bids Lot-wise (i.e. package against each of the Lots) as referred in Section – 5. Any item not quoted in the respective Lot shall have reasonable grounds to reject the Bid for that Lot.

6.	20	Alternative Bids	Not Allowed.
7.	21	Pre-Bid conference	Thursday the 2 nd December, 2021 at 10 am at Conference Room, PAF-IAST and Online as well. Please email to info@spcai.paf-iaست.edu.pk to receive link to join the session Online.
8.	16	Bid Validity Period	90 days
9.	13	Bid Security/ Earnest Money (Refundable)	<p><u>Required in the amount of:</u> 2% of the Bid Value amount (including Extended Warranty) quoted in DDP (in PKR) for each Lot (separately) against which the Bidder is participating. In case of options, earnest money shall be based on the maximum quoted price of the same items in the Lot.</p> <p><u>Acceptable Forms of Bid Security:</u> Denominated in Pak Rupees duly issued by a Pakistani Bank or branch of a Foreign Bank, in the form of CDR in favor of the Project Director SPCAI, PAF-IAST</p>
10.	42	Liquidated Damages	<p>Will be imposed as follows:</p> <p>Percentage of contract price per day of delay: as referred in Draft Contract Sample in Annexure – II.</p>
11.	40	Performance Security	Within one week of issuance of Lol/ Purchase Order and well prior to the signing of Contract, as 10% of the Contract value for the duration of Warranty period referred in RFP.
12.	12	Currency of Bid	Both Pakistani Rupees (PKR) for DDP, and US Dollars (USD) for CPT
13.	31	Deadline for submitting requests for clarifications/ questions	5 days before the submission deadline
14.	31	Contact Details for submitting clarifications/ questions	<p>Focal Person in SPCAI :</p> <p>Dr. Sohail Khan sohail.khan@spcai.paf-iaست.edu.pk</p> <p>Mr. Maaz Jamil Khan maaz.khan@paf-iaست.edu.pk</p>
15.	18, 19, and 21	Manner of Disseminating Supplemental Information to the ITB and responses/ clarifications to queries	<p>Direct communication to prospective Bidders by email and/ or Posting on the PAF: IAST website:</p> <p>maaz.khan@paf-iaست.edu.pk ali.bukhari@paf-iaست.edu.pk</p>

16.	23	Deadline for Submission	Thursday the December 9, 2021 on or before 12:00 noon (PST)											
17.	22	Number of Set(s) of Bid	Technical Proposal(s) <ul style="list-style-type: none">- One (01) Original- One (01) Copy- Soft copy of Technical Proposal in a USB Flash Drive Financial Proposal(s) <ul style="list-style-type: none">- One (01) Original <i>Note: Bidders are required to prepare and submit the Proposal(s) against the Lot(s) separately in separate envelopes, in which they intend to participate.</i>											
18.	22	Allowable Manner of Submitting Bids	<input checked="" type="checkbox"/> Courier/ Hand Delivery											
19.	22	Bid Submission Address	<input checked="" type="checkbox"/> By Courier / Hand Delivery: Convener Procurement Committee SPCAI, PAF- IAST, Mang, Haripur											
20.	22	Electronic submission (email) requirements	Not Allowed											
21.	25	Date, time and venue for the opening of bid	Date and Time: Thursday the December 9, 2021 at 12:30 PM Venue: Conference Room, PAF-IAST, Mang, Haripur											
22.	27, 36	Evaluation Method	Eligible and qualified bids meeting the PAF- IAST requirements and technically responsive as stipulated in this ITB											
23.		Evaluation Method for the Award of Contract	Lowest priced technically responsive											
24.		Expected date for commencement of Contract	December 2021											
25.		Maximum expected duration of Contract	36 months											
26.	35	PAF: IAST will award the contract to:	One Bidder Only against each Lot											
27.	39	Type and Contract Terms and Conditions that will apply	PAF-IAST General Terms and Conditions for Contracts for Goods and/ or Services as per Sample at Annex – II.											
28.	46	Delivery, Installation and Testing/ Training	<table><tr><td></td><td>Delivery</td><td>Installation</td><td>Testing/ Training</td></tr><tr><td>LOT # 1-5</td><td>14-16 weeks</td><td>2 weeks</td><td>2 week</td></tr></table>					Delivery	Installation	Testing/ Training	LOT # 1-5	14-16 weeks	2 weeks	2 week
	Delivery	Installation	Testing/ Training											
LOT # 1-5	14-16 weeks	2 weeks	2 week											

Section 4. Evaluation Criteria

Preliminary Examination Criteria

Bids will be examined to determine whether they are complete and submitted in accordance with ITB requirements as per below criteria on a Yes/ No basis:

- Appropriate signatures
- Power of Attorney
- Minimum Bid documents provided
- Bid Validity
- Bid Security submitted as per ITB requirements with compliant validity period

Minimum Eligibility Criteria

Eligibility will be evaluated on a Pass/ Fail basis. If the Bid is submitted as a Joint Venture, there should be no more than two (02) companies in the Joint Venture and each company should meet the minimum criteria, unless otherwise specified.

ELIGIBILITY			
S. #	Subject	Criteria	Reference Returnable Form(s)
1.	Bidder's Status	Participating as <input type="checkbox"/> Individual Company <input type="checkbox"/> JV/ Consortium	Form B: Joint Venture/ Consortium/ Association Information Form
2.	Legal Status	Bidder is a legally registered entity in Pakistan. Bidder is/ are also registered with FBR for Income Tax and Sales Tax	Form C: Bidder Information Form
3.	Location of Offices	Bidder (Lead Bidder) has either declared office(s) in Islamabad/ Rawalpindi/ Peshawar or in Haripur. Alternately, if the Contract is awarded, the Bidder may be asked to establish office in either of these cities.	Form C: Bidder Information Form
4.	Principal's Authorization	Bidder or at least one member of JV/ Consortium/ Association must be Authorized Partner/ Reseller/ Dealer for the supply and services of quoted goods/ services.	Form C: Bidder Information Form
5.	Company in Operation	Bidder (Lead Bidder) is in operation for at least Five (05) years.	Form C: Bidder Information Form
6.	Financial Strength	Average annual turnover over last 3 years no less than Rs. 10 million <i>(For JV/ Consortium/ Association, all Parties cumulatively should meet requirement).</i>	Form C: Bidder Information Form
7.	Relevant Experience	Minimum No. of Projects of similar nature, value, and complexity in last 3 years Two (02) projects <i>(For JV/ Consortium/ Association, all Parties cumulatively should meet requirement).</i>	Form C: Bidder Information Form

8.	Eligibility	Bidder(s) is not suspended, nor debarred, nor otherwise identified as ineligible by any Government/ Semi-government/ Autonomous organization in Pakistan, in accordance with ITB clause 3. Non-Blacklisting certificate will be required.	Form A: Bid Submission Form
9.	Bankruptcy	Bidder(s) has not declared bankruptcy, is not involved in bankruptcy or receivership proceedings, and there is no judgment or pending legal action against the vendor that could impair its operations in the foreseeable future.	Form A: Bid Submission Form

	QUALIFICATION				
S. #	Attribute	Description	Max. Score	Criteria	Returnable Form(s)
	Section – I: General Corporate Profile		25		
1.	Bidder’s Footprints	Number of offices/ services centers across the country	5	4+ offices fully operational for last five (05) year	Form C: Bidder Information Form
			3	3 – 4 offices fully operational for last five (05) year	
			1	< 3 offices fully operational for last five (05) year	
2.	Bidder’s Human Resource Strength	Number of full-time employees (documentary proof required)	8	40+ employees with at least 20% Technical staff with at least 10% having technical certification	Form C: Bidder Information Form
			6	25 – 39 employees with at least 20% Technical staff at least 10% having technical certification	
			4	9 – 24 employees with at least 20% Technical staff at least 10% having technical certification	
			2	<8 employees with at least 20% Technical staff at least 10% having technical certification	
3.	Financial Standing	Annual Turnover averaged over last 3 years	7	2+ x Financial Strength	Form D: Qualification Form
			4	2 x Financial Strength	
			2	1.5 x Financial Strength	
4.	Annual Tax Paid	Annual Tax Paid averaged over last 3 years	5	Rs. 2+ million or more	Form D: Qualification Form
			3	Rs. 1.0 – 2.0 million	
			2	Rs. 0.5 – 1.0 million	
	Section – II: Business Profile		30		
5.	Relevant Experience	Project(s) of similar nature, value and complexity completed.	7	Min. No. of Projects + 5	Form D: Qualification Form
			5	Min. No. of Projects + 3	
			3	Min. No. of Projects + 2	

6.	Public Sector Experience	Project(s) delivered to government organizations	9	5 Projects worth \$0.5 million or more each	Form D: Qualification Form
			7	3 Projects worth \$0.25-0.49 million each	
			5	2 Projects worth \$0.05-0.24 million each	
7.	Education Sector Experience	Project(s) completed at education institutions.	9	2+ Projects	Form D: Qualification Form
			7	2 Projects	
			5	1 Project	
8.	Experience in KP	Project(s) completed in KP	5	Project worth Rs 5 million in KP	Form D: Qualification Form
			3	Project worth Rs 2.5 million in KP	
Section – III: Manufacturer’s/ Product’s Strengths			10		
9.	Manufacturer’s Global Presence	Countries having supplied the same Quoted items	5	No. of countries identified by Bid in consideration/ Max. No. of countries identified in all Bids * 10	Form E: Project Proposal Form
10.	Manufacturer’s Products Portfolio	Various Products produced by the manufacturer beyond quoted items	5	No. of relevant Products mentioned by Bid in consideration/ Max. No. of Products referred in all Bids * 10	Form E: Project Proposal Form
Section – IV: Registration & Certifications			10		
11.	ISO 9001 Certified or equal if apply	Bidder or the Lead Bidder in case of JV should be Certified	5	Copy of Valid Certificate	Form E: Project Proposal Form
12.	Certification specific to quoted Products/ Solution	Bidder or any of the JV Partners or Principal should possess them	5	Copy of Valid Certificate(s) of the quoted Product(s)	Form E: Project Proposal Form
Section – V: Presentation on Project Proposal			25		
13.	Project Management Approach	Overall approach towards planning and implementing the project.	8	To be assigned by the Technical Committee	Form E: Project Proposal Form
14.	Post-Commissioning Services	Overall approach towards after-sale support and services.	7	To be assigned by the Technical Committee	Form E: Project Proposal Form
15.	Distinguishing Features	Distinguishing features of the quoted Product and/ or overall project proposed.	10	To be assigned by the Technical Committee	Form E: Project Proposal Form
Grand Total			100		

	Technical Evaluation	Bids shall be evaluated on both Eligibility and Technical Qualification Criteria. Bidders meeting the Eligibility Criteria and able to secure 60 percent in Technical qualification shall be declared as Technically Qualified Bidders for the next step, i.e. Opening of Financial Bid.
	Financial Evaluation	<p>Detailed analysis of the price schedule based on requirements listed in Section 5 and quoted for by the bidders in Form F.</p> <p>Price comparison shall be based on the landed price, including transportation, insurance, duties, taxes and the total cost of ownership (including spare parts, consumption, installation, commissioning, training, special packaging, etc., where applicable)</p> <p>Comparison with budget/ internal estimates. Tender will be awarded on least-cost basis.</p>

Section 5a: Technical Specifications of the Required Goods

Sr. No	Lot No. 1: Computer Vision Laboratory	
1	NVIDIA Jetson Nano Developer Kit (V3) Quantity: 30	
	GPU	128-core NVIDIA Maxwell™
	CPU	Quad-core ARM A57 @ 1.43 GHz
	Memory	4GB 64-bit LPDDR4 25.6GB/s
	Storage	microSD (Card not included)
	Video Encoder	4Kp30 4x 1080p30 9x 720p30 (H.264/H.265)
	Video Decoder	4Kp60 2x 4Kp30 8x 1080p30 18x 720p30 (H.264/H.265)
	Connectivity	Gigabit Ethernet, M.2 Key E
	Camera	2x MIPI CSI-2 connectors
	Display	HDMI and DP
	USB	4x USB 3.0, USB 2.0 Micro-B
	Others	GPIO, I2C, I2S, SPI, UART
		12-pin header (Power and related signals, UART)
		Case
		Power Cord
2	Jetson Xavier NX Developer Kit Quantity: 4	
	GPU	NVIDIA Volta architecture with 384 NVIDIA CUDA® cores and 48 Tensor cores
	CPU	6-core NVIDIA Carmel ARM®v8.2 64-bit CPU 6 MB L2 + 4 MB L3
	DL Accelerator	2x NVDLA Engines
	Vision Accelerator	7-Way VLIW Vision Processor
	Memory	8 GB 128-bit LPDDR4x @ 51.2GB/s
	Storage	microSD (not included)
	Video Encode	2x 4K @ 30 6x 1080p @ 60 14x 1080p @ 30 (H.265/H.264)
	Video Decode	2x 4K @ 60 4x 4K @ 30 12x 1080p @ 60 32x 1080p @ 30 (H.265) 2x 4K @ 30 6x 1080p @ 60 16x 1080p @ 30 (H.264)
	Camera	2x MIPI CSI-2 DPHY lanes
	Connectivity	Gigabit Ethernet, M.2 Key E (WiFi/BT included), M.2 Key M (NVMe)
	Display	HDMI and display port
	USB	4x USB 3.1, USB 2.0 Micro-B
	Others	GPIO, I2C, I2S, SPI, UART
3	Jetson AGX Xavier Developer Kit Quantity: 4	
	GPU	512-core Volta GPU with Tensor Cores
	CPU	8-core ARM v8.2 64-bit CPU, 8MB L2 + 4MB L3
	Deployment	Module (Jetson AGX Xavier)
	Memory	32GB 256-Bit LPDDR4x 137GB/s
	Storage	32GB eMMC 5.1
	Encoder/Decoder	(2x) 4Kp60 HEVC/(2x) 4Kp60 12-Bit Support
	DL Accelerator	(2x) NVDLA Engines
	Vision Accelerator	7-way VLIW Vision Processor

	Connectivity	x8 PCIe Gen4/x8 SLVS-EC, Gigabit Ethernet, 2x USB 3.1, (16x) CSI-2 Lanes, NVMe, PCIe x1 + USB 2.0 + UART (for Wi-Fi/LTE) / I2S / PCM, UART + SPI + CAN + I2C + I2S + DMIC + GPIOs, SATA Through PCIe x1 Bridge (PD + Data for 2.5-inch SATA) + USB 3.0, HDMI 2.0, SD/UFS card socket
4	Google Coral Dev Board Kit Quantity: 6	
	CPU	NXP i.MX 8M SoC (quad Cortex-A53, Cortex-M4F)
	GPU	Integrated GC7000 Lite Graphics
	ML accelerator	Google Edge TPU coprocessor:
		4 TOPS (int8); 2 TOPS per watt
	RAM	1 GB LPDDR4
	Flash memory	8 GB eMMC, MicroSD slot
	Wireless	Wi-Fi 2x2 MIMO (802.11b/g/n/ac 2.4/5GHz) and Bluetooth 4.2
	USB	Type-C OTG; Type-C power; Type-A 3.0 host; Micro-B serial console
	LAN	Gigabit Ethernet port
	Audio	3.5mm audio jack (CTIA compliant); Digital PDM microphone (x2); 2.54mm 4-pin terminal for stereo speakers
	Video	HDMI 2.0a (full size); 39-pin FFC connector for MIPI-DSI display (4-lane); 24-pin FFC connector for MIPI-CSI2 camera (4-lane)
	GPIO	3.3V power rail; 40 - 255 ohms programmable impedance; ~82 mA max current
	Power	5V DC (USB Type-C)
	Coral Camera	Sensor: 5-megapixel camera module that's compatible with the Coral Dev Board
		Omnivision Sensor, Autofocus, Auto exposure control
5	Intel Neural Compute Stick 2/latest (NCSM2485.DK) Quantity: 30	
	Product Collection	Intel® Neural Compute Sticks
	Supported Operating Systems Windows	10, 64-bit*, Ubuntu 16.04*, CentOS 7.4*
	Pre-Installed Operating system	OS Independent
	Processor Included	Intel® Movidius™ Myriad™ X Vision Processing Unit 4GB
	Processor Base Frequency	700 MHz
	Brand	Intel
	Processor Count	1
6	SparkFun JetBot AI Kit v3.0 (Without Jetson Nano) or Equivalent Quantity: 25	
	I²C communication	SparkFun Qwiic ecosystem or equivalent
	Compact Form Factor	Yes (to optimize existing neural net)
	Camera	136° FOV
	microSD card	64 GB, Pre-flashed microSD card
	WiFi & Bluetooth Adapter	Edimax 2-in-1 WiFi and Bluetooth 4.0 Adapter or equivalent

	Example Code	Basic Motion, Teleoperation, Collision avoidance, & Object Following	
7	SparkFun Inventor's Kit Lab Pack - v4.1 or Equivalent Quantity: 4 packs		
	10 x SparkFun Inventor's Kit - v4.1	SparkFun RedBoard Qwiic Arduino and Breadboard Holder SparkFun Inventor's Kit Guidebook White Solderless Breadboard Carrying Case SparkFun Mini Screwdriver 16x2 White-on-Black LCD (with headers) SparkFun Motor Driver (with Headers) Pair of Rubber Wheels Pair of Hobby Gearmotors Small Servo Ultrasonic Distance Sensor TMP36 Temp Sensor 6' USB micro-B Cable Jumper Wires Photocell Tricolor LED Red, Blue, Yellow and Green LEDs Red, Blue, Yellow and Green Tactile Buttons 10K Trimpot Mini Power Switch Piezo Speaker AA Battery Holder 330 and 10K Resistors Binder Clip, Dual-Lock™ Fastener	
	10 x SparkFun Inventor's Kit Refill Pack	Includes: 1x Adjustable Parts Box 2x Mini Speaker 2x Temperature Sensor --- TMP36 2x Mini Photocell 2x Trimpot 10k 2x Mini Power Switch --- SPDT 2x Generic Servo (Sub-Micro Size) 2x LED --- RGB Diffused Common Cathode 1x Assorted LED 20-Pack (5 Red, 5 Blue, 5 Yellow, 5 Green) 2x Multicolor Button 4-Pack (1 Red, 1 Blue, 1 Yellow, 1 Green)	
	20x Alkaline Battery	Nominal Voltage	~1.5V
		Operating Temperature	[-20°C to 54°C]
Weight		≤ 70g	

Sr. No.	Lot No. 2: Smart City Laboratory		
1	Microsoft, Azure Kinect DK Developer Kit Quantity: 6		
	Sensors	Depth camera: 1MP Time-of-flight	
		RGB camera: 12MP CMOS sensor rolling shutter	
		IMU: 3D digital accelerometer and a 3D digital gyroscope	
		Microphone: 7-microphone circular array	
	Input/Output/Connectivity	USB-C data connector	
		Power through USB-C (USB-C to USB-C cable not included) or external PSU	
		Sync connectors to synchronize multiple units	
	Compatible OS	Windows 10 (not S mode) and Ubuntu 18.04 (preview)	
	Other	LSM6DSMU as Embedded Inertial Measurement Unit (IMU)	
USB-A to USB-C data cable			
USB-A to DC barrel-jack power cable			
Power supply			
2	OpenCV AI Kit: OAK—D Quantity: 25		
		OAK Color Camera	OAK-D Stereo Camera
	Shutter Type	Rolling Shutter	Sync Global Shutter
	Image Sensor	IMX378	OV9282
	Max Framerate	60fps	120fps
	H.265 Framerate	30fps	/
	Resolution	12MP (4056×3040 px/1.55um)	1MP (1280×800 px/3um)
	Field of View	81° DFoV – 68.8° HFoV	81° DFoV – 71.8° HFoV
	Lens Size	1/2.3 Inch	1/2.3 Inch
	Focus	8cm – ∞ (AutoFocus)	19.6cm – ∞ (FixedFocus)
	F-number	2	2.2
	3	IMX219-160IR Camera, or Equivalent Quantity: 30	
Brand		Waveshare or Equivalent	
Compatibility		Supports NVIDIA Jetson Nano Developer Kit, and Raspberry Pi Compute Module 3/3+, Supports night vision when works with infrared LEDs	
Resolution		8 Megapixels, 3280 × 2464or better	
Lens specifications		CMOS size: 1/4inch	
		Aperture (F): 2.35	
	Focal Length: 3.15mm		
	Angle of View (diagonal): 160 degree or better		
4	OpenMV Cam H7 Plus or Equivalent Quantity: 30		
	Processor	ARM® 32-bit	
		Cortex®-M7 CPU	
		w/ Double Precision FPU	
		480 MHz (1027 DMIPS) o	
	RAM Layout	64KB Stack or better	

		256KB .DATA/.BSS/Heap
		512KB or higher
	Supported Image Formats	Grayscale
		RGB565
	Maximum Supported Resolutions	Grayscale: 2952x1944 (5MP) or higher
		RGB565: 2952x1944 (5MP) or higher
		Grayscale JPEG: 2952x1944 (5MP) or higher
		RGB565 JPEG: 2952x1944 (5MP) or higher
	Lens Info	Focal Length: 2.8mm
		Aperture: F2.0
		Format: 1/3"
		HFOV = 70.8°, VFOV = 55.6°
		IR Cut Filter: 650nm
5	OpenMV WiFi Shield or Equivalent Quantity: 30	
	Data Transmission Speed	IEEE 802.11n (up to 48Mbps)
	Security	WEP/WPA/WPA2
	Power Consumption	Active - 100 mA @ 3.3V or less
	Operating Temperature	-40°C to 85°C
	Weight	≤ 7g
6	OpenMV LCD Shield or Equivalent Quantity: 30	
	Screen Type	1.8" TFT LCD or better
	Resolution	Horizontal: 128 pixels or better Vertical: 160 pixels or better
	Power Consumption	Active Backlight Off - 10mA @ 3.3V or less Active Backlight On - 40mA @ 3.3V or less
	Operating Temperature	-20°C to 70°C
	Weight	≤ 13g
7	Transphorm Inverter (DC to AC) Evaluation Platform Quantity: 5	
	Transphorm Inverter (DC to AC) Evaluation Platform	TDINV1000P100: 1.0 kW Inverter Evaluation Board (Latest Version) TDINV1000P100 single-phase inverter assembly + Texas Instruments F28035ISO control card + 9V power supply with adaptor
	High-voltage input	420 VDC
	Auxiliary supply	9 VCC
	Input Voltage	0 VDC – 420 VDC
	Output Voltage	VDC / $\sqrt{2}$ V RMS at 50/60Hz, up to 1000W
	PWM frequency	50kHz - 150kHz 2
8	Isolated Inverter Platform Quantity: 5	
	Isolated Inverter Platform	EV-MCS-ISOINVEP-Z Isolated Inverter (Enhanced Protection) Platform
	EV-MCS-ISOINVEP-Z power board	Input range: 24-800 Vdc Power rating: 2 KVA Must include: Control power supply Adapter board (for connection to EZkit)

	Power board supply	As per board input and power rating
	ADSP-CM408F EZ-KIT rev 0.2	Must include Segger J-Link Lite debugger
	USB to serial converter compatible with platform and PC	USB to serial converter to download executable demo code to the EZ-KIT.
	USB to serial converter compatible with platform and PC	A USB to serial converter to visualize data variables using the Graphical User Interface (GUI).
	Software	ADSP-CM40x SW Enablement Package version 2.0.0 Inverter demo program executable and linker map file
9	Programmable DC Electronic Load 300 W, Model: PEL-3031E Quantity: 5	
	Operating modes	CC, CV, CR, CP, CC+CV, CR+CV, CP+CV operating modes
	Power	300W
	Voltage	1 ~ 150V
	Current	0 ~ 6A (Low) and 0~60A (High)
	Minimum Operating Voltage (dc)	1V ~ 6A (Low) and 1V~60A (High)
	Programmability	Fully Programmable Normal Sequence/ Fast Sequence function (fastest 25 μ s/step)
	Protection	OCP, OVP, OPP, OTP, RVP, UVP
	Interface	USB, GPIB(Optional), Analog external control
	Function 1	Static function/ Dynamic mode (periodically switch between two sink conditions)
	Function 2	Soft Start function allows operator to determine the rise time of current sink
	Function 3	UVP function for battery discharge tests
	Function 4	Timer function for Cut Off Time & Count Time
	Function 5	Analog control terminals enable control from external voltage, external resistance and switch
	Function 6	Supports peripheral devices and trigger function (TRIG OUT/TRIG IN)
	Function 7	Remote Sense function compensates voltage drop from resistance of test leads
10	Equipment Name: ASR-3000 Series Programmable AC/DC Power Source Quantity: 1	
	Output Rating	AC (0 – 400 Vrms), DC (0 - \pm 570 V)
	Output Frequency	up to 999.9 Hz
	DC Output	100% of Rated Power
	Measurement Items	Vrms, Vavg, Vpeak, Irms, IpkH, Iavg, Ipeak, P, S, Q, PF, CF Voltage and Current Harmonic Analysis(THDv, THDi)
	Capability	Remote Sensing
	Alarms	OCP, OPP, OTP, AC Fail Detection and Fan Fail Alarm
	Waveform Function	Arbitrary Waveform Function
	Output Capacity	2kVA/ 3kVA/4kVA
	Sequence and Simulation Function	up to 10 sets
11	Equipment Name: Hanback Smart Farm Controller (IoT based soil or hydroponic cultivation platform capable of actual cultivation) Quantity: 15	
	XNode Auto (Software)	MicroPython 3 (built in node) Soda IDE RGB LED, Light, Humidity, Temperature Library & Example Button Switch, Limit Switch, LED, Relay, Step Motor, TextLCD Display, Soil Moisture, Library & Example

Specifications	Xtensa® Dual-Core 32-Bit LX6 Microprocessor(s), Up to 600 DMIPS RAM: 4MB Flash Memory: 8MB Interface: UART, SPI, I2C, I2S, ADC, PWM, GPIO Indicator: RGB LED
WIFI	802.11b/g/n Data Rate: 1Mbps to 72Mbps Transmit Power: Up to +16dBm Receiver Sensitivity: -93 to -71 dBm
BlueTooth	Bluetooth 4.2 BR/EDR BLE Range: 30M Data Rate: 1Mbps Sensitivity: -97dBm Output Power: 12dBm
LoRa	Frequency: 900MHz Range: 10km Data Rate: 300kbps Sensitivity: -148dBm Output Power: 20dBm
Light Sensor	Illuminance: 1 ~ 65535(lx) Interface: I2C
Temperature/Humidity Sensor	Humidity Resolution: 12bit (0.04%RH), 8bit (0.7%RH) Humidity Accuracy: +-3%RH Temperature Resolution: 14bit (0.01C), 12bit(0.04C) Temperature Accuracy: +-4°C Interface: I2C
XNode Auto Relay: 3ch	DC: 7A/28VDC AC: 7A/240VAC
Motor Driver	Dual Full-Bridge Driver(4A/46V)
Soil Moisture	Sensor Analog Output
Ventilation	Vinyl Curtain: Step Motor Driver FAN 2EA: Relay Control Light Control: RGB LED Strip Power: 12V/3A Adaptor (DC Jack)
Water Pump	Flow Rate: 3.5L/Minute 12V/3W(Relay Control) Mini Sprinkler 2EA
Indoor Sensor	Light Sensor Temperature/Humidity Sensor Interface: I2C
Carbon Dioxide(CO2)	Gas Sensor Measuring Range : 0 ~ 10000 ppm Accuracy : ±7% ±50ppm Response Time : 18 ~ 30 sec Interface: I2C
Water Level Sensor	Output Voltage: (Low(0V), High(5V)) Response Time: 500ms Sensitivity: 0 ~ 13mm Waterproof Performance: IP67
Display	Character LCD Format Size: 16x2 Interface: I2C

Sr. No.	Lot No. 3: Intelligent Field Robotics Laboratory
1	<p>Custom-Build Agile Multicopter Quantity: 4</p> <p>Base carbon fiber Multicopter frame, Pixhawk Autopilot, GPS CAN Module, 3-axis stabilizing gimbal for camera interface, carbon fiber propellers with appropriate dimensions, Electronic Speed Controller, Brushless DC motors for propellers, APKINA – 2284 Tripod Stand for Ground unit, 9-channel RF Transmitter with Receiver, Servo Cable, Battery, Charger, Micro USB PCB, Port Plugs, Telemetry Module, Telemetry Cables, RF cables and connectors, 12awg, 14awg, 16awg, 20awg, 26awg, silicon wires, 22.2V 6S 25C 5000mAh Battery or sufficient battery to meet the operational requirements for aerial unit, 3S 11.1V 3000mAh battery for ground unit. Following are operational specifications:</p> <ul style="list-style-type: none"> • Max Service Ceiling Above Sea Level: > 1000 m • Max Speed: 50 Km/h or better • Max Flight Time: 30 minutes or better • Flight radius: >= 2 KM • Absolute horizontal/vertical accuracy (with ground control points): Vertical: ± 0.5 m; Horizontal: ± 0.5 m • Remote controller software that can be installed on the tablet for navigation control and monitoring <p>With add-ons: Provision of on-board computer Jetson AGX Xavier Developer Kit, Camera Interface dev kit for Jetson AGX Xavier, Raspberry pi 4 board (8GB+), MB1220 XL-MaxSonar-EZ2 Rangefinders on each wing, Or equivalent or Similar/Better specifications</p>
2	<p>Custom-Build Carrier Multicopter Quantity: 2</p> <p>Base carbon fiber Multicopter frame, Pixhawk Autopilot, GPS CAN Module, 3-axis stabilizing gimbal for camera interface, carbon fiber propeller pair, Electronic Speed Controller, Brushless DC motors for propellers, APKINA – 2284 Tripod Stand for Ground units, 9-channel RF Transmitter with Receiver, Servo Cable, Battery, Charger, Micro USB PCB, Port Plugs, Telemetry Module, Telemetry Cables, RF cables and connectors, 12awg, 14awg, 16awg, 20awg, 26awg, silicon wires, 22.2V 6S 25C 8000mAh Battery or sufficient battery to meet the operational requirements for aerial unit, 3S 11.1V 5200mAh battery for ground unit. Following are operational specifications:</p> <ul style="list-style-type: none"> • Max Service Ceiling Above Sea Level: > 1000 m • Max Speed: 30 Km/h or better • Max Flight Time: 30 minutes or better • Flight radius: >= 2 KM • Absolute horizontal/vertical accuracy (with ground control points): Vertical: ± 0.5 m; Horizontal: ± 0.5 m • Remote controller software that can be installed on the tablet for navigation control and monitoring • Load carrying capability: >= 2 KG the bay is preferred to have a provision for connecting the spraying equipment, ground robot or related equipment <p>With add-ons: Provision of on-board computer Jetson AGX Xavier Developer Kit, Camera Interface dev kit for Jetson AGX Xavier, Provision of on-board Raspberry pi 4 board (8GB+), MB1220 XL-MaxSonar-EZ2 Rangefinders for all propellers, Or equivalent or Similar/Better specifications</p>
3	<p>RTK-GNSS Base station (Here+V2 or Equivalent or Better) Quantity: 1</p> <p>GNSS module: u-blox NEO-M8P-2 Ceramic antenna: CGGBP.25.4.A.02 Connector: USB, UART, SMA GNSS Signals Supported: GPS L1 C/A, GLONASS L10F, BeiDou B11 Working Voltage: 5V Working Temperature: -40°C to 85°C Time-To-First-Fix: GPS & GLONASS: <=26s (cold start), <=1s (hot start), <=2s (aided start)</p>

	GPS & BeiDou: <=28s (cold start), <=1s (hot start), <=3s (aided start) Sensitivity: Tracking, Navigation and Reacquisition: -160 dBm (GPS & GLONASS, BeiDou) Cold Start: -140 dBm (GPS & GLONASS, BeiDou) Hot Start: -157 dBm (GPS & GLONASS, BeiDou) Maximum navigation rate for RTK: 5 Hz (GPS & GLONASS, BeiDou) Antenna Supported:(Active and Passive Antenna) Horizontal position accuracy: RTK 0.025m+1ppm CEP	
4	Q10T 10x Time Optical Zoom EOS Camera gimbal auto tracking function gimbal for Multicopter Quantity: 4	
	Hardware Parameter	
	Working voltage	12V
	Input voltage	3S ~ 4S
	Output voltage	5V (connect with PWM)
	Dynamic current	320mA @ 12V
	Idle current	240mA @ 12V
	Power consumption	≤ 3.85W
	Working environment temp.	-20°C ~ +50°C
	Output	micro HDMI(HD output 1080P 60fps)/IP
	Local-storage	SD card (Up to 128G, class 10, FAT32 or ex FAT format)
	Control method	PWM / TTL / S.BUS / TCP
	Gimbal spec	
	Pitch/Tilt	±90°
	Roll	±85°
	Yaw/Pan	±300°/±360°(IP output)
	Vibration angle	Pitch/Roll: ±0.02°, Yaw : ±0.03°
	Camera spec	
	Imager Sensor	1/3inch CMOS
	Picture quality	Full HD 1080 (1920*1080)
	Effective pixel	2.13MP
	Lens optical zoom	10x, F=4.9~49mm
	Digital zoom	12x (360x with optical zoom)
	Min object distance	1.5M
	Horizontal viewing angle	Horizontal: 53.2°(Wide end) ~ 5.65°(Tele end)
		Vertical: 39.8°(wide end) ~ 4.2°(tele end)
		Focus: 66.6°(wide end) ~ 7.2°(tele end)
	Sync system	Progressive scanning
	S/N ratio	38dB
	Min illumination	Color 0.05lux@F1.6
	Exposure control	Auto, Manual, Priority mode(shutter priority & iris priority), Bright, EV compensation, Slow AE

Gain	Auto
White balance	Auto/Manual
Shutter speed	Auto
Backlight compensation	Backlight compensation/strong light inhibition
User presetting bit	20 sets
Image rotation	180°, Horizontal/Vertical mirror image
OSD	Yes
Camera Object Tracking	
Update rate of deviation pixel	50Hz
Output delay of deviation pixel	<10ms
Minimum object contrast	5%
SNR	4
Minimum object size	32*32 pixel
Maximum object size	128*128 pixel
Tracking speed	±48 ~ ±192 pixel/frame
Object memory time	100 frames (4s)
The mean square root values of pulse noise in the object position	< 0.5 pixel

5

Loco swarm bundle inclusive additional highlighted accessories

Quantity: 3

The bundle contains the LPS system configuration which supports TDoA where a virtually infinite amount of Crazyflies can be positioned simultaneously. It also contains 10 Crazyflies with the LPS decks for positioning.

Bundle content	
Name	Quantity
Loco Positioning Nodes	08
Loco Positioning Deck	10
Crazyflie 2.1 kit	10
Crazyradio PA	3
240mAh LiPo battery including 500mA USB charger	20
Accessory – LED-ring deck	10

Specification of each equipment in a bundle



Loco Positioning Nodes
<p>Features:</p> <ul style="list-style-type: none"> ▪ Supports Anchor and Sniffer mode, as well as a limited TWR Tag mode (no position estimation) ▪ Can be used as a standalone system with some Nodes acting as Anchors and one Node acting as a Tag reporting distances to the Anchors. ▪ Multiple powering options ▪ On board MCU
<p>Electrical Specification:</p> <ul style="list-style-type: none"> ▪ Based on the Decawave DWM1000 module ▪ Implements IEEE 802.15.4 UWB ▪ STM32F072 MCU (Cortex-M0, 48MHz, 16kb SRAM, 128kb flash)

	<ul style="list-style-type: none"> ▪ High precision pressure sensor (LPS25H) ▪ uUSB connector ▪ Full speed USB device interface ▪ Powered by USB, 6 mm barrel jack (5 - 12V) or screw terminal (5 - 12V) ▪ FTDI debug port (not populated) ▪ Serial connector compatible with ESP8266 module (not populated) ▪ Power consumption 180 mA max
	Ranging Specification: <ul style="list-style-type: none"> ▪ Ranging accuracy ± 10 cm according to DWM1000 spec. ▪ Maximum tested range 10 m ▪ Nr of anchors required: theoretical minimum of 4 for 3D positioning.
	Radio Specification: <ul style="list-style-type: none"> ▪ Operates at 3.2 - 7 GHz ▪ Channel bandwidth 500 MHz
	Compatibility <ul style="list-style-type: none"> ▪ Works with the Loco Positioning Deck
	Loco positioning deck
	Features: <ul style="list-style-type: none"> ▪ Measures distances to Loco Positioning Node Anchors ▪ 4 status LEDs
	Electrical specifications: <ul style="list-style-type: none"> ▪ Based on the Decawave DWM1000 module ▪ Implements IEEE 802.15.4 UWB ▪ 1-wire memory for automatic expansion deck detection
	Ranging specifications: <ul style="list-style-type: none"> ▪ Ranging accuracy ± 10 cm according to DWM1000 spec. See the wiki for measurements. ▪ Maximum tested range 10 m ▪ Ranging rate 500 Hz, shared over all anchors. Around 80Hz per anchor with 6 anchors
	Radio specifications Operates at 3.2 - 7 GHz Channel bandwidth 500 MHz
	Power consumption <ul style="list-style-type: none"> ▪ Max 150 mA, depends on operation mode and configuration ▪ Crazyflie 2.X flight time with deck 6 minutes
	Mechanical specifications <ul style="list-style-type: none"> ▪ Weight: 3.3 g ▪ Size (WxHxD): 28x35x4 mm ▪ Designed for mounting above or under the Crazyflie 2.X
	Crazyflie 2.1
	Features: <ul style="list-style-type: none"> ▪ Durable design ▪ Easy to assemble and no soldering required ▪ Supports expansion decks with automatic detection ▪ Supports flying from iOS and Android with Bluetooth LE, as well as from Windows/Mac OSX/Linux with the Crazyradio or Crazyradio PA ▪ Tested to further than 1 km radio range line-of-sight (LOS) with the Crazyradio PA ▪ Wireless firmware updates ▪ On-board charging via standard uUSB ▪ Dual-MCU architecture with dedicated radio/power management SoC for advanced applications ▪ Real-time logging, graphing and variable setting in addition to full use of expansion decks when using a Crazyradio or Crazyradio PA and a computer
	Mechanical specifications: <ul style="list-style-type: none"> ▪ Takeoff weight: 27g ▪ Size (WxHxD): 92x92x29mm (motor-to-motor and including motor mount feet)
	Radio specifications: <ul style="list-style-type: none"> ▪ 2.4GHz ISM band radio

	<ul style="list-style-type: none"> Increased range with 20 dBm radio amplifier, tested to > 1 km range LOS with Crazyradio PA (environmentally dependent) Bluetooth Low Energy support with iOS and Android clients available Dual antenna support with both on board chip antenna and U.FL connector
	<p>Microcontrollers:</p> <ul style="list-style-type: none"> STM32F405 main application MCU (Cortex-M4, 168MHz, 192kb SRAM, 1Mb flash) nRF51822 radio and power management MCU (Cortex-M0, 32Mhz, 16kb SRAM, 128kb flash) uUSB connector On-board LiPo charger with 100mA, 500mA and 980mA modes available Full speed USB device interface Partial USB OTG capability (USB OTG present but no 5V output) 8KB EEPROM
	<p>IMU</p> <ul style="list-style-type: none"> 3 axis accelerometer / gyroscope (BMI088) high precision pressure sensor (BMP388)
	<p>Flight specifications:</p> <ul style="list-style-type: none"> Flight time with stock battery: 7 minutes Charging time with stock battery: 40 minutes Max recommended payload weight: 15 g
	<p>Supported clients/controllers</p> <ul style="list-style-type: none"> Win/Linux/OSX python client <ul style="list-style-type: none"> The gamepads used by the Xbox 360 and the Playstation 3 are used as reference controllers Any gamepad/controller with at least 4 analog axes Android mobile device iOS mobile device
	<p>Expansion connectors:</p> <ul style="list-style-type: none"> VCC (3.0V, max 100mA) GND VCOM (unregulated VBAT or VUSB, max 1A) VUSB (both for input and output) I2C (400kHz) SPI 2 x UART 4 x GPIO/CS for SPI 1-wire bus for expansion identification 2 x GPIO connected to nRF51
	<p>Crazyradio PA 2.4 GHz USB dongle</p> <p>Crazyradio PA is a long range open USB radio dongle based on the nRF24LU1+ from Nordic Semiconductor. It features a 20dBm power amplifier, LNA and comes pre-programmed with Crazyflie compatible firmware. The power amplifier boosts the range, giving a range up to 1km (line of sight) together with the Crazyflie 2.X and up to 2km Crazyradio PA to Crazyradio PA (line of sight).</p>
	<p>Features:</p> <ul style="list-style-type: none"> Radio power amplifier giving 20dBm output power 1km range LOS with Crazyflie 2.X (best case scenario) 2x5 2.54mm header for prototyping (not mounted) Hardware support for PPM Same mechanical footprint as the first generation Crazyradio Open source firmware Firmware upgrade via USB Low latency
	<p>Specifications:</p> <ul style="list-style-type: none"> Based on nRF24LU1+ chip from Nordic Semiconductor <ul style="list-style-type: none"> 8051 MCU at up to 16MHz with 32Kb flash and 2Kb SRAM

	<ul style="list-style-type: none"> ○ 2.4GHz ISM band radio ○ USB device peripheral ○ 125 radio channels ○ 2Mbps, 1Mbps and 250Kps communication data-rate ○ Sends and receives data packets of up to 32 bytes payload ○ Automatically handles addresses and packet ack ○ Hardware SPI and UART ○ Compatible with Enhanced ShockBurst protocol from Nordic Semiconductor <p>Radio specification:</p> <ul style="list-style-type: none"> ▪ 20dBm output power (100mW) ▪ Low Noise Amplifier (LNA) ▪ RP-SMA connector ▪ Can be powered with up to 13V via expansion header ▪ 2x5 2.54mm expansion header with following signals (not mounted): ▪ Hardware support for PPM input <ul style="list-style-type: none"> ○ Up to 13V input power ○ GND ○ PPM ○ SPI/UART ▪ Standard USB-A connector <p>Mechanical specifications:</p> <ul style="list-style-type: none"> ▪ Weight: 6g ▪ Size (WxHxD): 58x16x6.5mm (including connectors)
	<p>250mAh LiPo battery including 500mA USB charger</p> <p>Features:</p> <ul style="list-style-type: none"> ▪ Operating Temperature: 0~45°C (Charging) / 0~60°C (Discharging) ▪ Connector: Molex 51005-2P (Pin 1 positive) <p>Electrical Specification:</p> <ul style="list-style-type: none"> ▪ Capacity: 250mAh ▪ Nominal voltage: 3.7 V (1 Cell) ▪ Max discharge: 15C ▪ Charge: 2C <p>Mechanical specifications</p> <ul style="list-style-type: none"> ▪ Weight: 7.1g ▪ Size (WxHxD): 20x7x30mm (not including cable) <p>LiPo battery charger:</p> <p>Features</p> <ul style="list-style-type: none"> ▪ 500mA single-cell Li-Po battery charger ▪ Charging indicator ▪ Connection points for chaining of multiple chargers <p>Electrical Specification:</p> <ul style="list-style-type: none"> ▪ Max charging current: 500mA ▪ Supply voltage: 5V ▪ µUSB charging connector ▪ Based on the MCP73832 single-cell Li-Po charger ▪ Connection points allows chaining of multiple chargers (1x2, 2.54mm pitch) <p>Mechanical Specification:</p> <ul style="list-style-type: none"> ▪ Weight: 1.2g ▪ Size (WxHxD): 10.5x16x1.6mm (not including cable) ▪ Connector for the Crazyflie 2.X stock battery
6	<p>Safety net for Multicopters (M500BK FR or better) Dimensions: 30 x 40 Feet Quantity: 1</p> <p>Description: Multicopter safety nets ensure their safety so that pilots can test new models and their flight characteristics at trade fairs or in electronics markets without risk.</p>

	Technical Specifications:	
	Material	high tenacity polypropylene, knotless, flame-retardant
	Mesh Size	Ø 1.5 mm
	Net Size	30 x 40 Feet
	Pose of Meshs	Quadratic (square)
	Mesh Connection	Knotless braid
	Edge Design	Reinforced selvage cord of approx. 7 mm
	Max. Tensile Strength of a Mesh	250 N
	Standards and Rules	DIN 4102 (B1, flame-retarding), non-flaming dripping
	Certificate	MPA-Bau certification report P-NDS04-851, Oeko-Tex® certificate 12.0.02466
	Continuous Operating Temperature	-40 to +80 °C
	Melting Point	165 °C
	Tensile Strength After Two Years of Climatic Influences:	90%
	Weight per Unit Area:	<= 40 g/m²

Sr. No.	Lot No. 4: Laboratory Furniture	
1	ISLAND TABLE ALONG WITH SOLID DOOR WALL CABINET AND ELECTRIC RACEWAYS Quantity: 55	
	<p>Base Material: Corian Framing: Mild Steel/Stainless steel vessel Antibacterial powder coated Dimensions: W x L x H (30" x 60" x 30") Tabletop Thickness: 13 mm Characteristics: Anti-Bacterial, Durable and Seamless, Strain resistant, impact resistance, Electric resistant, and water resistant.</p> <p>Rack Material: Corian Dimensions: W x L x H (12" x 24" x 30")</p>	 

Lot No. 5: IT Equipment		
Sr. No	Heavy Duty Multi-Function Printers (Konica Minolta BizHub 558e MFP or equivalent) QTY: 6	
1	Prime Function	Print, Copy, Scan
	Print Speed	55 pages per minute (ppm); or better
	Print Technology	Mono, Laser
	Print Resolution	1200 x 1200dpi
	Copy Resolution	1200 x 1200dpi
	Scan Optical Resolution	1200 x 1200dpi
	Monthly Duty Cycle	300,000 pages per month
	First Print Out Time	3.5 sec or less
	Paper Trays	4
	Automatic Document Feeder	100 sheets
	Memory	4,096MB or higher
	Hard Disk	320GB or higher
	Connectivity	10/100/1000Base-T Ethernet, USB 2.0, Wi-Fi 802.11b/g/n/ac
	Print Management	Emperon Print Controller, Web Admin Software
	Security Management	Secure printing/ copying to maintain confidentiality, and only allow access to retrieve prints using personalized passwords/ PIN codes, LDAP authentication, RFID and Smartcards. Should maintain logs, counts and statistics against each individual user printing/ copying and reports are available/ accessible through software
2	Apple MacBook Pro Quantity: 1	
	Features	Touch Bar and Touch ID
	Processor	Apple M1 chip with 8-core CPU, 8-core GPU, and 16-core Neural Engine or better
	RAM	8GB unified memory or higher
	Storage	512GB SSD storage or higher
	Display	At least 13-inch Retina display with True Tone
	Ports	Two Thunderbolt / USB 4 ports or higher
	Keyboard	Magic Keyboard
3	Apple iPad Mini Quantity: 1	
	Display	7.9-inch (diagonal) or above
	Authentication	Fingerprint-resistant oleophobic coating, Touch ID
	Chip	A12 Bionic chip with 64-bit architecture, Neural Engine or equivalent
	Camera	8-megapixel camera or better, Autofocus, Panorama, HDR for photos, Auto image stabilization
	Filter	Hybrid IR filter or equivalent
	Video Calling	FaceTime video iPad to any FaceTime-enabled device over Wi-Fi or cellular
	Audio Calling	FaceTime audio iPad to any FaceTime-enabled device over Wi-Fi or cellular
	Speakers	Stereo speakers
	Microphones	Dual microphones for calls, video recording, and audio recording

	Cellular and Wireless	Wi-Fi + Cellular models: UMTS/HSPA/HSPA+/DC-HSDPA (850, 900, 1700/2100, 1900, 2100 MHz); GSM/EDGE (850, 900, 1800, 1900 MHz)
	SIM Card	Nano-SIM
	Sensors	Touch ID
		Three-axis gyro
		Accelerometer
		Barometer
		Ambient light sensor
	Power & Battery	Built-in 19.1-watt-hour rechargeable lithium-polymer battery Up to 10 hours of surfing the web on Wi-Fi, watching video, or listening to music Charging via power adapter or USB to computer system
4	Android Tablet Quantity: 02	
	Display	10.1" or higher
	Resolution	1920 x 1200 or higher
	Processor	1.8GHz or better
	Camera	8.0MP or better
	Front Camera	5.0MP or better
	Memory	32GB ROM, 2GB RAM or higher
	Network	2G GSM , 3G UMTS, 4G FDD LTE, 4G TDD LTE
	Wi-Fi	802.11 a/b/g/n/ac 2.4G+5GHz, VHT80
	Location Technology	GPS, Glonass, Beidou, Galileo
	Bluetooth Version	Bluetooth v5.0
	OS	Android 8 or higher
	Card Slot	MicroSDXC
	Battery	Internet Usage Time(3G) (Hours)Up to 12 or higher
5	iMac (Desktop) Quantity: 1	
	Display	24-inch 4.5K Retina display or better
	Memory	8GB unified memory or better
	Storage	256GB SSD or higher
	Chip	Apple M1 chip 8-core CPU , 8-core GPU
	Graphics	Radeon Pro 5300 with 4GB of GDDR6 memory or better
	Video Supported	1080p or better
	Camera	1080p FaceTime HD camera with M1 image signal processor
	Audio	Wide stereo sound, High-fidelity six-speaker system with force-cancelling woofers
	Connections and Expansion	DisplayPort, Thunderbolt 3, USB 4, USB 3.1 Gen 2, Thunderbolt 2, HDMI, DVI, and VGA supported
	Wireless	802.11ax Wi-Fi 6 wireless networking

		IEEE 802.11a/b/g/n/ac compatible
	Input	Magic Keyboard & Mouse
	Bluetooth	Bluetooth 5.0 wireless technology
6	Multimedia Projector Quantity: 01	
	Type	LASER and LED Hybrid Light source
	Lumens	2500 or greater
	Resolution	XGA (1280 X 800) Native Resolution or greater
	Zoom	Wide angle 2x or greater
	Internal memory	Yes
	Communication	USB and wireless
	Interface	AV terminal, computer terminal, HDMI terminal, USB (Type A), USB (Micro-B)
	Projection range	4-15 ft or better
	Portability	Light weight and portable
7	Color Printer Quantity: 01	
	Print Technology	LASER
	Print Speed	Black (normal, A4): Up to 18 ppm; Color (normal, A4): Up to 4 ppm
	Resolution	Black (best): 600 x 600 dpi 4 bits; Black (normal): 600 x 600 dpi; Color (best): 600 x 600 dpi 4 bits; Colour (normal): 600 x 600 dpi
	Cartridges number	4 (1 each black, cyan, magenta, yellow)
	Display	LED
	Control Panel	4 Buttons (Wireless, Resume, Cancel, Power): LED indicator lights (Attention, Power, Wireless, C/M/Y/K Toner Gauge)
	Duty cycle (monthly, A4)	Up to 20,000 pages
	Media (Size Supported)	Tray1: A4; A5; A6; B5 (JIS); Oficio 216 x 340; 76 x 148.5 to 216 x 356 mm
	Media (Types)	Plain, Light, Heavy, Extra Heavy, Colored, Preprinted, Recycle, Labels, Bond, Glossy
	Paper Handling	Input: 150-sheet input tray; Output: 50-sheet output bin
	Memory	Standard/Maximum: 64 MB
	Processing Speed	400 MHz
	Operating system Compatibility	Windows® 10 (32/64 bit) or later
	Minimum system Requirements	PC: Windows 7 or newer, Intel® Pentium® IV 1 GHz 32-bit or 64-bit processor or higher, 1 GB RAM, 16 GB HDD
	Connectivity	Hi-Speed USB 2.0 port, Fast Ethernet 10/100Base-TX network port, Wireless 802.11 b/g/n
	Security Management	Password-protected network embedded Web server; enable/disable Network ports; SNMPv1 community password change; SNMPV2&V3; IPsec; Filtering: MAC, IPv4, Ipv
	Power Specifications	Power supply required: 220-volt input voltage: 220 to 240 VAC, Power consumption: 5 Active Printing < 300 W
	Warranty	One-year hardware warranty
8	Apple iPad 10.2 Quantity: 01	
	Color	Space Gray
	Storage/ Capacity	64GB
	Weight	≤ 500 grams

	Display	10.2-inch (diagonal) LED-backlit Multi-Touch display with IPS technology 2160-by-1620-pixel resolution at 264 pixels per inch (ppi) True Tone display 500 nits brightness Fingerprint-resistant oleophobic coating
	Chip	A13 Bionic chip with 64-bit architecture Neural Engine
	Camera	8MP Wide camera, <i>f</i> /2.4 aperture, Digital zoom up to 5x, Five-element lens, Panorama (up to 43MP), HDR for photos, Photo geotagging, Auto image stabilization, Burst mode
	Facetime HD Camera	12MP Ultra Wide camera, 122° field of view, <i>f</i> /2.4 aperture, HDR for photos, 1080p HD video recording at 25 fps, 30 fps, or 60 fps, Time-lapse video with stabilization, Extended dynamic range for video up to 30 fps, Cinematic video stabilization (1080p and 720p), Lens correction, Retina Flash, Auto image stabilization, Burst mode
	Microphones	Dual microphones for calls, video recording, and audio recording
	Wireless	Wi-Fi (802.11a/b/g/n/ac); dual band (2.4GHz and 5GHz); HT80 with MIMO, Bluetooth 4.2 technology
	Sensors	Touch ID, Three-axis gyro, Accelerometer, Barometer, Ambient light sensor
9	Apple Pencil (2nd generation) Quantity: 02	
	Diameter	<= 0.35 inch
	Weight	<= 22 grams
	Connectivity	Bluetooth
	Compatible with	iPad mini (6th generation), Apple ipad 10.2
	Other Features	Magnetically attaches and pairs
10	Smart Cover for iPad (9th generation) - English Lavender Quantity: 02	
	Color	Cyprus Green or Deep Navy
	Features	The Smart Cover for iPad is thin and light and offers protection for the front of your device. It automatically wakes the iPad when opened and puts it to sleep when closed. The Smart Cover should attach magnetically, and it can be easily folded it into different positions to create a stand for reading, viewing, typing, or making video calls.
11	LED Screen for Labs (70TU7000 Samsung 4K Ultra HD or equivalent) Quantity: 12	
	Product type	Smart LED TV
	Display	70inches or more
	Resolution	3,840 x 2,160 or better
	Picture processor	Crystal Processor 4K
	Wifi direct	supported
	Motion rate	MR120
	Auto motion plus	supported
	Dynamic refresh technology	supported
	Audio (sound output)	20W or better
	Bluetooth head availability	supported
	Smart thing app	supported
	Standby power consumption	0.5W or better
	Wifi connectivity	802.11ac

	Tv sound to mobile	supported
	Adaptive sound	supported
	Ethernet	Supported
	Connectivity	HDMI, USB
	HDMI connections	multiple
	Auto power	supported
	Auto channel	supported
	IPV4, IPV6	supported
	Power supply	100-240VAC
	Batteries (for Remote Control)	supported
	Remote control model	TM2180A or batter
	AI upscale	4K upscaled
	Power cable	supported
	Slim fit wall mount support	supported
	Mini wall mount support	supported
	Eco sensor	supported
12	Wireless Mouse and Keyboard Combo Qty:28	
	Product type	Mouse and mice combo
	model	MK850 or equivalent
	connectivity	Single USB for both
	Connection type(keyboard)	Bluetooth smart and 2.45GHZ
	Connection type (Mouse)	Bluetooth smart and 2.45GHZ
	Wireless range (keyboard)	10 meter or more
	Wireless range (mouse)	10 meter or more
	Scroll wheel(mouse)	Hyper fast
	No of buttons(mouse)	8
	Wireless encryption	supported
	Battery details(keyboard)	2* AAA
	Battery details (Mouse)	1*AA
	Software support	yes

Note:

1. PAF-IAST may re-adjust the quantities specified against the specifications of same genre in any of the Lots or increase the quantities as permissible under PPRA Rules.
2. The Bidder shall indicate in their offer,
 - a. detailed specifications of their offered product(s),
 - b. standard accessories,
 - c. make and origin, as part of confirming Compliance as per the format given in Form – D.

3. The Unit Price, Total Bid Price, and Additional Warranty Price of the quoted items shall be indicated as per the given format in Form – G.
4. Bidders are required to provide/attach third party report or assessment in case items are quoted as per the provision of “Equivalent” given in RFP

Section 5b: Special Terms and Conditions

Standard

- The goods supplied must be capable of functioning properly under the climatic conditions of Haripur.
- There shall be no deviation from specification and country of make as provided with each item. In case of any ambiguity in specification/ accessories needed for the full functioning of the equipment, the firm must clear it with the Procurement Committee. However, the decision of the Procurement Committee will be final.
- The goods with standard accessories supplied under this tender shall confirm to the standard maintenance in the technical specification.
- Visit to already installed and operational equipment if required as per Section 5, shall be provided within the time specified and unless otherwise specified by the Purchaser, at no expense to the Institute. The PAF-IAST may ask the bidders to carry out testing/analysis of samples (to be provided) to evaluate the performance of already installed and operational unit of similar specifications.

Training

- The firm supplying the item/ equipment(s) will demonstrate the operation/ working of the supplied goods to the satisfaction of PAF- IAST and provide training. Suppliers are advised to provide details on formal training for the LOT(s) covering aspects as mentioned below, but not limited to, as required in Form – E (Section 3).

LOT(s)	
Level	1 to 5
Basic	Demonstrate the operations/ working to end users; Identify the do's and don'ts; and aspects deem necessary for long-life functioning of supplied goods.
Hands-on	Demonstrate technical features; Elaborate technical configuration(s) performed for integration with the overall setup; Documented guidelines for generating reports using software and/ or systems' interface
Advanced	Provide trainings to Operators for troubleshooting and smooth operations using system manuals

- The Bidder shall be responsible for all the necessary training programs available for the operation, maintenance and troubleshooting of the equipment at no additional cost to the institute. Unless otherwise specified, such training as well as training materials shall be provided in the language of the Bid as specified in the BDS.

Calibration of item/equipment

- The supplier will install the good(s) in the presence and satisfaction of the Procurement Committee, if need be. In case of any defect in the supplied good(s) or if it is not in accordance with the desired specification(s), the goods will be changed at the cost of the supplier.

Warranty/ Guarantee

- The Supplier will give comprehensive onsite warranty/ guarantee that the goods/ stores/ articles would continue to conform to the description and quality as specified for a period of at least One (01) year and additional two (02) years as Extended Warranty from the date of delivery, installation and commissioning of the said goods/ stores/ articles to be purchased and that notwithstanding the fact that the purchaser may have inspected and/ or approved the said goods/ stores/ article, if during the aforesaid period, the said goods/ stores/ articles, be discovered not to conform to the description and quality aforesaid or have determined (and the decision of the Procurement Committee in that context will be final and conclusive), the PAF: IAST will be entitled to reject the said goods/ stores/ articles or such portion thereof as may be discovered not to conform to the said description and quality, on such rejection the goods/ articles/ stores will be at the supplier's risk and all the provisions relating to rejection of goods etc. shall apply.
- The Supplier shall, if so called upon to do, replace the goods etc., or such portion thereof as is rejected by Procurement Committee, otherwise the supplier shall pay such damage as may arise by the reason of the breach of the condition herein contained. Nothing herein contained shall prejudice any other right of the Procurement Committee in that behalf under this contract or otherwise.
- The Supplier shall also replace equipment, in case it is found defective which cannot be put to operation due to manufacturing defect, etc. In case of equipment specified by the Procurement Committee, the supplier shall be responsible from carrying out annual maintenance and repairs on the terms and conditions as may be agreed. The supplier shall also be responsible to ensure adequate regular supply of spare parts needed for a specific type of equipment whether under their annual maintenance and repairs contract or otherwise. In case of change of model, supplier will give sufficient notice to the Procurement Committee who may like to purchase spare parts from them to maintain the equipment in perfect condition.

Section 6: Returnable Bidding Forms / Checklist

This section serves as a checklist for preparation of your Bid. Please complete the Returnable Bidding Forms in accordance with the instructions in the forms and return them as part of your Bid submission. No alteration to format of forms shall be permitted and no substitution shall be accepted.

Before submitting your Bid, please ensure compliance with the Bid Submission instructions of the BDS 22.

Bid Proposal:

Have you duly completed all the Returnable Bidding Forms?	
✦ Form A: Bid Submission Form	<input type="checkbox"/>
✦ Form B: Joint Venture/Consortium/ Association Information Form	<input type="checkbox"/>
✦ Form C: Bidder Information Form	<input type="checkbox"/>
✦ Form D: Qualification Form	<input type="checkbox"/>
✦ Form E: Bid Proposal Form	<input type="checkbox"/>
✦ Form F: Specifications Compliance Form	<input type="checkbox"/>
✦ Form G: Price Schedule Form	<input type="checkbox"/>
Have you provided the required documents to establish compliance with the evaluation criteria in Section 4?	<input type="checkbox"/>

Form A: Bid Submission Form

(To be Submitted in an envelope duly sealed and marked as Technical Proposal)

Name of Bidder:	[Insert Name of Bidder]	Date:	Select date
ITB reference:	PAF: IAST-AIE-ITB-114-21		

We, the undersigned, submit our Bid for the award of contract to supply the goods and related services required for [Insert Title of goods and services] in accordance with your Invitation to Bid No. [Insert ITB Reference Number]. We hereby submit our Bid, which includes this Bid proposal.

We hereby declare that our firm, its affiliates or subsidiaries or employees, including any JV/ Consortium/ Association members or subcontractors or suppliers for any part of the contract:

- a) is not under procurement prohibition by any of the Government/ Semi-government/ Autonomous organization;
- b) have not been suspended, debarred, sanctioned or otherwise identified as ineligible by any Organization in Pakistan;
- c) have not declared bankruptcy, are not involved in bankruptcy or receivership proceedings, and there is no judgment or pending legal action against us that could impair our operations in the foreseeable future;
- d) undertake not to engage in proscribed practices, including but not limited to corruption, fraud, coercion, collusion, obstruction, or any other unethical practice, with the PAF: IAST, and to conduct business in a manner that averts any financial, operational, reputational or other undue risk to the PAF: IAST.

We declare that all the information and statements made in this Bid are true and we accept that any misinterpretation or misrepresentation contained in this Bid may lead to our disqualification and/ or sanctioning by the PAF-IAST.

We offer to supply the goods and related services in conformity with the Bidding documents, including the PAF-IAST General Conditions of Contract and in accordance with the Schedule of Requirements and Specifications.

Our Bid shall be valid and remain binding upon us for the period specified in the Bid Data Sheet.

We understand and recognize that you are not bound to accept any Bid you receive.

I, the undersigned, certify that I am duly authorized by [Insert Name of Bidder] to sign this Bid and bind it should PAF- IAST accept this Bid.

Name: _____

Title: _____

Date: _____

Signature: _____

[Stamp with official stamp of the Bidder]

Form B: Joint Venture/ Consortium/ Association Information Form

(To be Submitted in an envelope duly sealed and marked as Technical Proposal)

Name of Bidder:	[Insert Name of Bidder]	Date:	Select date
ITB reference:	PAF: IAST-AIE-ITB-114-21		

To be completed and returned with your Bid if the Bid is submitted as a Joint Venture/Consortium/Association.

No	Name of Partner and contact information (address, telephone numbers, fax numbers, e-mail address)	Proposed proportion of responsibilities (in %) and type of goods and/or services to be performed
1	[Complete]	[Complete]
2	[Complete]	[Complete]
3	[Complete]	[Complete]

Name of leading partner

(with authority to bind the JV, Consortium, Association during the ITB process and, in the event a Contract is awarded, during contract execution)

[Complete]

We have attached a copy of the below referenced document signed by every partner, which details the likely legal structure of and the confirmation of joint and severable liability of the members of the said joint venture:

☐ Letter of intent to form a joint venture **OR** ☐ JV/Consortium/Association agreement

We hereby confirm that if the contract is awarded, all parties of the Joint Venture/Consortium/Association shall be jointly and severally liable to PAF: IAST for the fulfillment of the provisions of the Contract.

Name of partner: _____ Name of partner: _____

Signature: _____ Signature: _____

Date: _____ Date: _____

Form C: Bidder Information Form

(To be Submitted in an envelope duly sealed and marked as Technical Proposal)

Name of Bidder:	[Insert Name of Bidder]	Date:	Select date
ITB reference:	PAF: IAST-AIE-ITB-114-21		

Legal name of Bidder	[Complete]
Legal address & Branch Offices	[Complete]
Year of registration	[Complete]
Bidder's Authorized Representative Information	Name and Title: [Complete] Telephone numbers: [Complete] Email: [Complete]
Are you a PAF: IAST registered vendor?	<input type="checkbox"/> Yes <input type="checkbox"/> No If yes, [insert PAF- IAST vendor number]
Countries of operation	[Complete]
No. of full-time employees	[Complete]
No. of Technical Staff	[Complete]
Quality Assurance Certification (e.g. ISO 9000 or Equivalent) (If yes, provide a Copy of the valid Certificate):	[Complete]
Does your Company hold any accreditation such as ISO 14001 or ISO 14064 or equivalent related to the environment? (If yes, provide a Copy of the valid Certificate):	[Complete]
Does your Company have a written Statement of its Environmental Policy? (If yes, provide a Copy)	[Complete]
Does your organization demonstrates significant commitment to sustainability through some other means, for example internal company policy documents on women	[Complete]

<p>empowerment, renewable energies, education, vocational trainings, social responsibility towards people with Special needs, or membership of trade institutions promoting such issues</p>	
<p>Contact person that PAF: IAST may contact for requests for clarifications during Bid evaluation (Only Lead Bidder)</p>	<p>Name and Title: [Complete] Telephone numbers: [Complete] Email: [Complete]</p>
<p>Please attach the following documents:</p>	<ol style="list-style-type: none"> 1. Company Profile, which should not exceed fifteen (15) pages, including printed brochures and product catalogues relevant to the goods and/ or services being procured. 2. Proposed timetable for delivery, installation and commissioning plan for the required and quoted items to PAF: IAST after the award of Contract. 3. Certificate of Registration of the business. 4. Principal's Authorization Letter in favor of Bidder to participate in this Tender. 5. A proofing document confirms the offered warranty for at least One (01) year, supported by the manufacturer's certificates, if applicable. 6. A proofing document confirming supply of same or similar items of this magnitude to various clients/ customers in Pakistan. 7. Proven records of no less than the required Projects of similar nature/ value/ complexity in which delivery and services were extended. 8. Full detailed description of the specifications of the proposed items in addition to catalogues clearly showing the proposed specifications responding to the requirements. 9. Supporting photos of the proposed items, if applicable. 10. Quality certifications: ISO 9001:2015 (if applicable) 11. Latest Audited Financial Statements (Income Statement and Balance Sheet) including Auditor's Report for the past (3 years).

Note: To be filled in by each partner in case Bid is submitted as a JV/ Consortium/ Association

Form D: Qualification Form

(To be submitted in an envelope duly sealed and marked as Technical Proposal)

Name of Bidder:	[Insert Name of Bidder]	Date:	Select date
ITB reference:	PAF: IAST-AIE-ITB-114-21		

If JV/ Consortium/ Association, to be completed by each partner.

PREVIOUS RELEVANT EXPERIENCE

Please list all Projects successfully completed in the last 3 years, covering following aspects; a) Scope of the projects/ assignments.

- b) Activities performed for the successful completion of the project.
- c) Support Services Contracts in hand with SLA for the supplied goods.

List only those assignments for which the Bidder was legally contracted or sub-contracted by the Client as a company or was one of the Consortium/ JV partners. Assignments completed by the Bidder's individual experts working privately or through other firms cannot be claimed as the relevant experience of the Bidder, or that of the Bidder's partners or sub-consultants, but can be claimed by the Experts themselves in their CVs. The Bidder should be prepared to substantiate the claimed experience by presenting copies of relevant documents and references if so requested by PAF- IAST.

Project name & Country of Assignment	Client & Reference Contact Details	Contract Value	Period of activity and status	Types of activities undertaken

Bidders may also attach their own Project Data Sheets with more details for assignments above.

HISTORY OF NON-PERFORMING CONTRACTS

<input type="checkbox"/> Non-performing contracts did not occur during the last 3 years			
<input type="checkbox"/> Contract(s) not performed in the last 3 years			
Year	Non- performed portion of contract	Contract Identification	Total Contract Amount (current value in US\$)
		Name of Client: Address of Client: Reason(s) for non-performance:	

FINANCIAL STANDING

Annual Turnover for the last 3 years	Year	PKR
	Year	PKR
	Year	PKR
Latest Credit Rating (if any). indicate the source		

Financial information (in PKR equivalent)	Historic information for the last 3 years		
	Year 1	Year 2	Year 3
	<i>Information from Balance Sheet</i>		
Total Assets (TA)			
Total Liabilities (TL)			
Current Assets (CA)			
Current Liabilities (CL)			
	<i>Information from Income Statement</i>		
Total / Gross Revenue (TR)			
Profits Before Taxes (PBT)			
Net Profit			
Current Ratio			

☐ Attached are copies of the audited financial statements (balance sheets, including all related notes, and income statements) for the years required above complying with the following condition:

- Must reflect the financial situation of the Bidder or party to a JV, and not sister or parent companies;
- Historic financial statements must be audited by a certified public accountant;
- Historic financial statements must correspond to accounting periods already completed and audited. No statements for partial periods shall be accepted.

Form E: Technical Bid Proposal Form

(To be submitted in an envelope duly sealed and marked as Technical Proposal)

Name of Bidder:	[Insert Name of Bidder]	Date:	Select date
ITB reference:	PAF: IAST-AIE-ITB-114-21		

The Bidder's Bid should be organized to follow this format of the Technical Bid Proposal. Where the bidder is presented with a requirement or asked to use a specific approach, the bidder must not only state its acceptance, but also describe how it intends to comply with the requirements. Where a descriptive response is requested, failure to provide the same may be viewed as non-responsive.

SECTION 1: Qualification, capacity and expertise

- 1.1 Bidder's general organizational capability: management structure, financial stability and project financing capacity, project management controls, extent of work to be subcontracted (if so, provide details).
- 1.2 Bidder's relevance of specialized knowledge and experience on similar engagements done in the region/ country. Bidder should submit a detailed description of the projects executed (quantities, value, beneficiary)
- 1.3 Manufacturer's strengths covering the regional/ global market presence, hi-tech products portfolio, manufacturing capacity, R&D activities resulting in national and international patents, quality control and assurance practices, and international certifications in relevant areas.

SECTION 2: Management Structure and Key Personnel

- 2.1 Describe the overall management approach toward planning and implementing the project. Include an organization chart for the management of project describing relationship of key positions and designations.
- 2.2 Provide CVs for key personnel that will be provided to support the implementation of this project using the format below. CVs should demonstrate qualifications in areas relevant to scope of goods and/or services.

Format for CV of Proposed Key Personnel

Name of Personnel	[Insert]
Position	[Insert]
Nationality	[Insert]
Language proficiency	[Insert]
Education/Qualifications	<i>[Summarize college/university and other specialized education of personnel member, giving names of schools, dates attended, and degrees/qualifications obtained.]</i> [Insert]
Professional certifications	<i>[Provide details of professional certifications relevant to the scope of goods and/or services]</i> ✦ Name of institution: [Insert] ✦ Date of certification: [Insert]
Employment Record/Experience	<i>[List all positions held by personnel (starting with present position, list in reverse order), giving dates, names of employing organization, title of position and location of employment.]</i> [Insert]

I, the undersigned, certify that to the best of my knowledge and belief, the data provided above correctly describes my qualifications, my experiences, and other relevant information about myself.

Signature of Personnel

Date (Day/Month/Year)

SECTION 3: Scope of Supply, Technical Specifications and Training(s)

This section should demonstrate the Bidder's responsiveness to the specification by identifying the specific components proposed, addressing the requirements, as specified, point by point; providing a detailed description of the essential performance characteristics proposed; and demonstrating how the proposed bid meets or exceeds the requirements/specifications. All important aspects should be addressed in sufficient detail.

- 3.1 A detailed description of how the Bidder will deliver the required goods and services, keeping in mind the appropriateness to local conditions and project environment. Details how the different service elements shall be organized, controlled and delivered.
- 3.2 Explain whether any work would be subcontracted, to whom, how much percentage of the requirements, the rationale for such, and the roles of the proposed sub-contractors and how everyone will function as a team.
- 3.3 Implementation plan including a Gantt Chart or Project Schedule indicating the detailed sequence of activities that will be undertaken and their corresponding timing.
- 3.4 Details on post-deployment trainings on-site hands-on training for all LOTs.

SECTION 4: Registration & Certifications

This section should demonstrate the Bidder's responsiveness towards its registration with the relevant national body and international organizations Certifying the bidder's qualifications with respect to Quality and Project Management.

- 4.1 Provide a copy of valid registration with the Pakistan Engineering Council (if applicable).
- 4.2 Provide a copy of valid Certificate issued by International Organization for Standardization certifying the bidder's compliance and practices towards quality management principles and standards in their offered products/ solutions and services.
- 4.3 Provide a copy of valid Certificate issued by International Organization for Standardization certifying the bidder's compliance and practices towards information security management principles and standards in their offered products/ solutions and services.

SECTION 5: Warranty and Support Services

This section should demonstrate the Bidder's responsiveness to the post-commissioning warranty and support services of the goods supplied, addressing the requirements, as specified, point by point; providing a detailed description of the essential performance characteristics proposed; and demonstrating how the proposed bid meets or exceeds the requirements. All important aspects should be addressed in sufficient detail.

- 5.1 A detailed description of how the Bidder will provide the Warranty claims to the users, keeping in mind the span and complexity of the project in context of local conditions and project environment.
- 5.2 Explain whether any services or work would be subcontracted, to whom, how much percentage of the requirements, the rationale for such, and the roles of the proposed sub-contractors and how everyone will function as a team.
- 5.3 Details how the post-delivery/ deployment Support Services will be provided to the users keeping in consideration the criticality of systems, and dependency of university administration and operations on such systems.

Form F: Specifications Compliance Form

(To be submitted in an envelope duly sealed and marked as Technical Proposal)

Name of Bidder:	[Insert Name of Bidder]	Date:	Select date
ITB reference:	PAF: IAST-AIE-ITB-114-21		

The Bidder's Bid should be organized to follow this format of the Technical Bid Proposal. Where the bidder is presented with a requirement or asked to use a specific approach, the bidder must not only state its acceptance, but also describe how it intends to comply with the requirements. Where a descriptive response is requested, failure to provide the same may be viewed as non-responsive.

		Your response Compliance with specifications		
Goods and services to be Supplied <i>(based on the Technical Specifications provided in Section 5a & Section 5b)</i>		Comply (Yes/ No) <i>(If No, indicate discrepancies)</i>	Quoted Specifications	Type/ Model no. & Country of Origin
Required Items		Offered Items		
LOT #1: Computer Vision Laboratory				
1.	NVIDIA Jetson Nano Developer Kit (V3)		(Bidders are required to attach Compliance Comparison Sheet supported by Product Data Sheet against the Specifications provided in Section – 5)	
2.	Jetson Xavier NX Developer Kit			
3.	Jetson AGX Xavier Developer Kit			
4.	Google Coral Dev Board Kit			
5.	Intel Neural Compute Stick 2/latest (NCSM2485.DK)			
6.	SparkFun JetBot AI Kit v3.0 (Without Jetson Nano)			
7.	SparkFun Inventor's Kit Lab Pack - v4.1			
LOT #2: Smart City Laboratory				
1.	Microsoft, Azure Kinect DK		(Bidders are required to attach Compliance Comparison Sheet supported by Product Data Sheet against the Specifications provided in Section – 5)	
2.	OpenCV AI Kit: OAK—D			
3.	IMX219-160IR Camera			
4.	OpenMV Cam H7 Plus			
5.	OpenMV WiFi Shield			
6.	OpenMV LCD Shield			
7.	Transphorm Inverter (DC to AC) Evaluation Platform			
8.	Isolated Inverter Platform			

9.	Programmable DC Electronic Load 300 W, Model: PEL-3031E			
10.	ASR-3000 Series Programmable AC/DC Power Source			
11.	Hanback Smart Farm Controller (IoT based soil or hydroponic cultivation platform capable of actual cultivation)			
LOT #3: Intelligent Field Robotics Laboratory				
1.	Custom-Build Agile Multicopter			
2.	Custom-Build Carrier Multicopter			
3.	RTK Base station for accurate GPS positioning of robots (RTK & DGPS BASE STATION by Inertial Labs			
4.	Gimbal mountable 4k Camera for Multicopters			
5.	Loco swarm bundle inclusive additional highlighted accessories			
6.	Safety net for Multicopters (m500bk)			
LOT #4: Laboratory furniture				
1.	Island table along with solid door wall cabinet and electric raceways		(Bidders are required to attach Compliance Comparison Sheet supported by Product Data Sheet against the Specifications provided in Section – 5)	
LOT #5: IT Equipment				
1	Heavy Duty Multi-Function Printers		(Bidders are required to attach Compliance Comparison Sheet supported by Product Data Sheet against the Specifications provided in Section – 5)	
2	Apple MacBook Pro			
3	Apple iPad Mini			
4	Android Tablet			
5	iMac (Desktop)			
6	Multimedia Projector			
7	Color Printer			
8	Apple iPad 10.2			
9	Apple Pencil (2nd generation)			
10	Smart Cover for iPad (9th generation) - English Lavender			
11	LED Screen for Labs (70TU7000 Samsung 4K Ultra HD or equivalent)			
12	Wireless Mouse and Keyboard Combo			

Form G: Price Schedule Form

(To be Submitted in a separate and sealed envelope duly marked as Financial Proposal)

Name of Bidder:	[Insert Name of Bidder]	Date:	Select date
ITB reference:	PAF: IAST-AIE-ITB-114-21		

[The Bidder is required to prepare the Price Schedule following the below format. The Price Schedule must include a detailed cost breakdown of all goods and related services to be provided.]

We, the <<Name of Bidder>>, hereby submit our Financial Bid for the Supply of Items as below. We assure you of our full compliance to the required specifications, delivery schedule and other terms without any deviation and/ or reservations. We reiterate our acceptance to the terms and conditions of the RFP. Our Financial proposal as below is submitted for your kind consideration;

QUOTE PRICE IN PKR

	Quoted Items in compliance to the Technical Specifications as referred in Section – 5a and Section – 5b	Quantity (a)	Unit Price [in Rs.] (b)	GST [in Rs.] (c)	Total Price [in Rs.] $d=a*[b+c]$
	Lot # 1: Computer Vision Laboratory				
1.	NVIDIA Jetson Nano Developer Kit (V3)	30			
2.	Jetson Xavier NX Developer Kit	4			
3.	Jetson AGX Xavier Developer Kit	4			
4.	Google Coral Dev Board Kit	6			
5.	Intel Neural Compute Stick 2/latest (NCSM2485.DK)	30			
6.	SparkFun JetBot AI Kit v3.0 (Without Jetson Nano)	25			
7.	SparkFun Inventor's Kit Lab Pack - v4.1	4			
	LOT #2: Smart City Laboratory				
1.	Microsoft, Azure Kinect DK	6			
2.	OpenCV AI Kit: OAK—D	25			
3.	IMX219-160IR Camera	30			
4.	OpenMV Cam H7 Plus	30			
5.	OpenMV WiFi Shield	30			
6.	OpenMV LCD Shield	30			
7.	Transphorm Inverter (DC to AC) Evaluation Platform	5			
8.	Isolated Inverter Platform	5			
9.	Programmable DC Electronic Load 300 W, Model: PEL-3031E	5			
10.	ASR-3000 Series Programmable AC/DC Power Source	1			
11.	Hanback Smart Farm Controller (IoT based soil or hydroponic cultivation platform capable of actual cultivation)	15			
	LOT #3: Intelligent Field Robotics Laboratory				
1.	Custom-Build Agile Multicopter	4			
2.	Custom-Build Carrier Multicopter	2			

3.	RTK Base station for accurate GPS positioning of robots (RTK & DGPS BASE STATION by Inertial Labs or equivalent)	1			
4.	Gimbal mountable 4k Camera for Multicopters	4			
5.	Loco swarm bundle inclusive additional highlighted accessories	3			
6.	Safety net for Multicopters (m500bk)	1			
LOT #4: Laboratory Furniture					
1.	Island table along with solid door wall cabinet and electric raceways	55			
LOT #5: IT Equipment					
1.	Heavy Duty Multi-Function Printers	6			
2.	Apple MacBook Pro	1			
3.	Apple iPad Mini	1			
4.	Android Tablet	2			
5.	iMac (Desktop)	1			
6.	Multimedia Projector	1			
7.	Color Printer	1			
8.	Apple iPad 10.2	1			
9.	Apple Pencil (2nd generation)	2			
10.	Smart Cover for iPad (9th generation) - English Lavender	2			
11	LED Screen for Labs (70TU7000 Samsung 4K Ultra HD or equivalent)	12			
12	Wireless Mouse and Keyboard Combo	28			

Extended Warranty Price (at discretion of PAF-IAST)

QUOTE PRICE IN PKR

	Annual Warranty & Support Services beyond Standard Warranty of the Quoted Items	2 nd Year (PKR)	3 rd Year (PKR)	4 th Year (PKR)
	Lot # 1: Computer Vision Laboratory			
1.	NVIDIA Jetson Nano Developer Kit (V3)			
2.	Jetson Xavier NX Developer Kit			
3.	Jetson AGX Xavier Developer Kit			
4.	Google Coral Dev Board Kit			
5.	Intel Neural Compute Stick 2/latest (NCSM2485.DK)			
6.	SparkFun JetBot AI Kit v3.0 (Without Jetson Nano)			
7.	SparkFun Inventor's Kit Lab Pack - v4.1			
	LOT #2: Smart City Laboratory			
1	Microsoft, Azure Kinect DK			
2	OpenCV AI Kit: OAK—D			
3	IMX219-160IR Camera			
4	OpenMV Cam H7 Plus			
5	OpenMV WiFi Shield			
6	OpenMV LCD Shield			
7	Transphorm Inverter (DC to AC) Evaluation Platform			
8	Isolated Inverter Platform			
9	Programmable DC Electronic Load 300 W, Model: PEL-3031E			
10	ASR-3000 Series Programmable AC/DC Power Source			
11	Hanback Smart Farm Controller (IoT based soil or hydroponic cultivation platform capable of actual cultivation)			
	LOT #3: Intelligent Field Robotics Laboratory			
1.	Custom-Build Agile Multicopter			
2.	Custom-Build Carrier Multicopter			
3.	RTK Base station for accurate GPS positioning of robots (RTK & DGPS BASE STATION by Inertial Labs or equivalent)			
4.	Gimbal mountable 4k Camera for Multicopters			
5.	Loco swarm bundle inclusive additional highlighted accessories			
6.	Safety net for Multicopters(m500bk)			
	LOT #4: Laboratory Furniture			
1.	Island table along with solid door wall cabinet and electric raceways			
	LOT #7: IT Equipment			

1	Heavy Duty Multi-Function Printers			
2	Apple MacBook Pro			
3	Apple iPad Mini			
4	Android Tablet			
5	iMac (Desktop)			
6	Multimedia Projector			
7	Color Printer			
8	Apple iPad 10.2			
9	Apple Pencil (2nd generation)			
10	Smart Cover for iPad (9th generation) - English Lavender			
11	LED Screen for Labs (70TU7000 Samsung 4K Ultra HD or equivalent)			
12	Wireless Mouse and Keyboard Combo			

Total Bid Value in Figures (including Extended Warranty Price): PKR _____

Total Bid Value in words (including Extended Warranty Price): PKR _____

Offered Percentage Discount in case LC (Letter of Credit) is opted as Mode of Payment:

Final Bid Value in Figures (including Extended Warranty & Discount): _____

Final Bid Value in words (including Extended Warranty & Discount): _____

Name & Designation of Authorized Person: _____

Signature: _____ (Please affix company stamp here)

Note: Quoted price must be inclusive of all taxes and duties.

QUOTE PRICE IN USD

	Quoted Items in compliance to the Technical Specifications as referred in Section – 5a and Section – 5b	Quantity y (a)	Unit Price [in US\$] (b)	Total Price [in US\$] d=a*b
	Lot # 1: Computer Vision Laboratory			
8.	NVIDIA Jetson Nano Developer Kit (V3)	30		
9.	Jetson Xavier NX Developer Kit	4		
10.	Jetson AGX Xavier Developer Kit	4		
11.	Google Coral Dev Board Kit	6		
12.	Intel Neural Compute Stick 2/latest (NCSM2485.DK)	30		
13.	SparkFun JetBot AI Kit v3.0 (Without Jetson Nano)	25		
14.	SparkFun Inventor's Kit Lab Pack - v4.1	4		
	LOT #2: Smart City Laboratory			
12.	Microsoft, Azure Kinect DK	6		
13.	OpenCV AI Kit: OAK—D	25		
14.	IMX219-160IR Camera	30		
15.	OpenMV Cam H7 Plus	30		
16.	OpenMV WiFi Shield	30		
17.	OpenMV LCD Shield	30		
18.	Transphorm Inverter (DC to AC) Evaluation Platform	5		
19.	Isolated Inverter Platform	5		
20.	Programmable DC Electronic Load 300 W, Model: PEL-3031E	5		
21.	ASR-3000 Series Programmable AC/DC Power Source	1		
22.	Hanback Smart Farm Controller (IoT based soil or hydroponic cultivation platform capable of actual cultivation)	15		
	LOT #3: Intelligent Field Robotics Laboratory			
7.	Custom-Build Agile Multicopter	4		
8.	Custom-Build Carrier Multicopter	2		
9.	RTK Base station for accurate GPS positioning of robots (RTK & DGPS BASE STATION by Inertial Labs or equivalent)	1		
10.	Gimbal mountable 4k Camera for Multicopters	4		
11.	Loco swarm bundle inclusive additional highlighted accessories	3		
12.	Safety net for Multicopters (m500bk)	1		
	LOT #4: Laboratory Furniture			
2.	Island table along with solid door wall cabinet and electric raceways	55		
	LOT #5: IT Equipment			
11.	Heavy Duty Multi-Function Printers	6		
12.	Apple MacBook Pro	1		
13.	Apple iPad Mini	1		
14.	Android Tablet	2		

15.	iMac (Desktop)	1		
16.	Multimedia Projector	1		
17.	Color Printer	1		
18.	Apple iPad 10.2	1		
19.	Apple Pencil (2nd generation)	2		
20.	Smart Cover for iPad (9th generation) - English Lavender	2		
11	LED Screen for Labs (70TU7000 Samsung 4K Ultra HD or equivalent)	12		
12	Wireless Mouse and Keyboard Combo	28		

Extended Warranty Price (at discretion of PAF-IAST)

QUOTE PRICE IN PKR

	Annual Warranty & Support Services beyond Standard Warranty of the Quoted Items	2 nd Year (US\$)	3 rd Year (US\$)	4 th Year (US\$)
	Lot # 1: Computer Vision Laboratory			
1.	NVIDIA Jetson Nano Developer Kit (V3)			
2.	Jetson Xavier NX Developer Kit			
3.	Jetson AGX Xavier Developer Kit			
4.	Google Coral Dev Board Kit			
5.	Intel Neural Compute Stick 2/latest (NCSM2485.DK)			
6.	SparkFun JetBot AI Kit v3.0 (Without Jetson Nano)			
7.	SparkFun Inventor's Kit Lab Pack - v4.1			
	LOT #2: Smart City Laboratory			
1	Microsoft, Azure Kinect DK			
2	OpenCV AI Kit: OAK—D			
3	IMX219-160IR Camera			
4	OpenMV Cam H7 Plus			
5	OpenMV WiFi Shield			
6	OpenMV LCD Shield			
7	Transphorm Inverter (DC to AC) Evaluation Platform			
8	Isolated Inverter Platform			
9	Programmable DC Electronic Load 300 W, Model: PEL-3031E			
10	ASR-3000 Series Programmable AC/DC Power Source			
11	Hanback Smart Farm Controller (IoT based soil or hydroponic cultivation platform capable of actual cultivation)			
	LOT #3: Intelligent Field Robotics Laboratory			
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	LOT #7: IT Equipment			

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3	Apple iPad Mini			
4	Android Tablet			
5	iMac (Desktop)			
6	Multimedia Projector			
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8	Apple iPad 10.2			
9	Apple Pencil (2nd generation)			
10	Smart Cover for iPad (9th generation) - English Lavender			
11	LED Screen for Labs (70TU7000 Samsung 4K Ultra HD or equivalent)			
12	Wireless Mouse and Keyboard Combo			

Total Bid Value in Figures (including Extended Warranty Price): USD _____

Total Bid Value in words (including Extended Warranty Price): USD _____

Name & Designation of Authorized Person: _____

Signature: _____ (Please affix company stamp here)

Annex – I: Integrity Pact

The Bidders will be required to submit the below text on stamp paper after filling in the details and duly signed as well as stamped, as part of their Technical Proposal.

DECLARATION OF FEES, COMMISSION AND BROKERAGE ETC PAYABLE BY THE SUPPLIER OF GOODS, SERVICES & WORK IN CONTRACTS WORTH RS. 10.0 MILLION OR MORE

(To be filled by the bidder as a part of technical proposal)

Contract Number: _____ Dated: _____

Contract Value: _____

Contract Title: _____

_____ hereby declare that it has not obtained or induced the procurement of any contract, right, interest, privilege or other obligation or benefit from Government of Pakistan or any

administrative subdivision or agency thereof or any other entity owned or controlled by it (GoP) through any corrupt business partner.

Without limiting the generality of the foregoing, _____ represents and warrants that it has fully declared the brokerage, commission, fees etc. paid or payable to anyone and not given or not given or agreed to give and shall not give or agree to give to anyone within or outside Pakistan either directly or indirectly through any nature or juridical person, including its affiliate, agent, associate, broker, consultant, director, promoter, shareholder, sponsor or subsidiary, any commission, gratification, bribe, finder's fee or kickback, whether described as consultant fee or otherwise, with the object of obtaining or inducing the procurement of a contract, right, interest, privilege or other obligation or benefit in whatever from GoP, except that which has been expressly declared pursuant hereto.

_____ certifies that it has made and will make full disclosure of all agreements and arrangements with all persons in respect of or related to the transaction with GoP and has not taken any action or will not take any action to circumvent the above declaration, representation or warranty.

_____ accept full responsibility and strict liability for making any false declaration, not making full disclosure, misrepresenting facts or taking any action likely to defeat the purpose of this declaration, representation and warranty. It agrees that any contract, right, interest, privilege or other obligation or benefit obtained or procured as aforesaid shall, without prejudice to any other right and remedies available to GoP under any law, contract or other instrument, be voidable at the option of GoP.

Notwithstanding any rights and remedies exercised by GoP in this regard, _____ agrees to identify GoP for any loss or damage incurred by it on account of its corrupt business practices and further pay compensation to GoP in an amount equivalent to ten times the sum of any commission, gratification, bribe, finder's fee or kickback given by _____ as aforesaid for the purpose of obtaining or inducing the procurement of any contract, right, interest, privilege or other obligation or benefit in whatsoever from GoP.

[Buyer] [Seller / Supplier]

Annex – II: Draft Contract Sample

Available at PAF: IAST website at <http://www.paf-iaast.edu.pk/downloads>