Standard Bidding Document

REPLACEMENT OF OBSOLETE & DETERIORATED CRAC UNITS SERVING RADAR AND AIR NAVIGATION FACILITIES AT AREA CONTROL CENTRE, JIAP – KARACHI
(Works)

National

Single Stage-Two Envelope

November 26, 2026

Jinnah International Airport - Pakistan Airports Authority (Pakistan Airports Authority (PAA)),Senior Joint Director Jinnah International Airport Karachi, Airport Sub-Division, Malir (District), Karachi (Division), Sindh (Province). Phone: +92-333-792-2469, Email: adeel_aa77@hotmail.com

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REQUEST FOR BIDS

PROCUREMENT OF CIVIL WORKS

1. The **Jinnah International Airport - Pakistan Airports Authority (Pakistan Airports Authority (PAA))** has reserved Funds for the procurement planned for FY **2026-27**. The **Jinnah International Airport - Pakistan Airports Authority (Pakistan Airports Authority (PAA))** intends to apply part of the proceeds of this Fund to cover eligible payments under the contract for the "**REPLACEMENT OF OBSOLETE & DETERIORATED CRAC UNITS SERVING RADAR AND AIR NAVIGATION FACILITIES AT AREA CONTROL CENTRE, JIAP – KARACHI**" with the reference of "**P216600**".

2. The **Jinnah International Airport - Pakistan Airports Authority (Pakistan Airports Authority (PAA))** invites sealed Bids from eligible Bidders for procurement of Works **(REPLACEMENT OF OBSOLETE & DETERIORATED CRAC UNITS SERVING RADAR AND AIR NAVIGATION FACILITIES AT AREA CONTROL CENTRE, JIAP – KARACHI)** described in the bidding documents on **EPADS v2.0**.

3. **Single Stage-Two Envelope** will be used by adopting **Least Cost Based Selection (LCBS)** Technique for the subject procurement, in line with the Public Procurement Rules, 2026 and any Regulations, Regulatory Guides, Procurement Guidelines or Instructions issued by the Authority from time to time.

4. All Bids must be accompanied by a Bid Security amount described in Bid Security Section in Bidding Document in the form of **Pay Order, Banker's Cheque, Call at Deposit, Demand Draft**. Or all bids must be accompanied by bid securing declaration in the format specified in the Bidding documents

5. E-Bidding documents, containing detailed terms & conditions, specifications and requirements etc. are available on **e-Pak Acquisition and Disposal System (EPADS)** at **https://epads.gov.pk/opportunities/federal/procurements/216600** for all the interested bidders registered on **EPADS v2.0**. Bidders are required to

get themselves registered on **EPADS v2.0** to participate in Bidding process.

6. The e-bids, prepared in accordance with the instructions in the e-Bidding documents, must be submitted through **EPADS v2.0** on or before **Tuesday, December 22, 2026 11:00 AM**. E-bids will be opened by using **EPADS v2.0** on the same day at **Tuesday, December 22, 2026 11:30 AM**. Manual submission of Bids shall not be entertained. Those vendor who have not yet registered on the new version of **EPADS v2.0**, may register themselves on **https://vendors.epads.gov.pk/**. A tutorial to explain the registeration process is available at **https://www.youtube.com/watch?v=MNW6T38v7tc.**

In terms of Rules 65 of Public Procurement Rules, 2026 Grievance Redressal Committee (GRC) is notified for the subject procurement and notification copy is available on the procuring agency's website and on Authority's website at (**www.ppra.org.pk**).

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Instructions to Bidders

A. INTRODUCTION

1. **Scope of Bid**

1.1. The Procuring agency/Employer (PA), as indicated in the Bid Data Sheet (BDS) invites Bids for the execution of Works as specified in the BDS and Section VI- Works Requirements. The name, identification, and number of lots (contracts) of this National/ International Competitive Bidding process are specified in the BDS.

2. **Source of Funds**

2.1. Source of funds as referred in Clause 2 of Bid Data Sheet.

3. **Eligible Bidders**

3.1. A bidder may be natural person, company or firm or public or semi-public agency of Pakistan or any foreign country, or any combination of them with a formal existing agreement (on Judicial Papers) in the form of a joint venture or consortium. In the case of a joint venture or consortium, all members shall be jointly and severally liable for the execution of the Contract in accordance with the terms and conditions of the Contract. The joint venture or consortium shall nominate a Lead Member as nominated in the BDS, who shall have the authority to conduct all business for and on behalf of any and all the members of the joint venture or consortium during the Bidding process, and in case of award of contract, during the execution of contract. Verifiable copy of the agreement that forms a joint venture, consortium or association shall be required to be submitted as part of the Bid.

Any bid submitted by the joint venture, shall indicate the part of proposed contract to be performed by each party and each party shall be evaluated (or post qualified if required) with respect to its contribution only, and the responsibilities of each party shall not be substantially altered without prior written approval of the Procuring Agency and in line with any instructions issued by the Authority.

(The limit on the number of members of JV or Consortium may be prescribed

in BDS, in accordance with the guidelines issued by the PPRA).

3.2. The invitation for bids is open to all prospective bidders subject to any provisions of incorporation or licensing by the respective national/ international incorporating agency or statutory body established for that particular trade or business. Procuring agencies shall specify the registration/licensing requirements for the foreign bidder keeping in view the requirement of that business.

3.3. A Bidder shall not have a conflict of interest. All Bidders found to have a conflict of interest shall be disqualified. A Bidders may be considered to have a conflict of interest with one or more parties in this Bidding process, if they:

3.3.1. are associated or have been associated in the past, directly or indirectly with a firm or any of its affiliates which have been engaged by the Procuring agency/Employer to provide consulting services for the preparation of design or technical specifications of the works that are the subject of the bid; or

3.3.2. have controlling shareholders in common; or

3.3.3. receive or have received any direct or indirect subsidy from any of them; or

3.3.4. have the same legal representative for purposes of this Bid; or

3.3.5. have a relationship with each other, directly or through common third parties, that puts them in a position to have access to information about or influence on the bid of another bidder, or influence the decisions of the Procuring agency/Employer regarding this Bidding process; or

3.3.6. Submit more than one bid in this bidding process.

3.4. A Bidder may be ineligible if –

3.4.1. he is declared bankrupt or, in the case of company or firm, insolvent;

3.4.2. payments in favor of the bidder is suspended in accordance with the judgment of a court of law other than a judgment declaring bankruptcy and resulting (in accordance with the national laws) in the total or partial loss of the right to administer and dispose of its property;

3.4.3. the bidder is convicted, by a final judgment of a Court of Law or relevant Professional Statuary Body, of any offence involving professional conduct;

3.4.4. The bidder is debarred/ blacklisted by a national level Procuring agency/Employer and hence debarred due to involvement in corrupt and fraudulent practices, or performance failure or due to breach of bid securing declaration.

3.5. As and when required, bidders shall provide to the Procuring agency/Employer evidence of their eligibility, proof of compliance with the necessary legal requirements to carry out the contract effectively.

3.6. Bidders shall submit proposal relating to the nature, conditions and modalities of sub-contracting wherever the sub-contracting of any elements of the contract is envisaged.

4. **Eligible Material and Equipment**

4.1. All the material and equipment to be mobilized under the contract shall have their origin in eligible source countries, and all expenditures made under the contract will be limited to such materials and equipment. For this purpose, ineligible countries are stated in the section-IV titled as “Eligible Countries”.

B. BIDDING DOCUMENTS

5. **Contents of Bidding Documents**

5.1. The scope of Works, bidding procedures, and terms and conditions of the contract are prescribed in the bidding documents. In addition to the Invitation for Bids, the bidding documents which should be read in

conjunction with any addenda issued in accordance with ITB 7.1 include:

Section I Instructions to Bidders (ITBs)

Section II Bid Data Sheet (BDS)

Section III Evaluation and Qualification Criteria

Section VI Bidding Forms

Section V Eligible Countries

Section VI Works Requirements

Section VII General Conditions of Contract (GC)

Section VIII Particular Conditions of Contract (PC)

Section IX Contract Forms

5.2. The bidder is expected to examine all instructions, forms, specifications, terms and conditions prescribed in the bidding documents. Failure to furnish all the information required in the bidding documents will be at the bidder's risk and may result in the rejection of his bid.

6. **Clarification of Bidding Document, Pre-bid Meeting**

6.1. A prospective bidder requiring any clarification of the bidding document may notify the Procuring agency/Employer through EPADS.

6.2. The Procuring agency/Employer shall respond to the request for clarification in accordance with Rule 38 of the Public Procurement Rules 2026.

6.3. Should the Procuring Agency deem it necessary to amend the BIDDING document as a result of a clarification, it shall do so following the procedure under ITB 7.

6.4. If indicated in the BDS, the bidder's designated representative is invited at the bidder's cost to attend a pre-bid meeting at the place, date and time mentioned in the BDS. During this pre-bid meeting, prospective bidders may request clarification of the schedule of requirement, the evaluation criteria or any other aspects of the bidding documents.

6.5. Minutes of the pre-bid meeting, if applicable, including the text of the questions asked by bidders, including those during the meeting (without identifying the source) and the responses given, together with any

responses prepared after the meeting will be uploaded on EPADS. Any modification to the bidding documents that may become necessary as a result of the pre-bid meeting shall be made by the Procuring agency/Employer exclusively through the use of an Addendum pursuant to ITB 7. Non-attendance at the pre-bid meeting will not be a cause for disqualification of a bidder.

6.6. The bidder is advised to visit and examine the Site of Works and its surroundings and obtain for itself on its own responsibility all information that may be necessary for preparing the bid and entering into a contract for construction of the Works. The costs of visiting the Site shall be at the bidder's own expense.

6.7. The bidder and any of its authorized personnel will be granted permission by the Procuring agency/Employer to enter upon its premises and lands for the purpose of such visit, but only upon the express condition that the bidder and its personnel will release and indemnify the Procuring agency/Employer from and against all liability in respect thereof, and will be responsible for death or personal injury, loss of or damage to property, and any other loss, damage, costs, and expenses incurred as a result of the inspection.

7. **Amendment of Bidding Documents**

7.1. The procuring agency may issue notification of any change, addition, modification or deletion in accordance with Rule 34 of the Public Procurement Rules 2026 i.e. Bidding Documents.

7.2. To give prospective bidders reasonable time in which to take an addendum/corrigendum into account in preparing their bids, the Procuring agency/Employer may, at its discretion, extend the deadline for the submission of bids:
Provided that the Procuring agency/Employer shall extend the deadline for submission of bid in pursuance of Rule 39 of the Public Procurement Rules 2026, i.e. Extension of time for submission of bids, if such an addendum is issued within last three (03) days of the bid submission deadline.

C. PREPARATION OF BIDS

8. **Language of Bid**

8.1. The bid prepared by the bidder, as well as all correspondence and documents relating to the bid exchanged by the bidder and the Procuring agency/Employer shall be written in the English language unless specified in the BDS. Supporting documents and printed literature furnished by the bidder may be in another language provided they are accompanied by an accurate translation of the relevant pages in the English language unless specified in the BDS, in which case, for purposes of interpretation of the bidder, the translation shall govern.

9. **Documents Comprising the Bids**

9.1. The Bid prepared by the Bidder shall constitute the following components: -

9.1.1. Documentary evidence established in accordance with ITB 9 that the material and equipment to be utilized by the Bidder for the executions of works are eligible material and equipment and conform to the Bidding Documents

9.1.2. Documentary evidence established in accordance with ITB 10 that the Bidder has been authorized to carry out the Construction works;

9.1.3. Documentary evidence established in accordance with ITB 10 that the Bidder is eligible and/or qualified for the subject Bidding process;

9.1.4. Letter of Bid and Schedules and Bid Prices completed in accordance with ITB 11 and 12;

9.1.5. Completed schedules as required, including priced Bill of Quantities in accordance with ITB 11.

9.1.6. Technical Proposal completed in all aspects in accordance with ITB 14.

9.1.7. Bid security or Bid Securing Declaration furnished in accordance with ITB 16;

9.1.8. Any other Document required in the BDS.

9.2. In addition to the requirements, Bids submitted by a JV shall include a copy of the Joint Venture Agreement entered into by all members. Alternatively, a letter of intent to execute a Joint Venture Agreement in the event of a successful Bid shall be signed by all members and submitted with the Bid, together with a copy of the proposed Agreement. Bids submitted by a joint venture of two (2) or more firms specified in Bidding Data, shall comply with the following requirements:

9.2.1. The bid, and in case of a successful bid, the Form of Contract Agreement shall be signed by all members so as to be legally binding on all partners;

9.2.2. One of the joint venture partners shall be nominated as being in-charge; and this authorization shall be evidenced by submitting a power of attorney signed by legally authorized signatories of all the joint venture partners.

9.2.3. For the partner-in-charge shall always be duly authorized to deal with the Employer regarding all matters related with and/or incidental to the execution of Works as per the terms and Conditions of Contract and in this regard to incur any and all liabilities, receive instructions, give binding undertakings and receive payments on behalf of the joint venture;

9.2.4. All partners of the joint venture shall at all times and under all circumstances be liable jointly and severally for the execution of the Contract in accordance with the Contract terms and a statement to this effect shall be included in the authorization mentioned under Sub-Para(b) above as well as in the Letter of Bid and in the Form of Contract Agreement (in case of a successful bid); and

9.2.5. copy of the agreement entered into by the joint venture partners shall be submitted with the bid stating the conditions under which it will function, its period of duration, the persons authorized to represent and obligate it and which persons will be directly responsible for due performance of the Contract and can give valid receipts on behalf of the

joint venture, the proportionate participation and corresponding duties & responsibilities of the several firms forming the joint venture, and any other information necessary to permit a full appraisal of its functioning. No amendments/modifications whatsoever in the joint venture agreement shall be agreed to between the joint venture partners without prior written consent of the Employer.

9.3. The Bidder shall furnish, as part of its Bid, all those documents establishing the eligibility in conformity to the terms and conditions specified in the Bidding Documents for all material, equipment and works which the Bidder proposes to execute.

9.4. The documentary evidence of conformity of the material, equipment and works to the Bidding Documents may be in the form of literature, drawings, and data, and shall consist of:

9.4.1. a detailed description of the work methodology, approach, schedule and resources to be mobilized at site;

9.4.2. any other procurement specific documentation requirement as stated in the BDS

9.4.3. The Bidder shall furnish in the Letter of Bid name(s) of the potential DAAB member(s) and attach their curriculum vitae. The list of potential DAAB member(s) proposed by the Employer (Contract Data 21.1) and by the Bidder (Letter of Bid) shall be subject to mutual review and agreement of the Parties in accordance with Sub-Clause 21.1 of the Conditions of Contract, and shall form the basis for the constitution of the DAAB in the event of Contract award.

10. **Documents Establishing Eligibility and Qualification of the Bidder**

10.1. The bidder shall furnish, as part of its bid, all those documents establishing the bidder’s eligibility to participate in the bidding process and/or its qualification to perform the contract if its bid is accepted.

10.2. The documentary evidence of the bidder’s eligibility to bid shall establish to the satisfaction of the Procuring agency/Employer that the

bidder, at the time of submission of its bid, is from an eligible country as defined in Section-V titled as “Eligible Countries”.

10.3. The documentary evidence of the bidder’s qualification to perform the contract if its bid is accepted shall establish to the satisfaction of Procuring agency/Employer that:

10.3.1. The bidder has the financial and technical capability necessary to perform the Contract, meets the qualification criteria specified in Section-III, Evaluation and Qualification Criteria and BDS.

10.3.2. In the case of a bidder not doing business within Pakistan, the bidder is or will be (if awarded the contract) represented by a local bidder (Joint Venture) in accordance with the PEC works bylaws, and in case of award of works such foreign firm is required to participate in the execution of works to carry out its obligations as prescribed in the Conditions of Contract and /or Technical Specifications.

10.3.3. That the bidder meets the qualification criteria listed in Section-III, Evaluation and Qualification Criteria and BDS.

11. **Letter of Bid and Schedules**

11.1. The Bidder shall fill the Form of Bids furnished in the bidding documents. The Bids Form must be completed without any alterations to its format and no substitute shall be accepted.

12. **Bid Prices**

12.1. The bid prices quoted by the bidder in the Bidding Forms, Bill of Quantities and in the Schedule to Bid, shall conform to the requirements specified below or exclusively mentioned hereafter in the bidding documents.

12.2. The bidder shall fill in rates and prices for all items of the Works described in the Bill of Quantities. If a Price Schedule shows items listed but not priced, their prices shall be construed to be included in the prices of other items in the Bill of Quantities and will not be paid for separately by the

Procuring agency/Employer.

12.3. The Bid price to be quoted in the Form of Bid in accordance with ITB 11 shall be the total price of the bid.

12.4. Unless otherwise specified in the BDS and the Contract, the rates and prices quoted by the bidder are subject to adjustment during the performance of the Contract in accordance with the provisions of the Conditions of Contract.

12.5. If so specified in ITB 1.1, bids may be invited for individual lots (contracts) or for any combination of lots (packages).

12.6. Prices quoted by the Bidder shall either be fixed or adjustable during the Bidder’s performance of the contract if specified in the BDS

12.7. All duties, taxes, and other levies payable by the Contractor under the Contract, or for any other cause, as of the date twenty-eight (28) days prior to the deadline for submission of bids, shall be included in the rates and prices and the total bid price submitted by the bidder.

13. **Currencies of Bid and Payment**

13.1. The unit rates and the prices shall be quoted by the Bidder entirely Pakistani Rupees. A Bidder expecting to incur expenditures in other currencies for inputs to the Works supplied from outside the Employer’s country (referred to as the “Foreign Currency Requirements”) shall indicate in Table III of Schedule-A to Bid the proportion of the Bid Price (excluding Provisional Sums) needed by him for the payment of such Foreign Currency Requirements; in such case the unit rates and the prices shall be quoted by the Bidder in Equivalent Pakistani Rupees. Comparison of Bids and tie of Bid shall be treated in accordance with the Public Procurement rules 2026, rule no. 42.

14. **Documents Comprising the Technical Proposal**

14.1. The bidder shall furnish a Technical Proposal including a statement of work methods, equipment, personnel, schedule and any other information as stipulated in Section IV – Bidding Forms, in sufficient detail to

demonstrate the adequacy of the bidder's proposal to meet the work requirements and the completion time.

15. **Bid Validity Period**

15.1. Bids shall remain valid for the period specified in the BDS after the bid submission deadline prescribed by the Procuring agency/Employer. A bid valid for a shorter period shall be rejected by the Procuring agency/Employer as non-responsive. The period of bid validity will be determined from the complementary bid securing instrument i.e. the expiry period of bid security or bid securing declaration as the case may be.

15.2. Under exceptional circumstances, prior to the expiration of the initial Bids/Bid validity period, the Procuring Agency may request the Bidders' consent to an extension of the period of validity of their Bids/Bid. Such request for extension of the period of bid validity shall be carried out in accordance with Rule 37 of the Public Procurement Rules, 2026.

16. **Bid Security or Bid Securing Declaration**

16.1. Pursuant to ITB 10.1 unless otherwise specified in the BDS, the bidder shall furnish as part of its bid, a Bid Security in accordance with Rule 36 of the Public Procurement Rules, 2026 in the amount and currency specified in the BDS or Bid Securing Declaration as specified in the BDS in the format provided in Section IV (Bidding Forms).

In case Procuring agency/Employer is inviting bids in lots / packages, the bidder shall be required to submit his bid security against the respective lot/ package for which he is submitting his bid.

Until the development of functionality of auto verification of financial instrument in EPADS, the scanned copy of bid security or bid securing declaration, as the case may be, shall be uploaded on E-PADS whereas the original instrument to be submitted to the procuring agency before closing of bid submission deadline, failing which shall result in rejection of Bid as non-responsive.

16.2. The Bid Security shall be denominated in the local currency or in another freely convertible currency, and it shall be in the form specified in

the **BDS** which shall be in any of the following:

16.2.1. A bank guarantee, an irrevocable letter of credit issued by a Scheduled bank in the form provided in the Bidding Documents or another form acceptable to the Procuring agency/Employer and valid for twenty-eight (28) days beyond the end of the validity of the Bid. This shall also apply if the period for Bid Validity is extended. In either case, the form must include the complete name of the bidder;

16.2.2. A cashier's or certified cheque; or

16.2.3. Another security as indicated in the **BDS**.

16.3. The Bid Security or Bid Securing Declaration shall be in accordance with the Form of the Bid Security or Bid Securing Declaration included in Schedule to Bid or another form approved by the Procuring agency/Employer prior to the bid submission.

16.4. The Bid Security shall be payable promptly upon written demand by the Procuring agency/Employer in case any of the conditions listed in ITB 16.9 are invoked.

16.5. Any bid not accompanied by a Bid Security or Bid Securing Declaration in accordance with ITB 16.1 or 16.3 shall be rejected by the Procuring agency/Employer and shall be declared as non-responsive bid, pursuant to ITB 25.

16.6. Unsuccessful bidders' Bid Security will be discharged or returned as promptly as possible, however in no case later than thirty (30) days after the expiration of the period of Bid Validity prescribed by the Procuring agency/Employer pursuant to ITB 15. The Procuring agency/Employer shall make no claim to the amount of the Bid Security, and shall promptly return the Bid Security document, after whichever of the following that occurs earliest:

16.6.1. The expiry of the Bid Security;

16.6.2. The entry into force of a procurement contract and the provision of a performance security (or guarantee), for the performance of the contract if such a security (or guarantee), is required by the Biding documents;

16.6.3. The rejection by the Procuring agency/Employer of all Bids;

16.6.4. The withdrawal of the bid prior to the deadline for the submission of bids, unless the biding documents stipulate that no such withdrawal is permitted.

16.7. The successful bidder’s Bid Security will be discharged upon the bidder signing the contract pursuant to ITB 38, or furnishing the performance security (or guarantee), pursuant to ITB 39.

16.8. The Bid Security may be forfeited or the Bid Securing Declaration executed:

16.8.1. if a Bidder:

16.8.1.1. Withdraws its Bid during the period of Bid Validity as specified by the Procuring agency/Employer, and referred by the bidder on the Form of Bid except as provided for in ITB 15.2; or

16.8.2. In the case of a successful bidder, if the bidder fails:

16.8.2.1. to sign the contract in accordance with ITB 38; or

16.8.2.2. to furnish performance security (or guarantee) in accordance with ITB 39.

16.9. In case of Bid Security issued by the foreign bank is allowed by the Procuring agency/Employer, the same should be counter guaranteed by a corresponding bank in Pakistan. Furthermore, in case of joint venture, it should be in the name of Joint venture to ensure joint responsibility. In case the JV is not legally constituted at the time of bid submission, the bid security or bid securing declaration shall be in the names of Joint Venture or Lead/either Firm of the JV or in ratio of shares of the individual JV partners, submitting the bid.

17. **Withdrawal of Bids**

17.1. The Bidder shall prepare and submit Bids through EPADS with due diligence after carefully reading all the terms and condition before Bid submission deadline

18. **Format and Signing of Bid**

18.1. The Bidder shall prepare and submit Bids through EPADS with due diligence after carefully reading all the terms and condition before bid submission deadline.

D. SUBMISSION OF BIDS

20. **Submission of Bids through EPADS v2.0**

20.1. All bids shall be submitted through EPADS v2.0.

21. **Deadline for Submission of Bids**

21.1. All bids shall be received through **EPADS v2.0** not later than bid submission deadline as specified in the **BDS**.

21.2. The Procuring agency/Employer may, under exceptional circumstances and at its discretion, extend the deadline for the submission of bids, pursuant to Rule 39 of the Public Procurement Rules, 2026. Extension of Time for submission of bid, by amending the Bidding Documents in accordance with ITB 7, in which case all rights and obligations of the Procuring agency/Employer and bidders previously subject to the deadline will thereafter be subject to the new deadline.

22. **Withdrawal, Substitution and Modification of Bids**

22.1. A bidder may substitute or modify his bid after it has been submitted, provided that written notice of the substitution or modification of the bid, is received by the Procuring agency/Employer prior to the deadline for submission of bids.

22.2. Revised bid may be submitted after the substitution or modification made in the original bid in accordance with the provisions referred in **ITB 20.1**.

E. OPENING AND EVALUATION OF BIDS

23. **Opening of Bids**

23.1. The Procuring Agency will open bids in accordance with Rule 40 of the Public Procurement Rules, 2026 and as specified in the BDS.

24. **Confidentiality**

24.1. Information relating to the examination, clarification, evaluation and comparison of bids and recommendation of contract award shall not be disclosed to bidders or any other persons not officially concerned with such process until the time of the announcement of the respective evaluation report.

25. **Clarification of Bids**

25.1. Clarification of Bidding Documents shall be carried out in accordance with Rule 38 of the Public Procurement Rules, 2026.

25.2. The alteration or modification in the bid which in any case affect the following parameters will be considered as a change in the substance of a bid:

25.2.1. evaluation & qualification criteria;

25.2.2. required scope of work;

25.2.3. contract price;

25.2.4. all securities requirements;

25.2.5. tax requirements;

25.2.6. terms and conditions of bidding documents.

25.2.7. change in the ranking of the bidder

26. **Preliminary Examination of Bids**

26.1. Prior to the detailed evaluation of bids, the Procuring agency/Employer will determine whether each bid:

26.1.1. meets the eligibility criteria defined in **ITB 3** and **ITB 4**;

26.1.2. has been prepared as per the format and contents defined by the Procuring agency/Employer in the bidding documents;

26.1.3. has been properly signed;

26.1.4. is accompanied by the required securities; and

26.1.5. is substantially responsive to the requirements of the bidding documents.

The Procuring agency/Employer's determination of a bid's substantial responsiveness will be based on the contents of the bid itself.

26.2. A substantially responsive Bid is one which conforms to all the terms, conditions, and specifications of the Bidding Documents, without material deviation or reservation. A material deviation or reservation is one that: -

26.2.1. affects in any substantial way the scope, quality, or performance of the Works;

26.2.2. limits in any substantial way, inconsistent with the bidding documents, the Procuring agency/Employer's rights or the bidders' obligations under the Contract; or

26.2.3. if rectified, would affect unfairly the competitive position of other bidders presenting substantially responsive bids.

26.3. The Procuring agency/Employer will confirm that the documents and information specified under ITB 9, 10 and 11 have been provided in the bid. If any of these documents or information is missing, or is not provided in accordance with the Instructions to Bidders, the bid shall be rejected.

26.4. The Procuring agency/Employer may waive-off any minor informality, nonconformity, or irregularity in a bid which does not constitute a material deviation, provided such waiver does not prejudice or affect the relative ranking of any Bidder.

Explanation: A minor informality, non-conformity or irregularity is one that is merely a matter of form and not of substance. It also pertains to some of the invitation that can be corrected or waived without being prejudicial to other bidders. The defect or variation is immaterial when the effect on quantity, quality, or delivery is negligible when contrasted with the total cost or scope of the works. The Procuring agency/Employer either shall give the bidder an opportunity to cure any deficiency resulting from a minor informality or irregularity in a bid or waive the deficiency, whichever is advantageous to the Procuring agency/Employer. Examples of minor informalities or irregularities include failure of a bidder to –

26.4.1. *Submit the number of copies of signed bids required by the invitation;*

26.4.2. *Furnish required information concerning the number of its employees;*

26.4.3. *the firm submitting a bid has formally adopted or authorized, before the date set for opening of bids, the execution of documents by typewritten, printed, or stamped signature and submits evidence of such authorization and the bid carries such a signature.*

26.5. Provided that a Technical Bid is substantially responsive, the Procuring agency/Employer may request the bidder to submit the necessary information or documentation, within a reasonable period of time, to rectify nonmaterial nonconformities or omissions in the Technical Bid related to documentation requirements. Requesting information or documentation on such nonconformities shall not be related to any such aspect of the technical Proposal linked with the ranking of the bidders. Failure of the bidder to comply with the request may result in the rejection of its bid.

26.6. Provided that a Technical Bid is substantially responsive, the Procuring agency/Employer shall rectify quantifiable nonmaterial nonconformities or

omissions related to the Financial Proposal. To this effect, the Bid Price shall be adjusted, for comparison purposes only, to reflect the price of the missing or nonconforming item or component.

26.7. If a bid is not substantially responsive, it will be rejected by the Procuring agency/Employer and may not subsequently be evaluated for complete technical responsiveness.

27. **Examination of Terms and Conditions; Technical Evaluation**

27.1. The Procuring agency/Employer shall examine the bid to confirm that all terms and conditions specified in the **GC** and the **PC** have been accepted by the bidder without any material deviation or reservation.
For this purpose:
“Deviation” means departure from the requirements specified in the Bidding Document.
“Reservation” means setting of limiting conditions or withholding from complete acceptance of the requirements specified in the Bidding Document.

27.2. The Procuring agency/Employer shall evaluate the technical aspects of the bid submitted in accordance with ITB 28, to confirm that all requirements specified in Section VI – Works Requirement, Technical Specifications of the Bidding Documents have been met without material deviation or reservation.

27.3. If after the examination of the terms and conditions and the technical evaluation, the Procuring agency/Employer determines that the bid is not substantially responsive in accordance with ITB 25, it shall reject the bid.

28. **Correction of Arithmetic Errors**

28.1. Bids determined to be substantially responsive will be checked for any arithmetic errors. Errors will be corrected as follows: -

28.1.1. if there is a discrepancy between unit prices and the sub-total price that is obtained by multiplying the unit price and quantity, the unit

price shall prevail, and the sub-total price shall be corrected, unless in the opinion of the Procuring agency/Employer there is an obvious misplacement of the decimal point in the unit price, in which the total price as quoted shall govern and the unit price shall be corrected;

28.1.2. Subtraction of sub-totals, the sub-totals shall prevail, and the total shall be corrected; and

28.1.3. where there is a discrepancy between the amounts in figures and in words, the amount in words will govern.

28.1.4. Where there is discrepancy between grand total of price schedule and amount mentioned on the Form of Bid, the amount referred in Price Schedule shall be treated as correct subject to elimination of other errors.

28.2. The amount stated in the Bid will, be rectified by the Procuring agency/Employer in accordance with the above procedure for the correction of errors and, with, the concurrence of the bidder, shall be considered as binding upon the bidder. If the bidder does not accept the corrected amount, its bid shall be rejected after forfeiture of Bid Security or execution of the Bid Securing Declaration, as the case may be, in accordance with **ITB 39.3**.

29. **Conversion to Single Currency**

29.1. Comparison of bids quoted in different currencies and conversion of bids into a single currency shall be carried out in accordance with the Public Procurement Rule 2026, rule no. 42(2) as specified in the BDS

30. **Evaluation of Bids**

30.1. The Procuring agency/Employer shall evaluate and compare only the bids determined to be substantially responsive, pursuant to **ITB 25**.

30.2. In evaluating the Technical Proposal of each Bid, the Procuring agency/Employer shall use the criteria and methodologies listed in the BDS and in terms of works requirement. No other evaluation criteria or methodologies shall be permitted.

30.3. The Procuring agency/Employer's evaluation of a bid will take into account:

30.3.1. the bid price, excluding provisional sums and the provision, if any, for contingencies in the summary bill of quantities, but including day work items, where priced competitively;

30.3.2. converting the amount resulting from applying above, if relevant, to a single currency in accordance with ITB 27;

30.4. The estimated effect of the price adjustment provisions of the Conditions of Contract, applied over the period of execution of the Contract, shall not be taken into account in bid evaluation.

30.5. If these bidding documents allow bidders to quote separate prices for different lots, and the award to a single bidder of multiple lots, the methodology of evaluation to determine the lowest evaluated lot combinations in the Form of Bid, is specified in the **BDS**.

30.6. If the bid, which results in the Evaluated Bid Price (Successful Bid), is seriously unbalanced or front loaded in the opinion of the Employer, the Employer may require the Bidder to produce detailed price analyses for any or all items of the Bill of Quantities, to demonstrate the internal consistency of those prices with the construction methods and schedule proposed. After evaluation of the price analyses, taking into consideration the schedule of estimated Contract payments, the Employer may require that the amount of the performance security be increased at the expense of the Bidder to a level sufficient to protect the Employer against financial loss in the event of default of the successful Bidder under the Contract.

Explanation:

"Unbalanced" or "front-loaded" bids consist of deliberately submitting bids with artificially high prices or unit rates for the early stages of a construction project, offset by artificially low prices or unit rates for the later stages of the project, to improve the contractor's cash flow.

31. **Domestic Preference**

31.1. If the **BDS** so specifies, the Procuring agency/Employer will grant a margin of preference to the domestic contractor in line with the rules, regulations, regulatory guides or instructions issued by the Authority from time to time.

32. **Determination of Successful Bid**

32.1. The Procuring agency/Employer shall compare the evaluated bids in accordance with the predefined bidding procedure, of all substantially responsive bids to determine the Successful bidder.

33. **Qualification of Bidder**

33.1. The Procuring agency/Employer shall determine to its satisfaction whether the bidder is substantially responsive and whose bid is declared as Successful bid either continues to meet (if prequalification applies) or meets (if post-qualification applies) the qualifying criteria specified in Evaluation and Qualification Criteria.
Note: In case of international bidding, the parameters for incorporation or licensing within Pakistan may be fulfilled as part of post qualification.

33.2. The determination shall be based upon an examination of the documentary evidence of the bidder’s qualifications submitted by the bidder, pursuant to **ITB 10**.

33.3. Prior to contract award, the Procuring agency/Employer will verify that the successful bidder (including each member of a JV) is not blacklisted/debarred. The Procuring agency/Employer will conduct the same verification for each sub-contractor proposed by the successful bidder.

34. **Sub-Contractors**

34.1. The bidder shall provide details regarding any specialized sub-contractor to the Procuring agency/Employer. In case change of sub-contractors, the bidder shall promptly notify the Procuring agency/Employer and obtain approval for replacement of sub-contractors.

34.2. Bidders may propose sub-contracting up to the percentage of total value of contracts or the volume of works as specified in the **BDS**.

35. **Abnormally Low Financial Bid**

35.1. A procuring Agency may reject abnormally low bids in accordance with the Public Procurement Rules 2026 rule no. 43. The decision of the Procuring agency/Employer to reject a bid and reasons for the decision shall be recorded in the procurement proceedings and promptly communicated to the bidder concerned. Moreover, the Procuring agency/Employer shall not incur any liability solely by rejecting abnormally bid

Guidance for Procuring agency/Employer:

An abnormally low Bid means, a Bid containing Bid price that is less or lesser than twenty five percent (25%) of the Procuring agency/Employer's estimate.

35.2. The Procuring agency/Employer will determine to its satisfaction whether the bidder that is selected as having submitted the successful bid is qualified to perform the contract satisfactorily, in accordance with the criteria listed in **ITB 10.**

35.3. The determination will take into account the bidder's financial and technical capabilities. It will be based upon an examination of the documentary evidence of the bidder's qualifications submitted by the bidder, pursuant to **ITB 10**, as well as such other information as the Procuring agency/Employer deems necessary and appropriate. Factors not included in these bidding documents shall not be used in the evaluation of the bidders' qualifications.

35.4. Procuring agency/Employer may seek "Certificate for Independent Price Determination" from the bidder and the results of reference checks may be used in determining award of contract.

Explanation: The Certificate shall be furnished by the bidder. The bidder shall certify that the price is determined keeping in view of all the essential aspects such as raw material, its processing, value addition, optimization of resources due to economy of scale, transportation, insurance and margin of profit etc.

35.5. An affirmative determination will be a prerequisite for award of the contract to the bidder. A negative determination will result in rejection of the bidder’s bid, in which event the Procuring agency/Employer will proceed to the next ranked bidder to make a similar determination of that bidder’s capabilities to perform satisfactorily.

F. AWARD OF CONTRACT

36. **Criteria of Award**

36.1. Subject to **ITB 34 and 35**, the Procuring agency/Employer will award the Contract to the bidder whose bid has been determined to be substantially responsive to the bidding documents and who has been declared as Successful Bidder, provided that such bidder has been determined to be:

36.1.1. eligible in accordance with the provisions of **ITB 3**;

36.1.2. is determined to be qualified to perform the Contract satisfactorily; and

36.1.3. Successful negotiations have been concluded, if any.

37. **Negotiations**

37.1. The Committee of the Procuring agency/Employer may negotiate with the Successful Bidder in accordance with Public Procurement Rules 2026 rule no. 26(3).

38. **Procuring agency's Right to reject All Bids**

38.1. The procuring agency has the right to reject all bids in accordance with Rule 45 of the Public Procurement Rules, 2026. However, the Authority (i.e. **PPRA**) may call from the Procuring agency/Employer the justification of those grounds.

39. **Notification of Award**

39.1. The procuring agency shall announce and publish the evaluation result in accordance with Rule 48 of the Public Procurement Rules, 2026.

39.2. Where no complaints have been lodged, the bidder whose bid has been accepted will be notified of the award by the Procuring agency/Employer prior to expiration of the bid validity period through EPADS. However, the Procuring agency/Employer shall not award any procurement contract at least for five (05) days after the announcement of final evaluation report. The notification letter (herein after and in the condition of the contract and contract form called “Letter of Acceptance” will specify the sum that the Procuring agency/Employer will pay the successful bidder in consideration for the execution and completion of the works as prescribed by the Contract (hereinafter and in the Contract called the "Contract Price).

39.3. The notification of award will constitute the formation of the Contract, subject to the bidder furnishing the Performance Security (or guarantee) in accordance with **ITB 39** and signing of the contract in accordance with **ITB 38**.

39.4. Upon the successful bidder’s furnishing of the performance security (or guarantee) pursuant to **ITB 39**, the Procuring agency/Employer will promptly notify each unsuccessful bidder, the name of the successful bidder and the Contract amount and will discharge the Bid Security or Bid Securing Declaration of the bidder(s) pursuant to **ITB 16**.

40. **Signing of Contract**

40.1. Promptly after notification of award, Procuring agency/Employer shall send the successful bidder the draft agreement, incorporating all terms and conditions as agreed by the parties to the contract.

40.2. Immediately after the Redressal of grievance by the **GRC**, and after fulfillment of all conditions precedent of the Contract Form, the successful bidder and the Procuring agency/Employer shall sign the contract.

40.3. Where no formal signing of a contract is required, work order issued to the bidder shall be construed to be the contract.

41. **Performance Security (or Guarantee)**

41.1. After the receipt of the Letter of Acceptance, the successful bidder, within the specified time, shall deliver to the Procuring agency/Employer a Performance Guarantee in the amount and in the form stipulated in the BDS and PCC, denominated in the type and proportions of currencies in the Letter of Acceptance and in accordance with the Conditions of Contract.

41.2. If the Performance Guarantee is provided by the successful bidder and it shall be in the form specified in the BDS which shall be in any of the following:

41.2.1. certified cheque, cashier's or manager's cheque, or bank draft;

41.2.2. irrevocable letter of credit issued by a scheduled bank of Pakistan or in the case of an irrevocable letter of credit issued by a foreign bank, the letter shall be confirmed or authenticated by a scheduled bank of Pakistan;

41.2.3. bank guarantee confirmed by a reputable local bank or, in the case of a successful foreign bidder, bonded by a foreign bank; or

41.2.4. surety bond callable upon demand issued by any reputable surety or insurance company.
Any Performance Guarantee submitted shall be enforceable in Pakistan.

41.3. Failure of the Most Advantageous Bidder to comply with the requirement of **ITB 40** shall constitute sufficient grounds for the annulment of the award and forfeiture of the Bid Security or declare blacklisted (in case bid securing declaration is submitted) in which event the Procuring agency/Employer may make the award to the next most advantageous bidder or reinitiate the procurement process afresh (as a case may be).

42. **Advance Payment**

42.1. Advance payment will be provided to the bidder in percentage and in the manner as agreed by the both parties in terms of Conditions of the Contract.

42.2. The Procuring agency/Employer will provide an advance payment as stipulated in the Conditions of Contract, subject to a maximum amount, as stated and/or Conditions of the Contract. The advance payment request shall be accompanied by an advance payment security (guarantee) in the form provided in Section X. For the purpose of receiving the advance payment, the bidder shall make and estimate of, and include in its bid, the expenses that will relate to the purchase of equipment, machinery, materials, and on the engagement of labor during the first month beginning with the date of the Procuring agency/Employer's "**Notice to Commence**" as specified in the **PCC**.

43. **General Performance of the Bidders**

43.1. The Procuring agency/Employer reserves the right to obtain information regarding performance of the bidders on their previously awarded contracts / works. The Procuring agency/Employer may seek information / report from the previous employer for consideration. However, the Procuring agency/Employer shall incorporate such parameters in the evaluation criteria and accordingly decide the fate of the bid submitted.

44. **Corrupt & Fraudulent Practices**

44.1. Procuring agencies (including beneficiaries of Government funded projects and procurement) as well as Bidders/Suppliers/Contractors under Government financed contracts, observe the highest standard of ethics during the procurement and execution of such contracts, and will avoid to engage in any corrupt and fraudulent practices.

G. GRIEVANCE REDRESSAL & COMPLAINT REVIEW MECHANISM

45. **Grievance Redressal**

45.1. Grievance Redressal shall be carried out in accordance with Rule 65 of the Public Procurement Rules, 2026 i.e. Redressal of grievances by the procuring agency and "Redressal of Grievances Regulations 2021".

H. MECHANISM OF BLACKLISTING

46. **Mechanism of Blacklisting**

46.1. The Procuring agency/Employer shall proceed Blacklisting of Bidders/Contractors in accordance with Rule 25 of the Public Procurement Rules, 2026 i.e. Blacklisting and “Blacklisting and Debarment of Bidders or Contractors Regulations 2024.

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Bid Data Sheet

Bids Data Sheet (BDS)

The following specific data for the procurement of Goods to be procured shall complement, supplement, or amend the provisions in the Instructions to Bidders (ITB). Whenever there is a conflict, the provisions herein shall prevail over those in ITB.

BDS Clause Number	**ITB Number**	**Amendments of, and Supplements to, Clauses in the Instruction to Bidders**
A. Introduction		
1	**1.1**	Name of Procuring Agency:**Jinnah International Airport - Pakistan Airports Authority (Pakistan Airports Authority (PAA))** The subject of procurement is:**REPLACEMENT OF OBSOLETE & DETERIORATED CRAC UNITS SERVING RADAR AND AIR NAVIGATION FACILITIES AT AREA CONTROL CENTRE, JIAP – KARACHI** Expected commencement date: **Monday, March 1, 2027**
2.	**2.1**	Financial year for the operations of the Procuring Agency:**2026-27** Name and identification number of the Contract: **P216600**
3.	**3.1**	JV/Consortium or AssociationAllowed: **Yes** Number of JV/Consortium Members: **3**
B. Bidding Documents		

4.	**6.2 & 6.4**	The Bidders may seek clarifications through **EPADS v2.0**: Clarification Date: Saturday, December 19, 2026 Pre-Bid Meeting: Monday, December 14, 2026 11:00 AM Venue: Office of the Additional Director ES (E&M) - JIAP Room # 6021 at Jinnah International Airport Karachi
5.	**7.2**	Any addendum, in case issued, shall be published on **Jinnah International Airport - Pakistan Airports Authority (Pakistan Airports Authority (PAA))** website and on **EPADS v2.0**.

C. Preparation of Bids

6.	**8.1**	List of documents required along with the bid: No
7.	**9.1**	The qualification criteria to establish the supply / production capability of the bidder. *see Eligibility Criteria*
8.	**11.2**	**Works and Their relateddocuments:** *See section Required Scope of Work*
9.	**11.1**	Price schedule will be provided according to the format defined and acquired. *see section price schedule.*
10.	**11.4**	**Specifications:** *see section of specifications.*

11.	**11.5 & 13.5**	The price shall be **Fixed**. The bid price shall be adjusted in accordance with Appendix provided – Formula for Price Adjustment.
12.	**14.1**	Currency of the Bids shall be : **PKR**
13.	**16.1**	The Bids/Bid Validity period shall be: **120 Days**
14.	**17.1**	The amount of Bid Security shall be as defined in Bid Security Section for items and lots given in **BDS 6**
15.	**17.2**	The Bid Security shall be in the form of: **Pay Order, Banker's Cheque, Call at Deposit, Demand Draft**
16.	**15.1**	Alternative Bids to the requirements of the bidding documents willnot be permitted.
D. Submission of Bids		
17.	**18.1 & 21.1**	Bid shall be submitted online on EPADS v2.0 whereas hard copy of the bid security should be submitted to the following; **Jinnah International Airport Karachi, Airport Sub-Division, Malir (District), Karachi (Division), Sindh (Province).** Bids that are not submitted on EPADS v2.0 shall be disqualified. The deadline for Bids submission is: **Tuesday, December 22, 2026 11:00 AM**

E. Opening and Evaluation of Bids

18.	**24.1**	The Bids opening shall take place on **EPADS v2.0**. Day *: **Tuesday*** Date:***December 22, 2026*** Time *: **11:30 AM***
19.	**30.2**	Selection technique adopted will be: **Least Cost Based Selection (LCBS)** *see Evaluation Criteria*

F. Award of Contract

20.	**41.1 & 41.2**	The Performance guarantee shall: **5.00%**. The Performance Guarantee shall be acceptable in the form of:**Pay Order, Banker's Cheque, Call at Deposit, Bank Guarantee, Demand Draft**
21.	**45.1**	Arbitrator shall be appointed by mutual consent of the both parties.

G. Review of Procurement Decisions

22.	**37**	Grievance against this procurement shall be submitted online on EPADS v2.0.

Eligibility Criteria

All Active Taxpayers shall be eligible to participate in the procurement process, unless expressly excluded or otherwise restricted under the Eligibility Criteria specified by the Procuring Agency.

Required Registration
NADRA CITIZENSHIP (CNIC/NICOP) FBR (NTN) PEC

Eligibility Criteria	Document
Attach & Upload Original Bid Security furnished for Rs. 1.5 million in accordance with General instructions, Invitation to Bids and Instructions to Bidders. Note: The physical financial instrument (signed and stamped by bidder on back) shall reach the office of Divisional Engineer ES (E&M) – JIAP in envelope before opening of bids & Original Bid Security must be uploaded electronically on EPADS.	Yes
Attached & upload scanned copy of CNIC of the bidder. Note : Dully attested (By Notary Public Oath Commissioner). Upload a clear and legible copy	Yes
Attach & Upload Certificate of incorporation / Memorandum & Article of Association or Partnership Deed / Sole Proprietorship etc. Note: Dully attested (by notary public/ oath commissioner) document shall be acceptable. Upload a clear and legible copy of the applicable	Yes

Attach & Upload Joint Venture Agreement (if applicable). In case of foreign firm/company, Joint Venture with Pakistani firm and registration with SECP OR give an undertaking for non-applicability Note: Dully attested (by notary public/ oath commissioner) document shall be acceptable, upload a clear and legible copy of the applicable documents	Yes
Attach & Upload Affidavit on non-judicial stamp paper valuing PKR : 500/- to the effect that the firm has not been blacklisted by any Government, Semi Government and Autonomous Body. Note: Dully attested (by notary public/ oath commissioner)	Yes
Attach & Upload Active Taxpayer Status (ATL) & NTN and Professional Tax Certificate (Valid//Updated). Note: Valid documents and dully attested (by notary public/ oath commissioner)	Yes
Attach & Upload Valid Certification/ License by the Pakistan Engineering Council (PEC) i.e. C-4 (or above) and relevant Specialization Codes i.e. ME-01. Note: Dully attested (by notary public/ oath commissioner)	Yes
Attach & Upload Power of Attorney (if applicable) on non-judicial stamp paper valuing PKR : 500/- Note: Dully attested (by notary public/ oath commissioner) OR give an undertaking for non-applicability	Yes
Each page of following documents to be signed and stamped by Authorized Representative of the Bidder, as detailed below: Annexure – A, Pakistan Airports Authority Contract Documents (including HSE Manual, Additional Instructions to bidders, PAA GCC and PAA SCC Annexure – B, Pakistan Airports Authority Forms i. Form of Agreement (page-xi) ii. Performance Bond Guarantee Appendix – C, iii. Mobilization Advance Guarantee Appendix – D iv. List of Bans Appendix – E	No
Refer to the Important Notes given below in the Eligibility Criteria for technical evaluation criteria (Annexure – C)	No

Evaluation Criteria

Least Cost Based Selection (LCBS)

Weightage

Technical Evaluation %
100

Technical Marks	100
Passing Marks	**85**
Technical Evaluation Criteria	
Compliance with technical compliance sheet (Appendix-I) The offered precision air conditioning (CRAC) unit. 16 TR. Upflow, ducted type, shall comply with requirements specified in the technical compliance sheet (TCS). The bidder shall submit the duly completed and signed technical compliance sheet (Appendix-I), supported by relevant OEM/manufacture technical literature and documentary evidence wherever specified therein. (Appendix). [Note: Full compliance to the part - I key performance requirements of TCS is mandatory criteria for conducting any further evaluation] (Qualitative)(Doc Required)	15

OEM Manufacturing Facility and Certification The shall explicitly state the country of origin (COO) and provide the complete physical address of the manufacturing facility where the offered units will be manufactured and assembled. The offered equipment shell be manufactured and assembled at an OEM-owned manufacturing facility third-party contract manufacturing. Original design manufacturing (ODM) and white-label manufacturing shall not be acceptable. The manufacturing facility shall hold valid ISO 9001 and ISO 14001 certifications. With scope of certification convering the relevant: manufacturing activities. Full 15 marks shall be awarded upon submission of: • Declared country or origin: • Complete physical address of the manufacturing facility: • Valid ISO 9001 certificate; and • Valid ISO 14001 certificate, With the certificates being verifiable and applicable to the declared manufacturing facility. Document Required: OEM/Manufacturing declaration and valid ISO certificates. (Qualitative)(Doc Required)	15
Operational Reliability and Design Life The offered equipment shall be designed for continuous 24/7/365 operation in critical aviation Radar Station application. The compressors and fans incorporated in the offered unit shall I have a manufacturing/OEM-declared design or expected operating life of not less then 50,000 operating hours, based on the manufacture’s published technical documentation or formal certification. Full 10 marks shall be awarded upon submission of OEM/manufacturer documentation explicitly confirming compliance with the above requirement. Documents Required: OEM certificate, technical literature or manufacture’s documented design-life statement (Qualitative)(Doc Required)	10

International Installation Experience The offered CRAC product model series shall have a documented installed base at least 500 units across at least three (03) geographically distinct continents, excluding installations within Pakistan. For the purpose of this criterion, an installation shall mean a completed and operational installation of the offered CRAC product:/model series. Full 10 marks shall be awarded where the bidder demonstrate a documents installed base of 500 or more units meeting the above requirement. Where the documented installed base is less than 500 units, 01 mark shall be deducted for every shortfall of five (05) units or pan: thereof below 500 units, subject to a maximum deduction of the marks allocated to this criterion. The deduction should be calculated against the total qualifying installed base not separately for each continent. Documents Required: OEM certificate/declaration supported by verifiable project references, installed-base statement or other documentary evidence acceptable to PAA. (Quantitative)(Doc Required) 500 units **(10)** 495 units **(9)** 490 units **(8)** 485 units **(7)** 480 units **(6)** 475 units **(5)** 470 units **(4)** 465 units **(3)** 460 units **(2)** 455 units **(1)**	10

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Installations within Pakistan The offered CRAC product/model series shall have at least three (03) successfully completed and operational installations Pakistan, each having a cooling capacity of SO kW or greater, critical infrastructure facilities such as telecommunication facilities, data centers or aviation facilities, completed within the ten (10) years proceedings the date of submission of bids. For each verified qualification installation below three (03), 05 marks shall be deducted. Documents Required: work orders/Contracts, completion certificates, client certificates or other verifiable documentary evidence identifying the CRAC product/model series, cooling capacity, location, client and data of completion (Quantitative)(Doc Required) 03 **(10)** Below(03 years) **(5)**	10
Availability of Spare Parts The OEM shall guarantee the availability of genuine spare parts for the offered CRAC units for minimum period of ten (10) years from the date expiry of the defect liability period (DLP). Full 05 marks shall be awarded upon submission of an OEM undertaking confirming compliance with this requirement. Documents Required: OEM/undertaking/Certificate (Quantitative)(Doc Required)	5
Local After-Sales Service Facility The OEM or its duly authorized representative shall have an operational services/workshop facility within Karachi, Pakistan adequately equipped and staffed to provider sales support, including inspection, troubleshooting, repair and maintenance services for the offered CRAC equipment. Where the facility is operated by an authorized representative, the bidder shall submit valid documentary evidence of OEM authorization. Documents Required: facility details, photographs/evidence of available service infrastructure and valid OEM authorization, where applicable (Quantitative)(Doc Required)	10
Bidders Relevant Experience The bidder shall have a minimum of five (05) years of demonstrable experience in the installation. Repair and maintenance or precision air conditioning/CRAC systems or equivalent large scale HVAC system. The experience shall be supported by relevant work orders/contracts and completion certificates or client certificates. Documents Required: work order contract and completion client certificates demo starting the required experience. (Quantitative)(Doc Required)	10

OEM Experience in Manufacturing and Support of CRAC Systems The OEM of the offered precision air conditioning (CRAC) units shall have a minimum of twenty (20) years of documents experience in the manufacture and after-sales support or precision air-conditioning/CRAC system of comparable application and capacity. Full 15 marks shall be awarded for 20 years or more of such experience. For each complete year below 20 years, 01 marks shall be deducted, subject to maximum deduction of 15 marks. Documents Required: OEM company profile, official company history, product literature, certifications, and /or other verifiable documentary evidence demonstrating the duration of relevant CRAC manufacturing and after sales support experience (Qualitative)(Doc Required) 20 years **(15)** 06 years **(1)**	15

Jobs/Lots

Jobs Without Lots :

Job	Delivery Schedule	Quantity	Bid Security
REPLACEMENT OF OBSOLETE & DETERIORATED CRAC UNITS SERVING RADAR AND AIR NAVIGATION FACILITIES AT AREA CONTROL CENTRE, JIAP – KARACHI	Address: Jinnah International Airport Karachi, Airport Sub-Division, Malir (District), Karachi (Division), Sindh (Province). Schedule: 335 Days Quantity: 01/job	1/job	1500000 PKR

Related Services :

No

Work Specifications and Market Rates

Jobs Without Lots :

Job: REPLACEMENT OF OBSOLETE & DETERIORATED CRAC UNITS SERVING RADAR AND AIR NAVIGATION FACILITIES AT AREA CONTROL CENTRE, JIAP – KARACHI

Specifications / Requirements:

Sr. No	Ref. No.	Description	Unit	Qty	Rate	In Words	Amount

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1	1	Dismantling & removing unserviceable 16 ton capacity Denco make Precision Type Split (IDU & ODU) A.C Unit from old plant room with the help of suitable capacity crane, chain pully, fork lifter and skilled workers, Job includes removing of copper pipes, drain water pipes, electrical wiring and dismantling of existing grouted frames of the units with provisioning of all Tools and Plant with required consumables items, Further Loading, Transportation and Unloading of units from TR RADAR,ACC radar and ATM sites to CAA Store as per	P/Job	4			

PROCUREMENT REGULATORY AUTHORITY PUBLIC (PPRA) EPADS

2	2	Providing & positioning of upward flow (Ducted type) Microprocessor based Close control precision air conditioning unit, "factory charged oil" as per given specifications on heavy duty vibration isolation rubber pad having following specifications. Air Conditioner Type: DX, Split Type and Dual Circuits. Cooling capacity min.= 56 Kw @ 42 deg. Centigrade ambient (inclusive of all applicable degradation at JIAP). Cooling /Supply Air Flow each min.= 16000 m3/h Indoor Unit - Almirah ducted type Up flow (Top Discharge), Easily accessible	P/Job	4			

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3	3	Providing & laying in situ 1:2:3 cement concrete using screen graded bajri 3/4 inch and down gauge in foundation, basement and plinth i/c form work, compacting, curing and removal of form works etc. complete, foundation and basement upto 5 feet depth and plinth upto 4 feet height from ground level	CFT	79			

PROCUREMENT REGULATORY AUTHORITY
PUBLIC (PPRA)
EPADS

4	4	Providing/Fabrication & Fixing of M.S 1 ½” x 2” x ¼” angle iron” frame for indoor unit as per required size (approximately 6'6" x 2'3") of unit i/c painting of angle iron frame with anti-rust and best quality enameled paint (02 coats) as per instruction of engineer in charge.	P/Job	4			
5	5	Providing and fixing of CPVC SCH 80 1 size pipe for drain line with elbow, sockets, bends and unions from unit to main hole as per instruction of Engineer Incharge.	P/Mtr	50			

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6	6	Providing, insulation, testing and commissioning of refrigerant copper pipe 1 ¼″ size, 22 gauge for discharge & liquid line with all type of fitting like, elbow, clamping, aero flex insulation, wrapping tape, etc complete in all respect as approved by the Engineer incharge	P/Rft	390			

PROCUREMENT REGULATORY AUTHORITY
PUBLIC (PPRA)
EPADS

7	7	Providing /welding, brazing and installation of copper or copper alloy hand shut off valve (on both sides), Filter/Drier set in liquid line & liquid site glass in each circuit as per required size on both circuit of unit. All items from approved manufacturer.	P/Job	4			

PUBLIC PROCUREMENT REGULATORY AUTHORITY (PPRA) EPADS

8	8	Final pressure testing with Nitrogen (dry) gas, leak detecting, vacuums including gas charging with Refrigerant (R-410a or compatible) in the system as per manufacturer recommendations. Job also includes, commissioning, configuration, testing, trial operation, adjustments, calibration, de-bugging, configuring all set-ports as per the OEM instructions, complete in all respect as per instruction of Engineer Incharge.	P/Job	4			

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9	9	Fabricating & fixing of 20 SWG GI sheet for supply air duct & supply air plenum box i/c hanging of duct with MS threaded rods, angle iron, duct sealant, rowel bolt & nut/bolts as per standard practice. Checking of air leakage from joints through light method as per instruction of engineer In charge.	P/Sft	1760			

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10	10	Fabricating & fixing of 22 SWG GI sheet for supply air duct i/c hanging of duct with MS threaded rods, angle iron, duct sealant, rowel bolt & nut/bolts as per standard practice. Checking of air leakage from joints through light method as per instruction of engineer In charge.	P/Sft	1150			

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11	11	Wiring for sub-main with 4 core 10mm² standard copper conductor PVC insulated & PVC sheathed circular/flat cable I/C 2.5 mm single core PVC insulated wire as CC in 30mm (1-1/4″) dia UPVC conduit fitted on surface as required.	P/Mtr	95			

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12	12	Providing and laying 4-core, 16mm PVC insulated and PVC sheathed 600/1000 Volt Grade with stranded copper conductor, unarmoured LT Cable in existing all kind of conduit or cable duct as per Pak P.W.D specifications as required	P/Mtr	40			

PUBLIC PROCUREMENT REGULATORY AUTHORITY (PPRA) EPADS

13	13	Providing and installing opposed blade Volume Control Dampers of Prime Quality Aluminum of minimum 14SWG thickness, (the quadrant volume damper shall be multi-leaf type, with a maximum blade width of 8// heavy duty quadrant operators of brass with stand off mountings on thermally insulated ducts to provide clearance between the duct surface and operator, equal to the thickness of the insulation, capable of being locked at desired position conveniently with engraved graduation, provided with a baked enamel	P/SqFt.	5490			

PROCUREMENT REGULATORY AUTHORITY (PPRA) EPADS

14	14	Providing, peeling & fixing of Close Cell-Flexible Elastomeric Foam Insulation-Density 60kg/M3 Self Adhesive reinforcing Mesh Scrim Durable Nitrile Butadiene Rubber (NBR) sheet Antimicrobial, Fire Retardant min. Thickness 100MM having built-in/factory applied cladding min. 99 Micron Aluminum PET-AL-PE Ultra Violet Radiation resistant, on HVAC air ducts whit the help of skilled workers. Job include wrapping of NBR type tape-UV-99 Micron UV plus aluminum-PET-AL-PE Ultra Violet Radiation min. thickness 99	P/Sft	2910			

15	15	Providing & fixing of water proof sound liner parachute type 25mm thick having density 24 Kg/m3 inside supply duct with cut screw complete from all respect.	P/Sft	2280			

PUBLIC PROCUREMENT REGULATORY AUTHORITY (PPRA) EPADS

16	16	Providing of approved colour powder coated Non-vision grille. Supply air diffuser with resistors & louvers for wind directions adjustment (vertical and horizontal), made of best quality aluminum. Nominal Rectangular profile with border having size 3/4". Counter sink fixing holes for screw-fixing or hooks for springs. Complete in all respect as per instructions of Engineer Incharge.	P/Sq.In	9292			

PUBLIC PROCUREMENT REGULATORY AUTHORITY (PPRA) EPADS

17	17	Provisioning and installation of insulated Flexible Duct 8" Dia including both ends jubilee Clamps Aluminum Tape etc complete in all respect	P/Rft	60			
18	18	Providing installation, testing and commissioning of refrigerant copper pipe 5/8" size 22 gauge with all type of fitting like, elbow, clamping, aero flex insulation, wrapping tape etc complete in all respect as approved by the Engineer Incharge.	P/Rft	390			

PROCUREMENT REGULATORY AUTHORITY PPRA EPADS

19	19	½” Thick cement plaster 1:3 on walls and columns etc. basement, plinth, mezzanine and ground floor including making edges, corners and curing etc complete. Job also include fixing of given rubber foundations.	P/Sft	214			
20	20	Wiring for sub-main with 3 core 2.5 mm² standard copper conductor, PVC insulated and PVC sheathed circular/flat cable I/c 1.5 mm² single core PVC insulated ware as ECC in 25 mm (1") dia UPVC conduit fitted on surface as required.	P/Mtr	425			

PROCUREMENT REGULATORY AUTHORITY (PPRA) EPADS

21							140980035
						GRAND TOTAL:	Rs140,980,035.00

PUBLIC PROCUREMENT REGULATORY AUTHORITY (PPRA) EPADS

Scope of Work

REPLACEMENT OF OBSOLETE & DETERIORATED CRAC UNITS SERVING RADAR AND AIR NAVIGATION FACILITIES AT AREA CONTROL CENTRE, JIAP – KARACHI

PUBLIC PROCUREMENT REGULATORY AUTHORITY (PPRA) EPADS

Price Schedule

For Individual Jobs

#	Job Title	Quantity	Unit Price (PKR)	Total Price (PKR)	Delivery Location	Delivery Period / Year	Country of Origin
1							
2							

For Lots

#	Lot Title	Total Lot Price (PKR)	Country of Origin
1	[Lot 1 Title]		

PUBLIC PROCUREMENT REGULATORY AUTHORITY
(PPRA)
EPADS

General Conditions of Contract

A. General

1. **Definitions**

1.1. Unless the context otherwise requires, the following terms whenever used in this Contract shall have the same meaning and shall be interpreted as indicated

1.1.1. “Applicable Law” means the laws and any other instruments having the force of law in the Government’s Country, or in such other country as may be specified in the Special Conditions of the Contract (SC), as they may be issued and in force from time to time;

1.1.2. “The Contract” means an agreement enforceable by law;

1.1.3. “The Contract Price” means the price payable to the Contractor under the Contract for the full and proper performance of its contractual obligations;

1.1.4. “The Services” means the work to be performed by the Contractor pursuant to this Contract and as prescribed in the Specifications and Schedule of Activities included in the Contractor’s Bid;

1.1.5. “Ancillary Services” means those services ancillary to the provision of Services, such as transportation and insurance, and any other incidental services, such as installation, commissioning, provision of technical assistance, training, and other such obligations of the Contractor covered under the Contract;

1.1.6. “GCC” means the General Conditions of Contract contained in this section;

1.1.7. “SCC” means the Special Conditions of Contract by which the GCC may be amended or supplemented;

1.1.8. **“**Day” means calendar day unless indicated otherwise;

1.1.9. “Effective Date” means the date on which this Contract comes into force and effect;

1.1.10. “The Contractor” means the individual or corporate body whose Bids to provide the Services has been accepted by the Procuring Agency;

1.1.11. “The Project Site,” where applicable, means the place or places named in Bid Data Sheet and technical Specifications;

1.1.12. “Government” means the Government of Pakistan;

1.1.13. “Local Currency” means the currency of Pakistan;

1.1.14. “In Writing” means communicated in written form with proof of receipt;

1.1.15. “Completion Date” means the date of completion of the Services by the Contractor as certified by the Procuring Agency;

1.1.16. “Foreign Currency” means any currency other than the currency of the country of the Procuring Agency;

1.1.17. “Party” means the Procuring Agency or the Contractor, as the case may be, and “Parties” means both of them;

1.1.18. "Service" means any object of procurement other than goods or works;

1.1.19. “Subcontractor” means any entity to which the Bidder subcontracts any part of the Services.

2. **Applicable Law**

2.1. The contract shall be governed and interpreted in accordance with the laws of Pakistan, unless otherwise specified in SCC.

3. **Language**

3.1. The Contract as well as all correspondence and documents relating to the Contract exchanged between the Contractorand the Procuring Agency, shall be written in the **English language** unless otherwise stated in the **SCC** . Supporting documents and printed literature that are part of the Contract may be in another language provided these are accompanied by an accurate translation of the relevant passages in English, in which case, for purposes of interpretation of the Contract, this translation shall govern.

4. **Notices**

4.1. Any notice, request, or consent made pursuant to this Contract shall be in writing and shall be deemed to have been made when delivered in person to an authorized representative of the Party to whom the communication is addressed, or when sent by registered mail, telex, telegram, or facsimile to such Party at the address specified in the **SCC**.

5. **Location**

5.1. The Services shall be performed at such locations as the Procuring Agency may approve and as specified in **SCC.**

5.2. A {DOCUMENTS}

6. **Authorized Representatives / Authority of Member in charge**

6.1. Any action required or permitted to be taken, and any document required or permitted to be executed, under this Contract by the Procuring Agency or the Contractor may be taken or executed by the officials specified in the **SCC**.

B. Commencement, Completion, Modification, and Termination of Contract

7. **Effectiveness of Contract**

7.1. This Contract shall come into effect on the date the Contract is signed by both parties and such other later date as may be stated in the **SCC.**

8. **Commencement of Services**

8.1. The Contractor shall confirm availability of Key Experts and begin carrying out the Services not later than the number of days after the Effective Date specified in the **SCC.**

9. **Program schedule**

9.1. Before commencement of the Services, the Contractor shall submit to the Procuring Agency for approval a Program showing the general methods, arrangements, order and timing for all activities. The Services shall be carried out in accordance with the approved Program as updated.

10. **Starting Date/Expiration Date**

10.1. The Contractor shall start carrying out the Services Five (05) days after the date the Contract becomes effective, or at such other date as may be specified in the **SCC.**

10.2. Unless terminated earlier pursuant to Clause **GCC 14** hereof, this Contract shall expire at the end of such time period after the Effective Date as specified in the **SCC.**

11. **Entire Agreement**

11.1. This Contract contains all covenants, stipulations and provisions agreed by the Parties. No agent or representative of either Party has authority to make, and the Parties shall not be bound by or be liable for, any statement, representation, promise or agreement not set forth herein.

12. **Modification**

12.1. Any modification or variation of the terms and conditions of this Contract, including any modification or variation of the scope of the Services, may only be made by written agreement between the Parties. However, each Party shall give due consideration to any modification(s) or variation(s) made by the other Party.

12.2. In cases of any modification(s) or variation(s), the prior written consent of the Procuring Agency is required.

13. **Force Majeure**

13.1. **Definition**
For the purposes of this Contract, “Force Majeure” means an event which is beyond the reasonable control of a Contractor and which makes a Contractor’s performance of its obligations under the Contract impossible or so impractical as to be considered impossible under the circumstances.

13.2. **No Breach of Contract**
The failure of a Party to fulfill any of its obligations under the contract shall not be considered to be a breach of, or default under, this Contract in so far as such inability arises from an event of Force Majeure, provided that the Party affected by such an event (a) has taken all reasonable precautions, due care and reasonable alternative

measures in order to carry out the terms and conditions of this Contract, and (b) has informed the other Party as soon as possible about the occurrence of such an event.

13.3. **Extension of Time**
Any period within which a Contractor shall, pursuant to this Contract, complete any action or task, shall be extended for a period equal to the time during which such Party was unable to perform such action as a result of Force Majeure.

13.4. **Payments**
During the period of their inability to perform the Services as a result of an event of Force Majeure, the Contractor shall be entitled to continue to be paid under the terms of this Contract, as well as to be reimbursed for additional costs reasonably and necessarily incurred by them during such period for the purposes of the Services and in reactivating the Service after the end of such period.

14. **Termination**

14.1. **By the Procuring Agency**
The Procuring Agency may terminate this Contract in case of the occurrence of any of the events specified in paragraphs (a) through (e) of this Clause. In such an occurrence the Procuring Agency shall give at least thirty (30) calendar days' written notice of termination to the Contractor in case of the events referred to in (a) through (d); at least sixty (60) calendar days' written notice in case of the event referred to in (e);

14.1.1. If the Contractor fails to remedy a failure in the performance of its obligations hereunder, as specified in a notice of suspension;

14.1.2. If the Contractor becomes (or, if the Contractor consists of more than one entity, if any of its members becomes) insolvent or bankrupt or enter into any agreements with their creditors for relief of debt or take advantage of any law for the benefit of debtors or go into liquidation or receivership whether compulsory or voluntary;

14.1.3. If the Contractor fails to comply with any final decision reached as a result of arbitration proceedings;

14.1.4. If, as the result of Force Majeure, the Contractor is unable to perform a material portion of the Services for a period of not less than sixty (60) calendar days;

14.1.5. If the Procuring Agency, in its sole discretion and for any reason whatsoever, decides to terminate this Contract;

14.2. **By the Contractor**
The Contractor may terminate this Contract, by not less than thirty (30) calendar days' written notice to the Procuring Agency, in case of the occurrence of any of the events specified in paragraphs (a) through (d) of this Clause.

14.2.1. If the Procuring Agency fails to pay any money due to the Contractor pursuant to this Contract and not subject to dispute within forty-five (45) calendar days after receiving written notice from the Contractor that such payment is overdue;

14.2.2. If, as the result of Force Majeure, the Contractor is unable to perform a material portion of the Services for a period of not less than sixty (60) calendar days;

14.2.3. If the Procuring Agency fails to comply with any final decision reached as a result of arbitration;

14.2.4. If the Procuring Agency is in material breach of its obligations pursuant to this Contract and has not remedied the same within forty-five (45) days (or such longer period as the Bidder may have subsequently approved in writing) following the receipt by the Procuring Agency of the Contractor's notice specifying such breach.

C. Obligations of the Contractor

15. **General**

15.1. **Standard of Performance**

15.1.1. The Contractor shall perform the Services and carry out the Services with all due diligence, efficiency and economy, in accordance with generally accepted professional standards and practices, and shall observe sound management practices, and employ appropriate technology and safe and effective equipment, machinery, materials and methods. The Contractor shall always act, in respect of any matter relating to this Contract or to the Services, as a faithful adviser to the Procuring Agency, and shall at all times support and safeguard the Procuring Agency's legitimate interests in any dealings with the third parties;

15.1.2. The Contractor shall employ and provide such qualified and experienced Experts and Sub-Contractors as are required to carry out the Services.

15.2. **Law Applicable to Services**

The Contractor shall perform the Services in accordance with the Contract and in accordance with the Law of Pakistan and shall take all practicable steps to ensure that any of its Experts and Sub-Bidders, comply with the Applicable Law.

16. **Conflict of Interests**

16.1. **Contractor Not to Benefit from Commissions and Discounts**

The remuneration of the Contractor shall constitute the Contractor's sole remuneration in connection with this Contract or the Services, and the Contractor shall not accept for their own benefit any trade commission, discount, or similar payment in connection with activities pursuant to this Contract or to the Services or in the discharge of their obligations under the Contract, and the Contractor shall use their best efforts to ensure that the Personnel, any Subcontractors, and agents of either of them similarly shall not receive any such additional remuneration.

16.2. **Contractor and Affiliates Not to be Otherwise Interested in Project**

The Contractor agree that, during the term of this Contract and after its termination, the Contractor and its affiliates, as well as any Subcontractor and any of its affiliates, shall be disqualified from providing Services (other than the Services and any continuation thereof) for any project resulting from or closely related to the Services.

16.3. **Prohibition of Conflicting Activities**

Neither the Bidder nor its Subcontractors nor the Personnel shall engage, either directly or indirectly, in any of the following activities:

16.3.1. during the term of this Contract, any business or professional activities in the Government's country which would conflict with the activities assigned to them under this Contract;

16.3.2. during the term of this Contract, neither the Contractor nor their Subcontractors shall hire public employees in active duty or on any type of leave, to perform any activity under this Contract;

16.3.3. after the termination of this Contract, such other activities as may be specified in the **SCC.**

17. **Insurance to be Taken Out by the Contractor**

17.1. The Contractor(a) shall take out and maintain, and shall cause any Subcontractors to take out and maintain, at its (or the Sub-contractors', as the case may be) own cost but on terms and conditions approved by the Procuring Agency, insurance against the risks, and for the coverage, as shall be specified in the **SCC**; and (b) at the Procuring Agency's request, shall provide evidence to the Procuring Agency showing that such insurance has been taken out and maintained and that the current premiums have been paid.

18. **Contractor's Actions Requiring Procuring Agency's Prior Approval**

18.1. The Contractor shall obtain the Procuring Agency's prior approval in writing before taking any of the following actions:

18.1.1. appointing such members of the Personnel not provided by the Contractor;

18.1.2. changing the Program of activities; and

18.1.3. any other action that may be specified in the **SCC.**

19. **Reporting Obligations**

19.1. The Contractor shall submit to the Procuring Agency the reports and documents in the numbers, and within the periods as prescribed by the Procuring Agency.

20. **Liquidated Damages**

20.1. **Payments of Liquidated Damages**

The Contractor shall pay liquidated damages to the Procuring Agency at the rate per day stated in the **SCC** for each day that the Completion Date is later than the Intended Completion Date. The total amount of liquidated damages shall not exceed the amount defined in the **SCC**. The Procuring Agency may deduct liquidated damages from payments due to the Contractor. Payment of liquidated damages shall not affect the Contractor's liabilities.

20.2. **Correction for Over-payment**

If the Intended Completion Date is extended after liquidated damages have been paid, the Procuring Agency shall correct any overpayment of liquidated damages by the Contractor by adjusting the next payment certificate. The

Contractor shall be paid interest on the overpayment, calculated from the date of payment to the date of repayment, at the rates specified in **SCC.**

20.3. **Lack of performance penalty**
If the Contractor has not corrected a Defect within the time specified in the Procuring Agency's notice, a penalty for Lack of performance will be paid by the Contractor. The amount to be paid will be calculated as a percentage of the cost of having the Defect corrected, assessed as specified in the Contractor

21. **Performance Guarantee**

21.1. Within the time stipulated in the acceptance letter from the Procuring Agency, the successful Bidder shall furnish the Performance Guarantee in shape and amount **specified in SCC.**

21.2. The proceeds of the Performance Guarantee shall be payable to the Procuring agency as compensation for any loss resulting from the Supplier's failure to complete its obligations under the Contract.

21.3. The Performance Guarantee shall be denominated in the currency of the Contract, or in a freely convertible currency acceptable to the Procuring agency and shall be in the acceptable form as specified in **SCC**.

21.4. The Performance Guarantee will be discharged by the Procuring agency and returned to the Supplier not later than thirty (30) days following the date of completion of the Supplier's performance obligations under the Contract, including any warranty obligations, unless otherwise **specified in SCC.**

22. **Sustainable Procurement**

22.1. The Contractor shall conform to the sustainable procurement contractual provisions, if and as specified in the **SCC.**

D. Contractor's Personnel

23. **Description of Personnel**

23.1. The titles, agreed job descriptions, minimum qualifications, and estimated periods of engagement in the carrying out of the Services of the Contractor's Key Personnel. The Key Personnel listed by title as well as by name are hereby approved by the Procuring Agency.

24. **Removal and / or Replacement of Personnel**

24.1. Except as the Procuring Agency may otherwise agree, no changes shall be made in the Key Personnel. If, for any reason beyond the reasonable control of the Contractor, it becomes necessary to replace any of the Key Personnel, the Contractor shall provide as a replacement a person of equivalent or better qualifications.

24.2. If the Procuring Agency finds that any of the Personnel have (i) committed serious misconduct or have been charged with having committed a criminal action, or (ii) have reasonable cause to be dissatisfied with the performance of any of the Personnel, then the Contractor shall, at the Procuring Agency's written request specifying the grounds thereof, provide as a replacement a person with qualifications and experience acceptable to the Procuring Agency.

24.3. The Contractor shall have no claim for additional costs arising out of or incidental to any removal and/or replacement of Personnel.

E. Obligations of the Procuring Agency

25. **Change in the Applicable Law**

25.1. If, after the date of this Contract, there is any change in the Applicable Law with respect to taxes and duties which increases or decreases the cost of the Services rendered by the Contractor, then the remuneration and reimbursable expenses otherwise payable to the Contractor under this Contract shall be increased or decreased accordingly by agreement between the Parties, and corresponding adjustments shall be made to the amounts referred in the **SCC.**

26. **Services and Facilities**

26.1. The Procuring Agency shall make available to the Contractor and the Experts, for the purposes of the Services and free of any charge, the services, facilities and property described in the Terms of Reference, at the times and in the manner specified in the Terms of Reference.

26.2. In case that such services, facilities and property shall not be made available to the Contractor, the Parties shall agree on (i) any time extension that it may be appropriate to grant to the Contractor for the performance of the Services, (ii) the manner in which the Contractor shall procure any such services, facilities and property from other sources, and (iii) the additional payments, if any, to be made to the Contractor as a result thereof.

F. Payments to the Contractor

27. **Contract Price**

27.1. The price payable shall be in Pakistani Rupees unless otherwise specified in the **SCC**.

28. **Terms and Conditions of Payment**

28.1. Payments will be made to the Contractor according to the payment schedule stated in the **SCC** and as per actual invoice submitted by the Contractor.

28.2. Unless otherwise stated in the **SCC**, the advance payment shall be made against the provision by the Contractor of a bank guarantee for the same amount, and shall be valid for the period stated in the **SCC.** Any other payment shall be made after the conditions listed in the **SCC** for such payment have been met, and the Contractor have submitted an invoice to the Procuring Agency specifying the amount due.

29. **Quality Control Identifying Defects**

29.1. The principle and modalities of Inspection of the Services by the Procuring Agency shall be as indicated in the **SCC.** The Procuring Agency shall check the Contractor’s performance and notify him of any Defects that are

found. Such checking shall not affect the Contractor's responsibilities. The Procuring Agency may instruct the Contractor to search for a Defect and to uncover and test any service that the Procuring Agency considers may have a Defect. Defect Liability Period is as defined in the **SCC**.

29.2. A {INSPECTION}

30. **Correction of Defects, and Lack of Performance Penalty**

30.1. The Procuring Agency shall give notice to the contractor of any Defects before the end of the Contract. The Defects liability period shall be extended for as long as Defects remain to be corrected.

30.2. Every time notice a Defect is given; the contractor shall correct the notified Defect within the length of time specified by the Procuring Agency's notice.

30.3. If the contractor has not corrected a Defect within the time specified in the Procuring Agency's notice, the Procuring Agency will assess the cost of having the Defect corrected, the contractor will pay this amount, and a Penalty for Lack of Performance.

31. **Settlement of Disputes Amicable Settlement**

31.1. The Parties shall use their best efforts to settle amicably all disputes arising out of or in connection with this Contract or its interpretation.

32. **Dispute Settlement**

32.1. **Arbitration**

If any dispute of any kind whatsoever shall arise between the procuring agency and the contractor in connection with or arising out of the Contract, including without prejudice to the generality of the foregoing, any question regarding its existence, validity or termination, or the execution of the contract, the parties shall seek to resolve any such dispute or difference by mutual consultation. If the parties fail to resolve such a dispute or difference even after negotiations or mediation, then the dispute shall be referred within fourteen (14) days in writing by either party to the Arbitrator, with a copy to the other party.

Any dispute in respect of which a notice of intention to commence arbitration has been given, in accordance with **GCC sub-clause 32.1**, shall be finally settled by arbitration. Arbitration may be commenced prior to or after completion of the Contract. Arbitration proceedings shall be conducted in accordance with Arbitration Act 1940. Notwithstanding any reference to arbitration herein, the parties shall continue to perform their respective obligations under the Contract unless otherwise agreed. The Procuring Agency shall continue to pay the Contractor any undisputed amounts due under the Contract during the resolution of any dispute.

Special Conditions of Contract

SECTION VIII. SPECIAL CONDITIONS OF CONTRACT

The following Special Conditions of Contract shall supplement the General Conditions of Contract. Whenever there is a conflict, the provisions herein shall prevail over those in the Conditions of Contract. The corresponding clause number of the GCC is indicated in parentheses.

Number of GC Clause

Amendments of, and Supplements to, Clauses in the General Conditions of Contract

Number of GC Clause 1

Definitions

The Procuring Agency is: Jinnah International Airport - Pakistan Airports Authority (Pakistan Airports Authority (PAA)), Senior Joint Director Jinnah International Airport Karachi, Airport Sub-Division, Malir (District), Karachi (Division), Sindh (Province).

The Supplier is:

The title of the subject procurement is: REPLACEMENT OF OBSOLETE & DETERIORATED CRAC UNITS SERVING RADAR AND AIR NAVIGATION FACILITIES AT AREA CONTROL CENTRE, JIAP – KARACHI

Number of GC Clause 2

Applicable/Governing Law:

The Contract shall be interpreted in accordance with the laws of Islamic Republic of Pakistan

Number of GC Clause 3

Language:

The language of the Contract, all correspondence and communications to be given, and all other documentation to be prepared and supplied under the Contract shall be in **English.**

Number of GC Clause 4

Notices:

The addresses for the notices are:

Procuring Agency:

Jinnah International Airport - Pakistan Airports Authority (Pakistan Airports Authority (PAA)), Senior Joint Director
Jinnah International Airport Karachi, Airport Sub-Division, Malir (District), Karachi (Division), Sindh (Province).
+92-333-792-2469
adeel_aa77@hotmail.com

Contractor/ Bidder:

[Name, address and telephone number]

The Contractor/ Bidder's Representative(s)

[Name, address, telephone number and e-mail address]

Number of GC Clause 6.1

The Authorized Representatives are:

For the Procuring Agency:

Jinnah International Airport - Pakistan Airports Authority (Pakistan Airports Authority (PAA)), Senior Joint Director
Jinnah International Airport Karachi, Airport Sub-Division, Malir (District), Karachi (Division), Sindh (Province).
+92-333-792-2469
adeel_aa77@hotmail.com

For the Bidder:

Name: ……

Designation: ……..

Address: ……..

Number of GC Clause 7

Effectiveness of the contract

The Contractor/Bidder shall be effective within ….. days from the date of signature of the Contract by both parties

Number of GC Clause 8

Commencement of Contract:

The Contractor/Bidder shall provide Non-Consultancy Services from the effective date of contract.

Number of GC Clause 10.2

Expiration of Contract:

The time period shall be ……

Number of GC Clause 14

Termination

In the event of termination of the contract due to any reason as already defined in the General Conditions of Contract, the Bidder shall be responsible for providing to the Authority the Goods till the time of alternate arrangements.

Number of GC Clause 16

Conflict of Interest:

The Procuring Agency reserves the right to determine on a case-by-case basis whether the Bidder should be disqualified from providing goods or services due to a conflict of a nature described in Clause GCC 17.

Number of GC Clause 20

Liquidated Damages

If the Bidder fails to provide services as required under the contract or in case of any data loss/data breach or any incident compromising the data security or other such failures related to any services, the Bidder shall pay to the Procuring Agency as Liquidated Damages at a rate of **0.05%** to **10.00%** of the Contract value, in accordance with the extent of performance failure & the cost of investigating such incidents as judged by the Authority.

Number of GC Clause 21

Performance Guarantee:

The amount of performance guarantee shall be **5.00%** of the contract price in acceptable form of **Pay Order, Banker's Cheque, Call at Deposit, Bank Guarantee, Demand Draft**

Number of GC Clause 27

Currency of Payment:

All the payment to be released to the contractor/Bidder shall be in Pakistani Rupees.

Number of GC Clause 28

Payment terms:

Payment will be made to the Bidder against the procured Goods and services according to the actual invoice or running bills submitted by the Bidder against the services provided within the time given in the conditions of the contract.

Number of GC Clause 29

Identifying Defects:

The Authority reserves the right at any time to inspect the premises of the provider to inspect the goods and monitor the goods being provided.

Number of GC Clause 31

Following is the guidance for Dispute Resolution

i. If any dispute of any kind whatsoever shall arise between the Authority and the Bidder in connection with or arising out of the Contract... (full clause unchanged)

ii. At future of negotiation the dispute shall be resolved through mediation...

iii. At failure of mediation, arbitration under Arbitration Act 1940...

iv. Cost sharing equally...

v. Proceedings may commence before/after completion...

Notwithstanding any reference to the arbitration herein, the parties shall continue to perform their respective obligations under the Contract.

Rules of procedure for arbitration proceedings:

Any dispute between the Authority and a Bidder shall be referred to arbitration under the laws of Pakistan including Arbitration Act 1940.

Place of Arbitration and Award:

The arbitration shall be conducted in English language and place shall be Islamabad. The award shall be final and binding.

PUBLIC PROCUREMENT REGULATORY AUTHORITY (PPRA) EPADS

Bid Securing Declaration

Form 9: Bid Securing Declaration

Date: *[insert date (as day, month and year)]*

Bid No.:***P216600***

To: **Jinnah International Airport - Pakistan Airports Authority (Pakistan Airports Authority (PAA)), Senior Joint Director Jinnah International Airport Karachi, Airport Sub-Division, Malir (District), Karachi (Division), Sindh (Province).**

We, the undersigned, declare that:

We understand that, according to your conditions, Bids must be supported by a Bid Securing Declaration.

We accept that we will be blacklisted and henceforth cross debarred for participating in respective category of public procurement proceedings for a period of (not more than) six months, if fail to abide with a bid securing declaration, however without indulging in corrupt and fraudulent practices, if we are in breach of our obligation(s) under the Bid conditions, because we:

1. have withdrawn or modified our Bid during the period of Bid Validity specified in the Form of Bid;

2. Disagreement to arithmetical correction made to the Bid price; or

3. having been notified of the acceptance of our Bid by the Procuring Agency during the period of Bid Validity, (i) failure to sign the contract if required by Procuring Agency to do so or (ii) fail or refuse to furnish the Performance Security or to comply with any other condition precedent to signing the contract specified in the Bidding Documents.

We understand this Bid Securing Declaration shall expire if we are not the successful

Bidder, upon the earlier of (i) our receipt of your notification to us of the name of the successful Bidder; or (ii) twenty-eight (28) days after the expiration of our Bid.

Contract Form

SECTION IX: CONTRACT FORMS

THIS AGREEMENT made the _____ day of _____ 20_____ between **Jinnah International Airport - Pakistan Airports Authority (Pakistan Airports Authority (PAA)), Senior Joint Director Jinnah International Airport Karachi, Airport Sub-Division, Malir (District), Karachi (Division), Sindh (Province).**

(hereinafter called "the Procuring Agency") of the one part and *[name of Bidder]* of *[city and country of Bidder]* (hereinafter called "the Bidder") of the other part:

WHEREAS the Procuring Agency invited Bids for provision of goods, viz., **REPLACEMENT OF OBSOLETE & DETERIORATED CRAC UNITS SERVING RADAR AND AIR NAVIGATION FACILITIES AT AREA CONTROL CENTRE, JIAP – KARACHI (*P216600*)** and has accepted a Bids by the Bidder for the provision of Goods in the sum of *[contract price in words and figures]* (hereinafter called "the Contract Price").

NOW THIS CONTRACT WITNESSETH AS FOLLOWS:

1. In this Contract words and expressions shall have the same meanings as are respectively assigned to them in the Conditions of Contract referred to.

2. The following documents shall be deemed to form and be read and construed as part of this Contract, In the event of any ambiguity or conflict between the Contract Documents listed below, the order of precedence shall be the order in which the Contract Documents are listed below:-

1. This form of Contract;
2. the Form of Bids and the Price Schedule submitted by the Bidder;
3. the Schedule of Requirements;
4. the Technical Specifications;
5. the Special Conditions of Contract;
6. the General Conditions of the Contract;
7. the Procuring Agency's Letter of Acceptance; and
8. [*add here: any other documents*]

3. In consideration of the payments to be made by the Procuring Agency to the Bidder as hereinafter mentioned, the Bidder hereby covenants with the Procuring Agency to provide the Goods related services and to remedy defects therein in conformity in all respects with the provisions of the Contract.

4. The Procuring Agency hereby covenants to pay the Bidder in consideration of the provision of Goods and the remedying of defects therein, the Contract Price or such other sum as may become payable under the

provisions of the contract at the times and in the manner prescribed by the contract.

IN WITNESS whereof the parties hereto have caused this Contract to be executed in accordance with their respective laws the day and year first above written.

Signed, sealed, delivered by _____the _____ (for the Procuring Agency)

Witness to the signatures of the Procuring Agency:

……

Signed, sealed, delivered by _____the _____ (for the Procuring Agency)

Witness to the signatures of the Bidder: ……

Integrity Pact

Integrity Pact

DECLARATION OF FEES, COMMISSION AND BROKERAGE ETC. PAYABLE BYTHE SUPPLIERS OF GOODS, SERVICES & WORKS IN CONTRACTS WORTH RS.10.00 MILLION OR MORE

Contract Number: Contract Value: Contract Title:

Dated:

[Name of Supplier] hereby declares 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 practice.

Without limiting the generality of the foregoing [Name of Supplier] represents and warrants that it has fully declared the brokerage, commission, fee etc. paid or payable to anyone and 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 natural 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 consultations fee or otherwise, with the object of obtaining or inducing the procurement of a contract, right, interest, privilege or other obligation or benefit in whatsoever form from GoP, except that which has been expressly declared pursuant hereto.

[Name of Supplier] 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, representative or warranty.

[Name of Supplier] accepts full responsibility and strict liability for making and false declaration, not making full disclosure, misrepresenting fact 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, [Name of Supplier] agrees to indemnify 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 time the sum of any commission, gratification, bribe, finder's fee or kickback given by [Name of Supplier] as aforesaid for the purpose of obtaining or inducing the procurement of any contract, right, interest, privilege or other obligation or benefit in whatsoever form from GoP.

Performance Guarantee Form

Integrity Pact

DECLARATION OF FEES, COMMISSION AND BROKERAGE ETC. PAYABLE BYTHE SUPPLIERS OF GOODS, SERVICES & WORKS IN CONTRACTS WORTH RS.10.00 MILLION OR MORE

Contract Number: Contract Value: Contract Title:

Dated:

[Name of Supplier] hereby declares 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 practice.

Without limiting the generality of the foregoing [Name of Supplier] represents and warrants that it has fully declared the brokerage, commission, fee etc. paid or payable to anyone and 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 natural 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 consultations fee or otherwise, with the object of obtaining or inducing the procurement of a contract, right, interest, privilege or other obligation or benefit in whatsoever form from GoP, except that which has been expressly declared pursuant hereto.

[Name of Supplier] 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, representative or warranty.

[Name of Supplier] accepts full responsibility and strict liability for making and false declaration, not making full disclosure, misrepresenting fact 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, [Name of Supplier] agrees to indemnify 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 time the sum of any commission, gratification, bribe, finder's fee or kickback given by [Name of Supplier] as aforesaid for the purpose of obtaining or inducing the procurement of any contract, right, interest, privilege or other obligation or benefit in whatsoever form from GoP.

Annexure

Technical Proposal

Bidders are requested to download the attached Technical Proposal. Bidders are advised in their own interest to review the contents of Bidding Documents thoroughly and perform due diligence at their own cost prior to participating in the bidding process. The Bidders are advised to submit physical (hard form) of bid only Technical Proposal alongwith bid security (in original) on the date and time mentioned in the Tender Notice to assist in evaluation. In case of any discrepancies between the bid submitted physical and on EPADS, the latter shall prevail.

Technical Submission (Vendor)

Document Required

See Form Under Additional Forms and Documents: **Technical Proposal** (page number: 96)

Financial Proposal

Bidders are advised in their own interest to download Financial Proposal and review the contents of Bidding Documents thoroughly and perform due diligence by quoting rates at their own cost prior to participating in the bidding process. Bidders are requested to upload the Financial Proposal on EPADS

Technical Submission (Vendor)

Document Required

See Form Under Additional Forms and Documents: **Financial Proposal** (page number: 185)

Procurement Forms

PUBLIC PROCUREMENT REGULATORY AUTHORITY
(PPRA)
EPADS

PUBLIC PROCUREMENT REGULATORY AUTHORITY
(PPRA)
EPADS

Additional Forms and Documents

IN CASE OF ANY CONFLICT / CONTRADICTION BETWEEN PPRA STANDARD BIDDING DOCUMENTS AND PAA BIDDING DOCUMENTS, THE PROVISIONS STIPULATED UNDER PAA BIDDING DOCUMENTS SHALL PREVAIL AND BE TREATED AS FINAL

PAKISTAN AIRPORTS AUTHORITY
JINNAH INTERNATIONAL AIRPORT
(ES E&M - HVAC SECTION)

TECHNICAL PROPOSAL

PROVISIONING OF PRECISION CONTROL AIR-CONDITIONING UNITS AT JIAP

REPLACEMENT OF OBSOLETE & DETERIORATED CRAC UNITS SERVING RADAR AND AIR NAVIGATION FACILITIES AT AREA CONTROL CENTRE, JIAP – KARACHI

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CONTRACT DOCUMENT
FOR THE SUBJECT HVAC PROJECT THE PAA ADDITIONAL INSTRUCTIONS TO BIDDERS, PAA GCC & PAA SCC SHALL PREVAILS

PAKISTAN AIRPORTS AUTHORITY

NAME OF SCHEME: **PROVISIONING OF PRECISION CONTROL AIR-CONDITIONING UNITS AT JIAP**

SUB HEAD: **REPLACEMENT OF OBSOLETE & DETERIORATED CRAC UNITS SERVING RADAR AND AIR NAVIGATION FACILITIES AT AREA CONTROL CENTRE, JIAP – KARACHI**

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A. MEMORANDUM OF RUNNING BILLS

S.No.	Amount	Dated Initials of Account Personnel

B. MEMORANDUM OF EXTENSION OF TIME

S.No.	From	To	Dated Initials of Personnel

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1.	Date and time of Receipt of Bid(s)	As per provision of EPADS V - 2.0
2.	Date and time of opening of Bid(s)	As per provision of EPADS V – 2.0
3.	Submission of Bids	Online through EPADS & Office of Divisional Engineer ES (E&M) - JIAP, Room # 4051, Level – IV, East Side, JIAP Karachi

Divisional Engineer ES (E&M)
JIAP – Karachi

GENERAL INSTRUCTIONS

1) Bids shall be submitted electronically on PPRA EPADS V – 2.0 portal.

2) Bidders are advised in their own interest to review the contents of Bidding Documents thoroughly and perform due diligence at their own cost prior to participating in the bidding process.

3) The Bid Security shall be in the form as prescribed in the Invitation to Bids.

Important:

4) Original instrument of Bid Security must be submitted at the time of Bid Opening in sealed envelope well before the closing date and time mentioned in Invitation to Bids and its scanned copy must be attached with the electronic bid to be submitted online on EPADS. The bid security in the shape of Pay Order, Call Deposit, Receipt or Banker's Cheque should be singed & stamped on the back of leaf by bidders.

5) Should a Bidder fail to submit original instrument of Bid Security in sealed envelope before the closing date and time of Bid Opening or does not attach its scanned copy with the electronic bid, their bid shall be rejected outrightly.

6) All Bidders are requested to submit the bidding documents, without making any changes to the original text, complete with drawings, specifications etc. containing the signatures of the Bidder's representative on each and every page of the documents.

7) The Bidders are advised to submit physical (hard form) bid in original on the date and time mentioned in the invitation to bids to assist in evaluation, however that is not mandatory. In case of any discrepancies between the bid submitted physically and on EPADS, the latter shall prevail.

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DECLARATION

It is hereby solemnly affirmed and declared that I / we are not serving employees of any Government organization including PAA, and that it is further assured that if I / we had been previously engaged with PAA as an employee, then that service or employment had ceased to be in effect two years prior to the date of advertisement for this Work.

It is hereby further solemnly affirmed and declared that no serving or retired employee who has not completed two years after retirement from PAA is employed at our Contracting business.

It is hereby further undertaken and guaranteed that no serving or retired employee who has not completed two years after retirement from PAA shall be permitted to have any financial interest in the said Contracting business during the currency of this Contract with PAA.

It is clearly understood and agreed that in the event of a breach of the above undertaking during the currency of this Contract, the said Contract shall be liable to immediate cancellation in which case the security deposits and all other monies due or which may become due to PAA shall stand forfeited and be absolutely at the disposal of the PAA.

[Contractor's Signatures with Seal]

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INVITATION TO BIDS

Date: _____

1. Pakistan Airports Authority invites bids from eligible Constructors licensed by the Pakistan Engineering Council in the appropriate category for the Works named on the cover page.

2. The bidding process shall be conducted in line with the single stage two envelopes 27(b) procedure prescribed under Public Procurement Rules 2026, e-Pak Procurement Regulations, 2023 and any Regulations, Regulatory Guides, Procurement Guidelines or Instructions issued by the PPRA (from time to time), and is open to all potential eligible bidders registered in the EPADS.

3. All bids must be accompanied by Bid Security (amounting to PKR 1,500,000/-) in an acceptable form.

4. The electronic bids prepared in accordance with the instructions prescribed in the electronic bidding documents must be submitted through EPADS on or before the bid closing date and time. Electronic bids will be opened by using EPADS on the same day 30 minutes after bid closing time.

5. The bidders are required to attach and submit following documents electronically.
   a) Scanned copy of CNIC, and attested copy to be submitted physically.
   b) Scanned original valid PEC License, and attested copy to be submitted physically (financial category C-4 (or above) and specialization code is ME-01.
   c) Attested copy of valid NTN Certificate
   d) Affidavit for no blacklisting and litigation.

6. All bidding proceedings shall be conducted through E-PADS V – 2.0 through available provisions of the portal.

Divisional Engineer ES (E&M)
JIAP – Karachi

NOTE :

Pre-bid meeting to be conducted at ADLD ES (E/M) office at JIAP.

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ADDITIONAL INSTRUCTIONS TO BIDDERS

1. The invitation to bids shall contain the name of work to be carried out as well as the date for submitting and opening the bids and the time allowed for carrying out the work; also the amount of *bid security* to be deposited with the bid. Copies of the specifications, designs and drawings and any other documents required in connection with the work signed for the purpose of identification by Pakistan Airports Authority (PAA) shall also be open for inspection by the Contractor at the office of the Additional Director / Project Manager / Divisional Engineer during office hours.

2. Where a bid is being submitted by a firm, it must be signed separately by each partner thereof, or in the event of the absence of any Partner, it must be signed on his behalf by a person holding a power of attorney authorizing him to do so, such power-of-attorney to be produced with the bid and a Photostat of the Partnership Deed should accompany the bid.

3. Where a firm of Contractors is an incorporated company registered under the Companies Act, the Contractors shall furnish the following documents:

a) Memorandum and Articles of Association together with a copy of certificate of incorporation.

b) In case the Contract is to be signed by one of the Directors of the Contractor's Company, a certified copy of the resolution of the Board of Directors or a Photocopy of the General Power of Attorney executed by the Company authorizing such Directors to enter into and sign the Contract with PAA.

4. The memorandum of work and the schedule of materials to be supplied by the PAA and their issue rates, shall be filled, and completed in the office of Divisional Engineer before the bidding document is uploaded on EPADS V – 2.0.

5. The bidder shall also produce a certificate of registration with the Income Tax Authority, and proof of being Active Taxpayer and attach it with the bid.

6. Bidders may request clarification of the Bidding Documents by sending a written query to the PAA through EPADS. The PAA may, if deemed appropriate, respond to the request at least two days before the bid submission deadline.

7. PAA may, at its discretion convene a pre-bid meeting to provide clarifications on the Bidding Documents. If held, the date, time, and venue of the meeting shall be specified on the EPADS. Bidders are encouraged to submit any queries in writing no later than seven (7) days prior to the scheduled meeting. The minutes of the meeting, including all questions raised and responses provided, shall be promptly circulated to all recipients of the Bidding Documents.

8. Bidders are advised to visit and inspect the Site and its surroundings at their own risk and cost, and to conduct all necessary due diligence to obtain sufficient information for the preparation of their bids and execution of the Contract. PAA shall permit such visits, subject to prior coordination; however, bidders and their representatives shall enter the site entirely at their own risk and shall indemnify and hold harmless the PAA, its personnel, and agents from any liability, loss, damage, injury, or expense arising from or related to such visits.

9. PAA may amend the Bidding Documents at any time before the bid submission deadline, either on their own or in response to a bidder's request for clarification, by issuing a written addendum. Each addendum will become part of the Bidding Documents and will be shared with all purchasers, who must acknowledge receipt in writing. If needed, PAA may extend the bid submission deadline to allow bidders sufficient time to consider the changes.

10. Bidders who propose any alteration in the work specified in the said form of an invitation to bid, or in the time allowed for carrying out the work, or which contain any other condition of any sort,

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will be liable to rejection. No single bid shall include more than one work, but Contractors who wish to bid for two or more works fshall submit a separate bid for each work.

11. No alterations or additions shall be made by the Contractor in the schedule of quantities and rates must be filled in ink (blue or black) or typed out both in figures and words clearly and legibly in the columns provided in the schedule of Quantities. All corrections must be signed by the Contractors.

12. Bidders shall not be reimbursed any cost of any kind whatsoever incurred by them in connection with preparation and submission of their Bids.

13. Arithmetical errors in the bid will be rectified on the following basis:

a) If there is a discrepancy between the amounts in figures and in words, the amount in words will govern; and if there is a discrepancy between the unit rate and the line item total resulting from multiplying the unit rate by the quantity, the unit rate as quoted will govern, unless in the opinion of the PAA there is an obviously gross misplacement of the decimal point in the unit rate, in which case the line item total as quoted will govern and the unit rate will be corrected.

b) If the bidder quotes different rates for the same items across sub-heads, or attaches page(s) containing items with varying rates for the same item(s), the lowest unit rate will be considered for evaluation.

c) If the bidder does not accept the corrected / evaluated amount of bid, their bid will be rejected, and bid security shall be forfeited.

14. Bids shall be accompanied by a Call Deposit Receipt, Pay Order, or a Banker's Cheque of the amount given in the Memorandum as Bid Security. The Bid Security shall be returned to the un-successful bidders, after the work has been awarded.

15. The quoted bid rates or amounts shall be inclusive of all taxes (but excluding provincial sales tax on services), duties, and cess, etc as applicable fourteen (14) days prior to the date of bid opening, and no claim on this account shall be entertained by PAA.

16. The completed Bid form shall be submitted in accordance with the instructions prescribed by PPRA for submitting electronic bids through EPADS on or before the closing date and time. Electronic bids will be opened by using EPADS on the same day 30 minutes after bid closing time.

17. Original bid submitted electronically shall also be submitted physically along with *Bid Security* in a Sealed Envelope and addressed and delivered in person or sent by Registered post / courier so that it reaches well in time before the opening date, as notified by the PAA. The sealed envelope shall have the name of work, as mentioned in invitation to bids, written on top of it. In case of any discrepancies between the bid submitted physically and on EPADS, the latter shall prevail. The instrument of Earnest Bid Security shall compulsorily be submitted in physical form on the opening date and time, whereas submission of the bid physically is recommended but not mandatory.

18. When a bid is accepted, a receipt for the *bid security* forwarded therewith shall thereupon be given to the Contractor. In the event of a bid being rejected the *bid security* forwarded with such unaccepted bid shall thereupon be returned to the Contractor.

19. The receipt given by an accountant or clerk for any money paid by the Contractor will not be considered as an acknowledgement of payment to the PAA and the Contractor shall be responsible for seeing that he procures a receipt signed by the Divisional Engineer or his authorized officer.

20. Bids will be opened and read in public on the date and time for the opening. Bids whose bid security is received after the time set for receipt shall be rejected. Bidders who submit their bid security, but their bids are not uploaded on EPADS or fail to show on EPADS will be considered and held as non-participants.

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21. Additional Director / Project Manager / Divisional Engineer or his duly authorized representative shall open bids in the presence of intending Contractor who may be present at the time and will enter the amounts of all the bids in a Comparative Statement in a suitable form.

22. PAA reserves the rights to postpone the date or time of submission and opening of Bids. Should the date of opening the Bids be postponed, PAA shall give notice of such postponement.

23. The bid shall remain valid for a period of One Hundred & Twenty (120) days from the date of bid opening. In exceptional cases, before this period expires, PAA may request an extension—no longer than the original validity period. Bidders may refuse to extend the bid validity without losing their Bid Security. Those who agree must extend the Bid Security accordingly but cannot change their bids.

24. PAA is not bound to award the Contract to the lowest or to any Bidder and reserves the right to reject any or all Bids and to waive any formalities in the Bids received such as deviations in the use and presentation of the specified Bidding Documents and forms, if it appears to be in the interest of the PAA.

25. Bid shall be accepted by the competent officer of PAA. The acceptance of the Bid shall bind the Bidder to execute the Contract Agreement within the specified period failing which the Bidder shall forfeit his Bid Security not as penalty, but as liquidated damages.

26. For works costing more than Rs. 10 Million, the Contractor shall furnish to the PAA within fourteen (14) days after receipt of Letter of Acceptance, a Performance Security in the form of an irrevocable Bank Guarantee from the Banks approved by PAA (as per the list provided in Appendix-E to Bidding Documents) for an amount equaling to five percent (5%) of the total amount of bid at the time of signing the agreement. The irrevocable Performance Security shall have validity till thirty (30) days after the date of final completion of works. The bond for Performance Security shall be executed on non-judicial stamp paper of appropriate value.

27. For works costing more than Rs. 65 Million, the Contractor may be given a Mobilization Advance of up to 10% of the bid cost by PAA on production of an irrevocable bank guarantee of an equivalent amount from Banks approved by PAA (as per the list provided in Appendix-E to Bidding Documents). The same will be recovered at the rate of 10% of gross amount of the running bills of the Contractors.

28. Prior to engaging in the bidding process, the bidders should at their own cost, read and acquaint themselves with the PAA's procedure for blacklisting of contractors and suppliers available on PAA website: (*https://paawebadmin.paa.gov.pk/media/fdpcknji/caao-003-escw.pdf*)

Attachment:

(i) Technical Specifications (Annexure-A)
(ii) Eligibility Criteria (Annexure-B)
(iii) Technical Evaluation Criteria (Annexure-C)
(iv) Technical Compliance Sheet (Annexure-D)
(v) Drawings (Annexure-E)
(vi) HSE Manual for Contractors, Suppliers & Concessionaires (Annexure-F)

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MEMORANDUM

a)	**Name of Work**	**REPLACEMENT OF OBSOLETE & DETERIORATED CRAC UNITS SERVING RADAR AND AIR NAVIGATION FACILITIES AT AREA CONTROL CENTRE, JIAP – KARACHI**
b)	**General Description of Works**	
c)	**Bid shall be enclosed with (Bid Security)**	Call Deposit Receipt, Pay Order, or a Banker's Cheque from a scheduled Bank in Pakistan, of an amount mentioned in the invitation to bids.
d)	**Security Deposit (including Bid Security)**	Five per cent (5%) of the Contract Price.
e)	**Deduction of Income Tax**	As per Income Tax Ordinance 2001 amended from time to time.
f)	**Time allowed for the work**	**11 Months** (from the date of written order to commence)
g)	**Bill of Quantities**	As per attached schedule.

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LETTER OF OFFER FOR EXECUTION OF WORKS

I / We hereby submit our offer (bid) for the execution of the work specified in the above written memorandum within the time specified in each memorandum at the rates specified therein, and in accordance with the specifications, designs, drawings and instructions and with such materials as are provided for by and in all other respects in accordance with such conditions so far as applicable.

2. I / We understand that all the Schedules and Annexes attached hereto form part of this Bid.

4. I / We agree to abide by this bid for the period of one-hundred twenty (120) days from the date fixed for receiving the same and it shall remain binding upon us and may be accepted at any time before the expiration of that period.

3. Should this bid be accepted, I / We hereby agree to abide by and fulfil all the terms and provisions of the said conditions of contract annexed hereto so far as applicable or on default thereof to forfeit and pay to the Pakistan Airports Authority (PAA) the sum of money mentioned in the said conditions.

5. Unless and until a formal Agreement is prepared and executed, this bid, together with your written acceptance thereof, shall constitute a binding contract between us.

6. I / We undertake, if our bid is accepted, to execute the Performance Security referred to in Conditions of Contract for the due performance of the Contract.

7. I / We understand that you are not bound to accept the lowest evaluated or any bid you may receive.

8. I / We do hereby declare that the Bid is made without any collusion, comparison of figures or arrangement with any other person or persons submitted a bid for the Works.

9. As security for due performance of the undertakings and obligations of this Bid, we submit herewith a *Bid Security* in the amount of _____ drawn in your favour or made payable to you and valid for a period of twenty-eight (28) days beyond the period of validity of bid.

Dated the _____ day of _____ 20_____

Witness **[Signature of Contractor]**

Address

The above bid is hereby accepted by me on behalf of PAA.

Dated the _____ day of _____ 20_____

[Signature of Officer by whom accepted]

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(On appropriate valued non-judicial stamp papers)

PAA FORM OF AGREEMENT

THIS CONTRACT AGREEMENT (hereinafter called the "Agreement") made on the _____ day of _____ 20_____ between **PAKISTAN AIRPORTS AUTHORITY,** established under the Pakistan Airports Authority Act, 2023, having its Head Office at Terminal-I, JIAP, Karachi, through its duly authorized officer (hereinafter called the "PAA") of the one part;

AND

M/s._____ registered with Pakistan Engineering Council as a licensed Constructor / Operator, having its office at _____ "through its duly authorized person namely _____ (designation) (hereinafter called the "Contractor") (which term shall include its successors-in-interest, authorized representatives and executors) of the other part.

WHEREAS the PAA is desirous that certain Works, *viz* _____ should be executed by the Contractor and has accepted a Bid by the Contractor for the execution and completion of such Works and the remedying of any defects therein.

NOW this Agreement witnesseth as follows:

1. In this Agreement words and expressions shall have the same meanings as are respectively assigned to them in the General Conditions of Contract hereinafter referred to.

2. The following documents after incorporating addenda, if any, shall be deemed to form and be read and construed as part of this Agreement, viz:

(a) The Letter of Acceptance;
(b) The completed Letter of Offer for Execution of Works;
(c) The General Conditions of Contract;
(d) The Special Conditions of Contract (if attached).
(e) The Bill of Quantities;
(f) The Specifications; and
(g) The Drawings

3. In consideration of the payments to be made by the PAA to the Contractor as hereinafter mentioned, the Contractor hereby covenants with the PAA to execute and complete the Works and remedy defects therein in conformity and in all respects within the provisions of the Contract.

4. The PAA hereby covenants to pay the Contractor, in consideration of the execution and completion of the Works as per provisions of the Contract, the Contract Price or such other sum as may become payable under the provisions of the Contract at the times and in the manner prescribed by the Contract.

IN WITNESS WHEREOF the parties hereto have caused this Contract Agreement to be executed on the day**,** month, and year first before written in accordance with their respective laws.

_____	_____
(For and on behalf of Contractor)	(For and on behalf of PAA)
CNIC No. _____	

Signed, Sealed and Delivered in the presence of:

Witness (1):	Witness (2):
_____	_____
(Name, CNIC No. and Address)	(Name, CNIC No. and Address)

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TECHNICAL BID

PROVISIONING OF PRECISION CONTROL AIR-CONDITIONING UNITS AT JIAP

REPLACEMENT OF OBSOLETE & DETERIORATED CRAC UNITS SERVING RADAR AND AIR NAVIGATION FACILITIES AT AREA CONTROL CENTRE, JIAP – KARACHI

BILL OF QUANTITY / SCHEDULE OF PRICE

S. No	Description	Unit	Qty	Rate Per Unit		Amount (PKR)
				In Figures	In words	
01	Dismantling & removing unserviceable 16 ton capacity Denco make Precision Type Split (IDU & ODU) A.C Unit from old plant room with the help of suitable capacity crane, chain pully, fork lifter and skilled workers, Job includes removing of copper pipes, drain water pipes, electrical wiring and dismantling of existing grouted frames of the units with provisioning of all Tools and Plant with required consumables items, Further Loading, Transportation and Unloading of units from TR RADAR,ACC radar and ATM sites to CAA Store as per instruction of engineer incharge.	P/Job	04	Quoted	Quoted	Quoted
02	Providing & positioning of upward flow (Ducted type) Microprocessor based Close control precision air conditioning unit, "factory charged oil" as per given specifications on heavy duty vibration isolation rubber pad having following specifications. Air Conditioner Type: DX, Split Type and Dual Circuits. Cooling capacity min.= 56 Kw @ 42 deg. Centigrade ambient (inclusive of all applicable degradation at JIAP). Cooling /Supply Air Flow each min.= 16000 m3/h Indoor Unit - Almirah ducted type Up flow (Top Discharge), Easily accessible filters Required Output Working temperature 15 to 20 deg. Centigrade Relative Humidity Range required 40 to 60 % SP supply 200 Pa or 0.8 in H_2O Condenser Type: Air Cooled, Copper-Aluminum with Costal Area protection, with multiple fans. Number of Circuits = 02 nos. Refrigerant type: ASHRAE A1 Electrical specification 3Phase ~ 400V,N,PE,50Hz Unit should be equipped with: ♦HP/LP cutouts ♦Under voltage/ phase protection and sequence relay ♦Compressor motor protection ♦Evaporator fan motor protection ♦Condenser fan protection ♦Fan cycling pressure start ♦Compressor isolation valves ♦Humidifier	P/Job	04	Quoted	Quoted	Quoted

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S. No	Description	Unit	Qty	Rate Per Unit		Amount (PKR)
				In Figures	In words	
	♦De-humidifier • Factory installed control panel External Modbus (RS485) or BacNet for BMS connectivity					
03	Providing & laying in situ 1:2:3 cement concrete using screen graded bajri 3/4 inch and down gauge in foundation, basement and plinth i/c form work, compacting, curing and removal of form works etc. complete, foundation and basement upto 5 feet depth and plinth upto 4 feet height from ground level	CFT	79	Quoted	Quoted	Quoted
04	Providing/Fabrication & Fixing of M.S 1 ½" x 2" x ¼" angle iron" frame for indoor unit as per required size (approximately 6'6" x 2'3") of unit i/c painting of angle iron frame with anti-rust and best quality enameled paint (02 coats) as per instruction of engineer in charge.	P/Job	04	Quoted	Quoted	Quoted
05	Providing and fixing of CPVC SCH 80 1 size pipe for drain line with elbow, sockets, bends and unions from unit to main hole as per instruction of Engineer Incharge.	P/Mtr	50	Quoted	Quoted	Quoted
06	Providing, insulation, testing and commissioning of refrigerant copper pipe 1 ¼" size, 22 gauge for discharge & liquid line with all type of fitting like, elbow, clamping, aero flex insulation, wrapping tape, etc complete in all respect as approved by the Engineer incharge	P/Rft	390	Quoted	Quoted	Quoted
07	Providing /welding, brazing and installation of copper or copper alloy hand shut off valve (on both sides), Filter/Drier set in liquid line & liquid site glass in each circuit as per required size on both circuit of unit. All items from approved manufacturer.	P/Job	04	Quoted	Quoted	Quoted
08	Final pressure testing with Nitrogen (dry) gas, leak detecting, vacuums including gas charging with Refrigerant (R-410a or compatible) in the system as per manufacturer recommendations. Job also includes, commissioning, configuration, testing, trial operation, adjustments, calibration, de-bugging, configuring all set-ports as per the OEM instructions, complete in all respect as per instruction of Engineer Incharge.	P/Job	04	Quoted	Quoted	Quoted
09	Fabricating & fixing of 20 SWG GI sheet for supply air duct & supply air plenum box i/c hanging of duct with MS threaded rods, angle iron, duct sealant, rowel bolt & nut/bolts as per standard practice. Checking of air leakage from joints through light method as per instruction of engineer In charge.	P/Sft	1760	Quoted	Quoted	Quoted
10	Fabricating & fixing of 22 SWG GI sheet for supply air duct i/c hanging of duct with MS threaded rods, angle iron, duct sealant, rowel bolt & nut/bolts as per standard practice. Checking of air leakage from joints through light method as per instruction of engineer In	P/Sft	1150	Quoted	Quoted	Quoted

S. No	Description	Unit	Qty	Rate Per Unit		Amount (PKR)
				In Figures	In words	
	charge.					
11	Wiring for sub-main with 4 core 10mm² standard copper conductor PVC insulated & PVC sheathed circular/flat cable I/C 2.5 mm single core PVC insulated wire as CC in 30mm (1-1/4″) dia UPVC conduit fitted on surface as required.	P/Mtr	95	Quoted	Quoted	Quoted
12	Providing and laying 4-core, 16mm PVC insulated and PVC sheathed 600/1000 Volt Grade with stranded copper conductor, unarmoured LT Cable in existing all kind of conduit or cable duct as per Pak P.W.D specifications as required	P/Mtr	40	Quoted	Quoted	Quoted
13	Providing and installing opposed blade Volume Control Dampers of Prime Quality Aluminum of minimum 14SWG thickness, (the quadrant volume damper shall be multi-leaf type, with a maximum blade width of 8// heavy duty quadrant operators of brass with stand off mountings on thermally insulated ducts to provide clearance between the duct surface and operator, equal to the thickness of the insulation, capable of being locked at desired position conveniently wit engraved graduation, provided with a baked enamel finish with nut/bolt and gasket complete in all respect as approved and directed by the Engineer Incharge.	P/Sq Ft.	5490	Quoted	Quoted	Quoted
14	Providing, peeling & fixing of Close Cell-Flexible Elastomeric Foam Insulation-Density 60kg/M3 Self Adhesive reinforcing Mesh Scrim Durable Nitrile Butadiene Rubber (NBR) sheet Antimicrobial, Fire Retardant min. Thickness 100MM having built-in/factory applied cladding min. 99 Micron Aluminum PET-AL-PE Ultra Violet Radiation resistant, on HVAC air ducts whit the help of skilled workers. Job include wrapping of NBR type tape-UV-99 Micron UV plus aluminum-PET-AL-PE Ultra Violet Radiation min. thickness 99 micrometer on both vertical and horizontal joints and make best vapor barrier wrapping of insulation complete in all respect, as per instructions of Engineering Incharge.	P/Sft	2910	Quoted	Quoted	Quoted
15	Providing & fixing of water proof sound liner parachute type 25mm thick having density 24 Kg/m3 inside supply duct with cut screw complete from all respect.	P/Sft	2280	Quoted	Quoted	Quoted
16	Providing of approved colour powder coated Non-vision grille. Supply air diffuser with resistors & louvers for wind directions adjustment (vertical and horizontal), made of best quality aluminum. Nominal Rectangular profile with border having size 3/4". Counter sink fixing holes for screw-fixing or hooks for springs. Complete in all respect as per instructions of Engineer Incharge.	P/Sq. In	9292	Quoted	Quoted	Quoted
17	Provisioning and installation of insulated Flexible Duct 8" Dia including both ends	P/Rft	60	Quoted	Quoted	Quoted

S. No	Description	Unit	Qty	Rate Per Unit		Amount (PKR)
				In Figures	In words	
	jubilee Clamps Aluminum Tape etc complete in all respect					
18	Providing installation, testing and commissioning of refrigerant copper pipe 5/8" size 22 gauge with all type of fitting like, elbow, clamping, aero flex insulation, wrapping tape etc complete in all respect as approved by the Engineer Incharge.	P/Rft	390	Quoted	Quoted	Quoted
19	½" Thick cement plaster 1:3 on walls and columns etc. basement, plinth, mezzanine and ground floor including making edges, corners and curing etc complete. Job also include fixing of given rubber foundations.	P/Sft	214	Quoted	Quoted	Quoted
20	Wiring for sub-main with 3 core 2.5 mm² standard copper conductor, PVC insulated and PVC sheathed circular/flat cable I/c 1.5 mm² single core PVC insulated ware as ECC in 25 mm (1") dia UPVC conduit fitted on surface as required.	P/Mtr	425	Quoted	Quoted	Quoted
Total						**XXXXXXX**

Total Amount in words :xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx.

Divisional Engineer ES (E&M)
JIAP – Karachi

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ANNEXURE - A

TECHNICAL SPECIFICATIONS PRECISION AIR CONDITIONER/ CRAC

PART 1 - GENERAL

1.1 **DESCRIPTION**

A. This section specifies process cooling split systems air conditioning unit.

B. Definitions:

1. Energy Efficiency Ratio (EER): A ratio calculated by dividing the cooling capacity in Btu per hour by the power input in watts at any given set of rating conditions, expressed in Watts (Btu/h) per watt.

2. Integrated Energy Efficiency Ratio (IEER): Calculated by weighting the EER values at different load capacities and adding them together. The formula is based in the approximate number of hours a unit spends at each load point throughout its life. A minimum of four loads points are used for the calculation.

3. Coefficient of Performance (COP): A ratio calculated by dividing the change in heating or cooling capacity (Btu/h) to the energy consumed by the system (kW), expressed in Btu/kWh.

4. Unitary (AHRI): Consists of one or more factory-made assemblies, which normally include an evaporator or cooling coil, a compressor and condenser combination, and may include a heating function.

5. CRAC Units: Computer Room Air Conditioning Units.

1.2 **RELATED WORK**

A. Dismantling of existing 16 TR capacity units from plant room both IDU and ODU complete with all accessories, cabling, pipings, ductings, Distribution Boards, foundations and allied items complete in all respect as required. Loading, shifting to designated location and Unloading of all old material.

B. Safe dismantling of Plant Room Old RADAR side wall, raised floor and concrete floor up to required depth.

C. Construction of hollow block masonry wall up to slab height on Old RADAR room at demarcation to extend the existing Plant room, also properly cover the glass window/ventilator.

D. Repair, maintenance and painting (approved colour) of the TR Radar Plant Room main double swing gate to achieve air tightness.

E. Fabrication and installation of machine-made GI air ducts with sleeves at wall crossing, VCD, insulation and Air Handling Devices etc. Job also includes all civil works, cutting, chiseling, drilling, and dust free wall opening (wet cutting/slot cutting or any other approved means) without damaging or disturbing existing facility &

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operations, for satisfactory during works & installation of return air grill/s and making good as per origins.

F. Providing and installation of copper pipes with valves, filter/drier set, sight glasses, including insulation, pressure testing and dehydrating.

G. Electrification and control cabling works including termination through perforated type cable trays as per best engineering practices, applicable Codes and Standards.

H. Casting of foundation pads with fixing of frames for both IDU and ODU units.

I. Provisioning, laying of Condensate Drainage including tubular foam insulation up to nearest drain point.

J. Providing, Placement, Installation, all interconnections of new units in all respect.

K. Air Balancing at RADAR TR and UPS Room.

L. Small RO/desalination plant with 48 Hours Day Tank including complete connection with water supply, Units end and waste water.

M. Testing, Commissioning trial run of new units complete in all respect.

N. Operation and Maintenance training of the PAA Officials by OEM trained Engineer.

1.3.1 SUBMITTALS (BIDDING).

The following documents shall be submitted by bidders with technical bid.

A. Submit SHOP DRAWINGS, PRODUCT DATA, and SAMPLES (if any).

B. Information and material submitted under this section shall be marked “SUBMITTED TECHNICAL PROPOSAL, COMPUTER-ROOM-AIR-CONDITIONERS”, with applicable paragraph identification.

C. Manufacturer’s Literature and Data Including: Rated capacities (at design indoor and outdoor conditions), EER/COP, operating characteristics, required specialties and accessories in the Bill of Quantity/ Schedule of Quantity. Submit published catalog selection data showing equipment ratings and compliance with required sensible ratio.

1. Indoor Air Conditioning Unit
2. Air Cooled Condensing Unit / Outdoor unit

D. Submit detailed equipment assemblies with dimensions, operating weights, required clearances.

E. Submit proposed wiring diagrams for power, alarm and controls.

F. The contractor shall submit the manufacturer recommended priced list of spares and consumable for 02 years of continuous operations of the units and OEMs’ critical spares list alongwith the technical proposal. These spares shall be treated separately from warranty/ defect liability period spares. Spares mentioned under PAA SCC para 67.26.9 are treated separately.

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1.3.2 AS BUILT/POST COMPLETION SUBMISSION.

A. Completed System Readiness Checklists and Site Acceptance Tests (SATs) protocols provided by the OEM and completed by the contractor, signed by a qualified technician and dated on the date of completion, in accordance with the Commissioning requirements.

B. Complete three (03) sets (01 original and two photocopy) of documentations including operation, maintenance and troubleshooting instructions/manual, parts lists with elaborated/exploded views, control parameters ranges, set point, alarm and shutdown values, calibrations values, applicable test and calibration certificates, field wiring drawings, OEM equipment wiring diagram certified drawings should be furnished with the project, necessary field instructions should be affixed firmly at the relevant secure location on the equipment and should be waterproof. Soft copies of the manuals and CAD drawings shall also be provided on write-protected optical media.

   i. The contractor shall be responsible for the preparation of final as-built drawings (Electrical, Mechanical, Ducting, HVAC) PAA (GCC 54). All the drawings shall be approved by the Engineer Incharge in order to be valid. Both hard and soft (CAD Version) of drawing must be provided to PAA

1.4 QUALITY ASSURANCE

A. The unit and complete work shall be accepted after completion of successful SAT.

1.5 GUARANTEE

A. The unit shall be guaranteed against all mechanical defects in material, parts or workmanship and shall be repaired or replaced at the Contractor's expense within the period of one year from final acceptance. Contractor shall adhere to service response time given in the Special Terms and Conditions of the Contract to troubles during the guarantee period.

1.6 APPLICABLE PUBLICATIONS

The publications listed below form a part of this specification to the extent referenced. The publications are referenced in the text by the basic designation only. Where conflicts occur these specifications and the BOQ Specifications will govern. Latest revision of the under mentioned documents may be used where applicable:

The Precision Air Conditioning (CRAC) units shall be factory-manufactured, tested and performance-rated in accordance with the latest applicable edition of AHRI Standard 1360/1361, “Performance Rating of Computer and Data Processing Room Air Conditioners”, and ANSI/ASHRAE Standard 127, “Method of Testing for Rating Air-

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Conditioning Units Serving Data Center and Other Information Technology Equipment (ITE) Spaces", as applicable **OR** demonstrably equivalent internationally recognized standards. The equipment shall also comply with applicable requirements of relevant EN/IEC standards for refrigeration safety, electrical safety, acoustic characteristics.

PART – 2 – PRODUCTS

2.1 FLOOR-MOUNTED UNITS 56 KW (16 TONS)

A. Description: DX, Split Type and Dual Circuits, factory assembled, prewired, and prepiped indoor and outdoor units (Packaged); consisting of cabinet, fans, filters, humidifier, and controls.

B. Cabinet and Frame: Welded steel, braced for rigidity, and supporting compressors and other mechanical equipment and fittings.

C. Doors and Access Panels: Galvanized steel or Powder Coated with polyurethane gaskets, hinges, and concealed fastening devices.

D. Refer BOQ.

E. Finish of Interior Surfaces: Surfaces in contact with the airstream shall comply with requirements in ASHRAE 62.1.

F. Finish of Exterior Surfaces: Baked-on, textured vinyl enamel; colour as selected from manufacturer's standard colors to match computer equipment.

G. Floor Stand: Welded tubular steel, vibration isolation pads.

H. Supply-Air Fan(s):Double-inlet, forward-curved centrifugal, statically and dynamically balanced.

I. Drive: Direct-drive, variable-speed drive fans with aluminum wheels; with multiple fans, the number of fans shall not exceed four.

J. Compressors: variable speed with oil strainer, internal motor overload protection, resilient suspension system, crankcase heater, manual-reset high-pressure switch, and pump-down low-pressure switch. Compressors shall have multiple stages of cooling.

K. Refrigeration Circuits: Two independent (08 TR x 02 Nos); each with hot-gas mufflers, thermal-expansion valve with external equalizer, liquid-line solenoid valve, liquid-line filter-dryer, sight glass with moisture indicator, service shutoff valves, charging valves, and charge of Nitrogen/refrigerant.

L. Refrigerant Evaporator Coil: Alternate-row or split-face-circuit, direct-expansion coil of seamless copper tubes expanded into straight aluminum fins.

1. Coil assembly shall be mounted over stainless-steel drain pan complying with ASHRAE 62.1 and condensate reservoir.

M. Remote Air-Cooled Refrigerant Condenser: Corrosion-resistant cabinet, copper-tube straight E-coated (Electro-deposition coating) aluminum-fins coils arranged for two circuits, multiple direct-drive propeller fans with permanently lubricated ball bearings,

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and single-phase motors with internal overload protection, integral electric control panel and disconnect switch. Control capacity by cycling fans or modulating fan speeds. The heat exchanger shall be suitably treated/coated for use in the costal environment of Karachi Pakistan, with adequate protection against corrosion due to saline and hard atmospheric condition.

N. Heating Coil: Electric-Resistance Heating Coil: Enclosed finned-tube electric elements arranged for minimum of two stages, with thermal safety switches, manual-reset overload protection, and branch-circuit overcurrent protection.

O. Filter Extended-Surface, Washable, Panel type: Pleated, lofted, reinforced fabric; supported and bonded to welded plastic coated wire grid; enclosed in suitable size and thickness frame.

1. Thickness: 50 mm (2 inches).
2. Initial Resistance: 33 (0.13) Pa (inches wg).
3. Recommended Changeover Resistance: 250 (1) Pa(inches wg).
4. Arrestance: 90 percent according to ASHRAE 52.1.
5. MERV Rating: 8, according to ASHRAE 52.2.
6. Fire Resistant UL/ classified or FM listed.

P. Humidifier:

1. Infrared Humidifier: High-intensity quartz lamps mounted above stainless-steel evaporator pan, serviceable without disconnecting water, drain, or electrical connections; pre-piped and using condensate water from cooling coils with stainless-steel or brass float-valve mechanism; located in bypass airstream; with flush-cycle timer and solenoid drain valve.

OR

2. Ultrasonic Humidifier with feed water RO (Reverse Osmosis) or demineralization Setup. Serviceable w/o disconnecting water, drain or electrical connection, pre pipe with SS or brass float valve mechanism. High grade and industrial type piezo-electric transducer, electronic isolator circuit, reservoir, valve, fan, sensor, demineralization cartridge & control board and hydrostat (if applicable) should be utilized.
3. Electrode Steam Humidifier: Self-contained, microprocessor-controlled unit with disposable, polypropylene-plastic cylinders, and having field-adjustable steel electrodes and stainless-steel steam dispersion tube.
4. Plumbing Components and Valve Bodies: Plastic, linked by flexible rubber hosing, with water fill with air gap and solenoid valve incorporating built-in strainer, pressure-reducing and flow-regulating orifice, and drain with integral air gap.
5. Control: Fully modulating to provide gradual 0 to 100 percent capacity with field-adjustable maximum capacity; with high-water probe.

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6. Drain Cycle: Field-adjustable drain duration and drain interval.

Q. Controls:

1. Integral Electrical Controls: Unit-mounted electrical enclosure with piano-hinged door, grounding lug, combination magnetic starters with overload relays, circuit breakers and cover interlock, and fusible control-circuit transformer.

   a. Disconnect Switch: Non-automatic, molded-case circuit breaker with handle accessible when panel is closed and capable of preventing access until switched to off position.

2. Electronic-Control System: Solid state, with start button, stop button, temporary loss of power indicator, manual-reset circuit breakers, temperature control, humidity control, and monitor panel.

R. Microprocessor-Control System: Continuously monitors operation of process cooling system; continuously displays room temperature and room relative humidity; sounds alarm on system malfunction and simultaneously displays problem. If more than one malfunction occurs, system displays fault in sequence with room temperature and continues to display fault when malfunction is cleared until system is reset.

S. Malfunctions:

1. Power loss, loss of airflow, clogged air filter, high room temperature, and low room temperature.
2. High humidity.
3. Low humidity.
4. Smoke/fire, water under floor,
5. Supply Air fan overload,
6. Compressor No. 1, overload compressor No. 1 low pressure compressor No. 1, high pressure.
7. Compressor No. 2 overload, compressor No. 2, low pressure, compressor No. 2 high pressure.
8. Digital Display:
   a. Control power on.
   b. Humidifying.
   c. Dehumidifying
   d. Compressor No. 1 operating.
   e. Compressor No. 2 operating.
   f. Heat operating.
   g. Economy cooling.
   h. Fans Speed
   i. Compressor No. 1 & 2 Operating Hours

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j. Temperature and Pressure Data of Refrigerant at locations on both High Pressure and Low Pressure side for fault finding and trouble shootings.

9. Push buttons shall stop and start process cooling system, silence audible alarm, test indicators, and display room's relative humidity.

T. BAS Interface: Factory-installed hardware and software to enable the BAS to monitor, control, and display unit status and alarms via an open protocol BACnet/ External Modbus (RS485) data interface.

U. Hardwired Points: Monitoring: On-off status, common trouble alarm, space temperature, space relative humidity.

V. Compatible with ASHRAE 135 BACnet/ External Modbus (RS485) Industry-accepted, open-protocol for communication interface with the BAS shall enable the DDC or the BAS operator to remotely control and monitor the unit from an operator workstation. Control features and monitoring points displayed locally at unit control panel shall be available through the DDC or the BAS.

2.2 FAN MOTORS

A. Comply with NEMA designation, temperature rating, service factor, enclosure type, and efficiency requirements. All the motors shall be Premium class Efficiency minimum IE-4 heavy duty with Class F insulation type and same degree of temperature rise. Motors having capacity above 100 watts shall be thermally protected. Maximum reliability shall be ensured with minimum MTBF.

B. Motor Sizes: Minimum size as indicated. If not indicated, large enough so driven load will not require motor to operate in service factor range above 1.0. Provide high static fan motors for ducted applications.

C. Controllers, Electrical Devices, and Wiring: Comply with internationally recognized Standards and Codes.

2.3 SPECIAL TOOLS

A. If any part of equipment furnished under these specifications requires a special tool for assembly, adjustment, setting, or maintenance and the tool is not readily available from the commercial tool market, furnish the necessary tools with equipment as a standard accessory.

2.4 REFRIGERANT:

The offered refrigerant must be ASHRAE Standard 34 Group A1.Group A22 refrigerant are only allowed, if the offered units are equipped with factory integrated leak detection mitigation system fully compliant with ASHRAE standard 15. In care this feature is required. It should be included without any additional cost to PAA.

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2.5 CORROSION CONTROL

A. Remote Outdoor Condenser Coils:

1. Epoxy Immersion Coating – Electrically Deposited: The multi-stage corrosion-resistant coating application comprises of cleaning (heated alkaline immersion bath) and reverse-osmosis immersion rinse prior to the start of the coating process. The coating thickness shall be maintained between 0.6-mil and 1.2-mil. Before the coils are subjected to high-temperature oven cure, they are treated to permeate immersion rinse and spray. Where the coils are subject to UV exposure, UV protection spray treatment comprising of UV-resistant urethane mastic topcoat shall be applied. Provide complete coating process traceability for each coil and minimum five years of limited warranty. The coating process shall be such that uniform coating thickness is maintained at the fin edges. The quality control shall be maintained by ensuring compliance to the applicable ASTM Standards for the following:
   a. Salt Spray Resistance (Minimum 6,000 Hours)
   b. Humidity Resistance (Minimum 1,000 Hours)
   c. Water Immersion (Minimum 260 Hours)
   d. Cross-Hatch Adhesion (Minimum 4B-5B Rating)
   e. Impact Resistance (Up to 160 Inch/Pound)

B Exposed Outdoor Cabinet

1. Casing Surfaces (Exterior and Interior): All exposed and accessible metal surfaces shall be protected with a water-reducible acrylic with stainless steel pigment spray-applied over the manufacturer's standard finish. The spray coating thickness shall be 2-4 mils and provide minimum salt-spray resistance of 1,000 hours (ASTM B117) AND 500 hours UV resistance (ASTM D4587).

PART 3 - EXECUTION

3.1 INSTALLATION

a. Handle and install refrigeration units and accessories in accordance with the instructions and recommendations of the manufacturer.
b. Coordinate installation of Computer room Air Conditioning Units with Building Layout and Equipment positions.
c. Field Refrigerant Piping: Use Copper refrigerant tube, ASTM B280, cleaned, dehydrated and sealed, marked ACR on hard temper straight lengths. Coils shall be tagged ASTM B280 by the manufacturer.
d. Fittings, Valves and Accessories:
   1. Copper fittings: Wrought copper fittings, ASME B16.22.
   a. Brazed Joints, refrigerant tubing: Cadmium free, AWS A5.8/A5.8M, 45 percent silver brazing alloy, Class BAg-5.

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b. Solder Joints, water and drain: 95-5 tin-antimony, ASTM B32 (95TA).

2. Strainers: Designed to permit removing screen without removing strainer from piping system, and provided with screens 80 to 100 mesh in liquid lines DN 25 (NPS 1) and smaller, and 40 mesh in suction lines. Provide strainers in liquid line serving each thermostatic expansion valve, and in suction line serving each refrigerant compressor not equipped with integral strainer.
3. Refrigerant Moisture/Liquid Indicators: Double-ported type having heavy sight glasses sealed into forged bronze body and incorporating means of indicating refrigerant charge and moisture indication. Provide screwed brass seal caps.
4. Refrigerant Filter-Dryers: UL listed, angle or in-line type, as shown in the contract documents. Conform to ARI Standard 730. Heavy gauge steel shell protected with corrosion-resistant paint; perforated baffle plates to prevent desiccant bypass. Size as recommended by manufacturer for service and capacity of system with connection not less than the line size in which installed. Filter driers with replaceable filters shall be furnished with one spare element of each type and size.

Flexible Metal Hose: Seamless bronze corrugated hose, covered with bronze wire braid, with standard copper tube ends.

5. Install outdoor equipment to withstand wind velocity of 50 kmph (31 mph) in coastal areas.

3.2 CONNECTIONS

a. Coordinate piping installations and specialty arrangements with schematics on Drawings and with requirements specified in piping systems. If Drawings are explicit enough, these requirements may be reduced or omitted.

b. Install piping adjacent to machine to allow service and maintenance.

c. Water and Drainage Connections: Comply with applicable requirements provide adequate connections for condensate drain, and humidifier flushing system.

3.3 FIELD QUALITY CONTROL

a. Tests and Inspections:

b .Inspect for and remove shipping bolts, blocks, and tie-down straps.

c. After installing Precision Air Conditioner/ CRAC and after electrical circuitry has been energized, test for compliance with requirements.

d. Operational Test: After electrical circuitry has been energized, start units to confirm proper motor rotation and unit operation.

e. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.

B. After startup service and performance test, wash filters and flush humidifier.

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3.4 STARTUP, TESTING AND COMMISSIONING

A. The PAA will observe startup and contractor testing of installed equipment. The contractor shall submit the criteria for Site Acceptance Test (SAT) to PAA for approval. The contractor shall carry out the Tests on Completion in accordance with OEMs' documentations and site conditions, after approval of SAT criteria and providing the documents in accordance with Technical Specifications Clause1.3 Submittals.

B. The contractor shall give to the PAA not less than 02 days notice of the date after which the contractor will be ready to carry out each of the Tests on Completion. The Tests on completion shall be carried out in the following sequence

   a. Pre-commissioning tests, which shall include the appropriate inspections and ("dry" or "cold") functional test to demonstrate that each item of Plant can safely undertake the next stage.

   b. Commissioning tests, which shall include the specified operational tests to demonstrate that the Works or Section can be operated safely and as specified, under all available operating conditions; and

   c. Trial operation, which shall demonstrate that the Works or Section perform reliably and in accordance with the Contract.

   d. Trial operation shall not constitute taking-over. As soon as the equipment have passed each of the Tests on Completion described in sub-paragraph (a), (b) or (the contractor shall submit a certified report of the results of these Tests to the PAA

3.5 DEMONSTRATION AND TRAINING

a. Submit training plans and instructor qualifications in accordance with the Commissioning requirements 07 days prior for approval.

b. The contactor shall provide complete operation, maintenance advance fault diagnostics and repair/ services for the offered system, including a comprehensive training program (minimum 10 theoretical & practical sessions) for ten10 PAA nominees at a PAA-approved location in Karachi Pakistan. The contactor fully arrange and bear all cost for training materials, local transport, meals and refreshments for all candidates ,as well as round trip domestic air fares, boarding lodging and transporting for outstation trainees. The training program shall be conducted by OEM certified trainer.

--- E N D ---

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(Annexure – B)

ELIGIBILITY CRITERIA

Sr.	Documentary Evidences	Provided = YES Not Provided = NO Not Applicable = N/A
(a)	Attach & Upload Original Bid Security furnished for Rs. 1.5 million in accordance with General instructions, Invitation to Bids and Instructions to Bidders. Note: The physical financial instrument (signed and stamped by bidder on back) shall reach the office of Divisional Engineer ES (E&M) – JIAP in envelope before opening of bids & Original Bid Security must be uploaded electronically on EPADS.	
(b)	Attached & upload scanned copy of CNIC of the bidder. Note : Dully attested (By Notary Public Oath Commissioner). Upload a clear and legible copy	
(c)	Attach & Upload Certificate of incorporation / Memorandum & Article of Association or Partnership Deed / Sole Proprietorship etc. *Note: Dully attested (by notary public/ oath commissioner) document shall be acceptable*. Upload a clear and legible copy of the applicable	
(d)	Attach & Upload Joint Venture Agreement (if applicable). In case of foreign firm/company, Joint Venture with Pakistani firm and registration with SECP OR give an undertaking for non-applicability *Note: Dully attested (by notary public/ oath commissioner) document shall be acceptable*, upload a clear and legible copy of the applicable documents	
(e)	Attach & Upload Affidavit on non-judicial stamp paper valuing PKR : 500/- to the effect that the firm has not been blacklisted by any Government, Semi Government and Autonomous Body. *Note: Dully attested (by notary public/ oath commissioner)*	
(f)	Attach & Upload Active Taxpayer Status (ATL) & NTN and Professional Tax Certificate (Valid//Updated). *Note: Valid documents and dully attested (by notary public/ oath commissioner)*	
(g)	Attach & Upload Valid Certification/ License by the Pakistan Engineering Council (PEC) i.e. C-4 (or above) and relevant Specialization Codes i.e. ME-01. *Note: Dully attested (by notary public/ oath commissioner)*	
(h)	Attach & Upload Power of Attorney (if applicable) on non-judicial stamp paper valuing PKR : 500/- *Note: Dully attested (by notary public/ oath commissioner)* OR give an undertaking for non-applicability	
(i)	Each page of following documents to be signed and stamped by Authorized Representative of the Bidder, as detailed below: Annexure – A, Pakistan Airports Authority Contract Documents (including HSE Manual, Additional Instructions to bidders, PAA GCC and PAA SCC Annexure – B, Pakistan Airports Authority Forms i. Form of Agreement (page-xi) ii. Performance Bond Guarantee Appendix – C, iii. Mobilization Advance Guarantee Appendix – D iv. List of Bans Appendix – E	
(j)	▪ Refer to the Important Notes given below in the Eligibility Criteria for technical evaluation criteria (Annexure – C)	

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IMPORTANT NOTES:

1. The bidders who respond 'Yes' in all of the above requirements and provide documentary evidences in support of their 'Yes' shall be technically evaluated. The technical evaluation / marking shall be carried out according to the technical evaluation criteria. Any "No" to above checklist or non-submission of supporting documents or furnishing forged documents or concealment of facts or submission of false information may lead to disqualification of such bidder.

2. The Technical Proposal shall be examined for compliance with Technical Specifications. The bidders are required to provide relevant technical data i.e. brochure, catalogue or Product Data Sheets with technical bids in shape of compliance matrix against technical specifications.

3. Client may, at its discretion, waive any minor non-conformity or any minor irregularity in bid. This shall be binding on all competitors and Client reserves the right for such waivers.

4. Client may at its absolute discretion, exclude or reject any bid that in the reasonable opinion of Client contains any false or misleading claims or statements. Client has no liability to any person for excluding or rejecting any such bid.

5. All bids fulfilling requirements mentioned in above para 2 shall be considered as technically responsive.

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Annexure - C

TECHNICAL EVALUATION CRITERIA

REPLACEMENT OF OBSOLETE & DETERIORATED CRAC UNITS SERVING RADAR AND AIR NAVIGATION FACILITIES AT AREA CONTROL CENTRE, JIAP – KARACHI

PAA/ Bidding Requirement		Bidder Response	
A	B	C	D
Sr. No.	**Description of Requirement**	**Compliant/ non-compliant**	**Required Enclosure/Document**
1.	**Compliance with technical compliance sheet (Appendix-I) 15 Marks** The offered precision air conditioning (CRAC) unit. 16 TR. Upflow, ducted type, shall comply with requirements specified in the technical compliance sheet (TCS). The bidder shall submit the duly completed and signed technical compliance sheet (Appendix-I), supported by relevant OEM/manufacture technical literature and documentary evidence wherever specified therein. (Appendix). [Note: Full compliance to the part - I key performance requirements of TCS is mandatory criteria for conducting any further evaluation]		
2.	**OEM Manufacturing Facility and Certification – 15 Marks** The shall explicitly state the country of origin (COO) and provide the complete physical address of the manufacturing facility where the offered units will be manufactured and assembled. The offered equipment shell be manufactured and assembled at an OEM-owned manufacturing facility third-party contract manufacturing. Original design manufacturing (ODM) and white-label manufacturing shall not be acceptable. The manufacturing facility shall hold valid ISO 9001 and ISO 14001 certifications. With scope of certification convering the relevant: manufacturing activities. Full 15 marks shall be awarded upon submission of: • Declared country or origin: • Complete physical address of the manufacturing facility: • Valid ISO 9001 certificate; and • Valid ISO 14001 certificate, With the certificates being verifiable and applicable to the declared manufacturing facility. Document Required: OEM/Manufacturing declaration and valid ISO certificates.		
3.	**Operational Reliability and Design Life – 10 Marks** The offered equipment shall be designed for continuous		

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	24/7/365 operation in critical aviation Radar Station application. The compressors and fans incorporated in the offered unit shall I have a manufacturing/OEM-declared design or expected operating life of not less then 50,000 operating hours, based on the manufacture's published technical documentation or formal certification. Full 10 marks shall be awarded upon submission of OEM/manufacturer documentation explicitly confirming compliance with the above requirement. Documents Required: OEM certificate, technical literature or manufacture's documented design-life statement		
4.	**International Installation Experience 10 Marks** The offered CRAC product model series shall have a documented installed base at least 500 units across at least three (03) geographically distinct continents, excluding installations within Pakistan. For the purpose of this criterion, an installation shall mean a completed and operational installation of the offered CRAC product:/model series. Full 10 marks shall be awarded where the bidder demonstrate a documents installed base of 500 or more units meeting the above requirement. Where the documented installed base is less than 500 units, 01 mark shall be deducted for every shortfall of five (05) units or pan: thereof below 500 units, subject to a maximum deduction of the marks allocated to this criterion. The deduction should be calculated against the total qualifying installed base not separately for each continent. Documents Required: OEM certificate/declaration supported by verifiable project references, installed-base statement or other documentary evidence acceptable to PAA.		
5.	**Installations within Pakistan -10 Marks** The offered CRAC product/model series shall have at least three (03) successfully completed and operational installations Pakistan, each having a cooling capacity of SO kW or greater, critical infrastructure facilities such as telecommunication facilities, data centers or aviation facilities, completed within the ten (10) years proceedings the date of submission of bids. For each verified qualification installation below three (03), 05 marks shall be deducted. Documents Required: work orders/Contracts, completion certificates, client certificates or other verifiable documentary evidence identifying the CRAC product/model series, cooling capacity, location, client and data of completion		
6.	**Availability of Spare Parts - 05 marks** The OEM shall guarantee the availability of genuine spare parts for the offered CRAC units for minimum period of ten (10) years from the date expiry of the defect liability period (DLP). Full 05 marks shall be awarded upon submission of an OEM undertaking confirming compliance with this requirement. Documents Required: OEM/undertaking/Certificate		

7.	**Local After-Sales Service Facility – 10 Marks** The OEM or its duly authorized representative shall have an operational services/workshop facility within Karachi, Pakistan adequately equipped and staffed to provider sales support, including inspection, troubleshooting, repair and maintenance services for the offered CRAC equipment. Where the facility is operated by an authorized representative, the bidder shall submit valid documentary evidence of OEM authorization. Documents Required: facility details, photographs/evidence of available service infrastructure and valid OEM authorization, where applicable		
8.	**Bidders Relevant Experience 10 Marks** The bidder shall have a minimum of five (05) years of demonstrable experience in the installation. Repair and maintenance or precision air conditioning/CRAC systems or equivalent large scale HVAC system. The experience shall be supported by relevant work orders/contracts and completion certificates or client certificates. Documents Required: work order contract and completion client certificates demo starting the required experience.		
9.	**OEM Experience in Manufacturing and Support of CRAC Systems – 15 Marks** The OEM of the offered precision air conditioning (CRAC) units shall have a minimum of twenty (20) years of documents experience in the manufacture and after-sales support or precision air-conditioning/CRAC system of comparable application and capacity. Full 15 marks shall be awarded for 20 years or more of such experience. For each complete year below 20 years, 01 marks shall be deducted, subject to maximum deduction of 15 marks. Documents Required: OEM company profile, official company history, product literature, certifications, and /or other verifiable documentary evidence demonstrating the duration of relevant CRAC manufacturing and after sales support experience.		

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Annexure – D

TECHNICAL COMPLIANCE SHEET

REPLACEMENT OF OBSOLETE & DETERIORATED CRAC UNITS SERVING RADAR AND AIR NAVIGATION FACILITIES AT AREA CONTROL CENTRE, JIAP – KARACHI

Sr. No	PAA Specification	Specifications of Offered Unit	OEM Literature / Certificate Reference
Part – 1. Key Performance Requirements (Mandatory Criteria)			
a.	Cooling capacity min. = 16 TR or 56 Kw @ 42 deg. Centigrade ambient at MCWB 23 deg. Centigrade. (inclusive of all applicable degradation at JIAP Karachi Pakistan, Lat: 24.907N, Lon 67.16E, Elev: 31m)		
b.	Type: DX, Split Type and Dual Circuits		
c.	Sensible Heat Ratio (SHR) 0.92 or above		
d.	Configuration: upward flow, deducted type		
e.	Required Output (indoor) working temperature 15 to 20 deg. Centigrade		
f.	Indoor Relative humidity Range required 40 to 60 %		
g.	External Static Pressure (Supply) 200 Pa or 0.8 inch H2O		
h.	Microprocessor-Control System with OEM loaded software lifetime license and minimum 05 year updates (if applicable), complete configuration and site set points. All software and configuration Backup must also be provided to PAA without any additional cost.		
Part – 2. Constructor Requirements: (each criterion carries 01 marks)			
a.	Indoor: Almirah/Floor Standing construction and ducted type up flow (Top discharge) type		
b.	Outdoor: Dual-Circuit (Split-Coil) Remote Air-Cooled Condenser round copper tubes mechanically bonded to aluminum fins		
c.	Outdoor Coils with costal environment treatment		
d.	Cabinet and Frame: Heavy Duty, strong foundations for compressors, fans, coils, other mechanical equipment and fittings.		
e.	Lockable Door and Access Panels: Powder Coated with polyurethane gaskets, with hinges, and concealed fastening devices.		
f.	Finish of Exterior Surfaces: Section 2.4 of the Technical Specifications		
g.	Electrical 3Phase – 400V(+/- 05%) , N,P,E, 50Hz (+/-02%)		

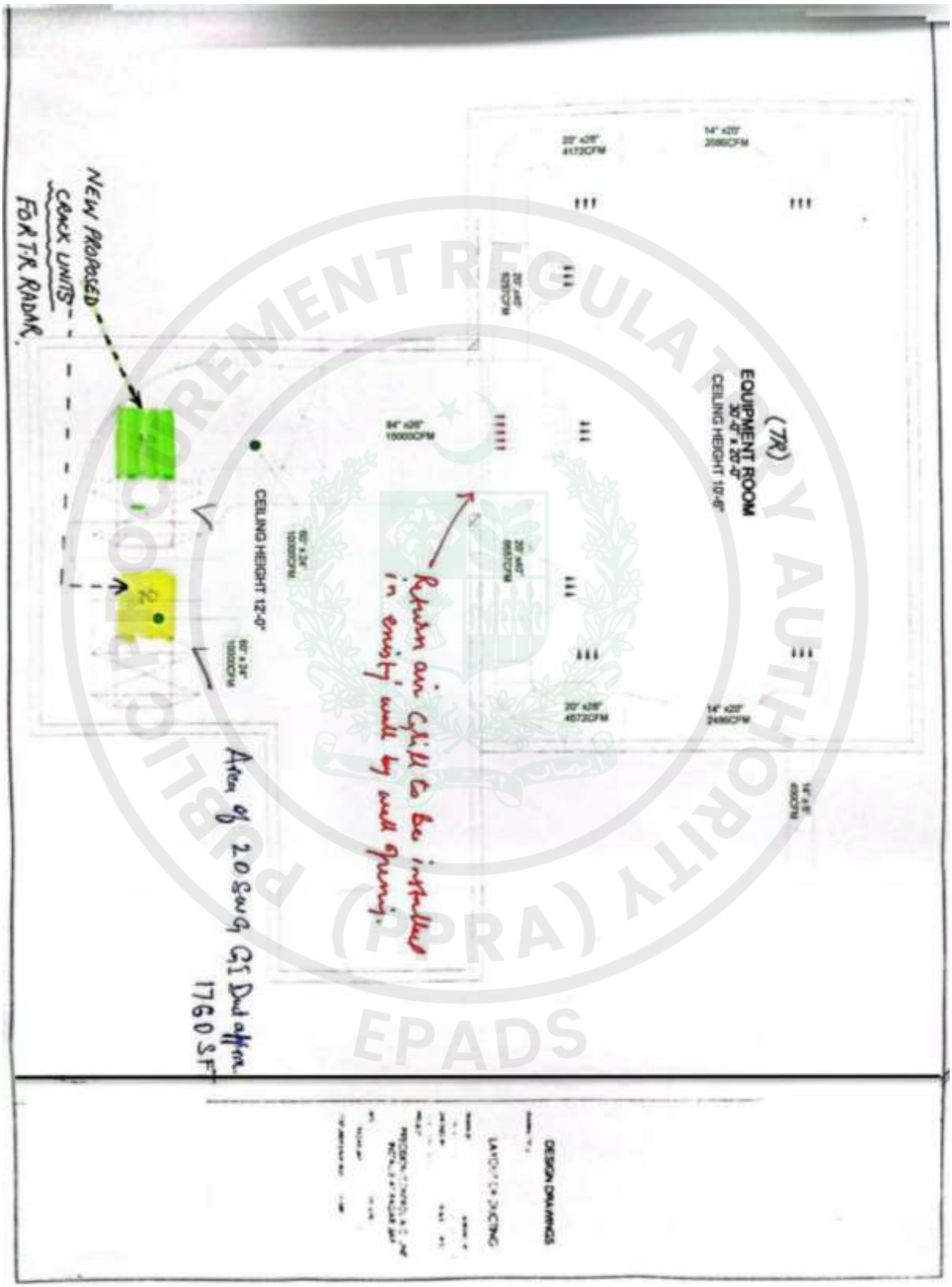
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h.	Outdoor Drive: Direct-drive, variable-speed drive fans with suitable aluminum alloy wheels; with multiple fans, the number of fans shall not exceed four.		
i.	Outdoor Drive: Direct-drive, variable-speed drive fans with suitable metallic alloy or aluminum alloy wheels; with multiple redundant fans, the number of fans shall not exceed four.		
j.	Indoor Drive: Direct-drive Variable –speed drive fans with suitable strength and redundancy.		
k.	Compressors: Variable Speed (Independent for each circuits) oil strainer, internal motor overload protection, resilient suspension system, crankcase heater, manual-reset high-pressure switch, and pump-down low-pressure switch		
i.	Heating Coil: Electrical-Resistance Heating Coil: Enclosed finned-tube electrical elements arranged for multi stages, with thermal safety switches, manual-reset overload protection, and branch-circuit overcurrent protection.		
m.	Unit safeties High Pressure / Low Pressure Cutouts • Under voltage / phase protection and sequence relay / protection • Compressor motor protection • Evaporator fan motor protection • Condenser fan protection • Fan cycling pressure start • Compressor isolation valves		
n.	BAS interface, External Modbus (RS485) or BacNet for BMS connectivity additional Hardwired Points, Full remote monitoring, status reading and alarm aggregation should be allowed directly to third party BMS without OEM brand server application or any licensing fee/ financial subscription		
o.	Contract spares as per PAA SCC para 67.26.9 are included in the bid/ offer price and should be provided with units at the time of delivery.		

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Annexure – E

DRAWINGS



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PAA GENERAL CONDITIONS OF CONTRACT

1 Definitions

In the Contract (as hereinafter defined) the following words and expressions shall have the meanings assigned to them except where the context otherwise requires:

1.1 **"PAA"** means Pakistan Airports Authority and includes its duly authorized agents, successors and assigns.

1.2 **"Competent authority"** means an officer of PAA under whose competence the acceptance of bid lies.

1.3 **"Contractor"** means the person or persons, firm or Company whose Bid (as hereinafter defined) has been accepted by PAA and includes the Contractor's personal representatives, successors and permitted assigns, but does not include any sub-contractor.

1.4 **"Divisional Engineer"** means an Engineer duly authorized by the PAA for execution of work.

1.5 **"Representative of Divisional Engineer"** means any duly authorized officer or officers appointed by the PAA to perform the duties set forth.

1.6 The expression **"Works"** means all the works specified or set forth and required in and by the said specifications, drawings and schedule hereto or to be hereafter specified or required in such explanatory instructions and drawings and also in such additional Instructions and drawings as such from time to time, during the progress of the work hereby contracted for, be supplied by PAA.

1.7 **"Contract"** means the Conditions of Contract specifications, Drawings, priced schedule of Quantities, Bid and the Contract Agreement.

1.8 **"Contract Price"** means the amount / sum stated in the letter of Acceptance, subject to such additions thereto or deductions there from as may be made under the provisions hereinafter contained.

1.9 **"Construction Plant"** means all appliances, equipment or things of whatsoever nature required in or about the execution, completion or maintenance of the Works or Temporary works.

1.10 **"Temporary Works"** means all temporary works of every kind required in or about the execution completion or maintenance of the work.

1.11 **"Drawings"** means the drawings referred to in the Specifications and any modifications of such drawings approved in writing by the PAA and such other drawings as may from time to time be furnished or approved in writing by the Divisional Engineer.

1.12 **"Site"** means the lands and other places on, under, in, through which the works are to be executed or carried out and any other lands or places provided by the PAA for purposes of the Contract.

1.13 **"Approved"** means approved in writing including subsequent written confirmation of previous verbal approval and "Approval" means approved in writing including as aforesaid.

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1.14 **"Bid"** means a tender, bid, or proposed remuneration, price, or cost submitted by a natural person, firm, corporation, or other legal entity in response to an invitation to bid, expressing the intent to undertake a specifically defined scope of works in conformity with the prescribed specifications, designs, drawings, instructions, and materials as stipulated under the Contract, and in compliance with all other applicable terms and conditions, including any and all annexures, schedules, or supplementary documents attached to or referenced in the offer.

2 Extent of Contract The Contract comprises the construction, completion and maintenance of the Works and except in so far as the Contract otherwise provides, the provision of all labour, materials, construction plant, temporary works and everything whether of temporary or permanent nature required in and for such construction, completion and maintenance so far as the necessity for providing the same as specified in or reasonably to be inferred from the Contract.

3 Documents Mutually Explanatory The several documents forming the Contract are to be taken as mutually explanatory of one another and in case of ambiguities or discrepancies, the same shall be explained by the Divisional Engineer whose explanation in this respect shall be final.

4 Sufficiency of Bid The Contractor shall be deemed to have satisfied himself before bidding as to the correctness, completeness and sufficiency of his Bid for the works and of the rates and prices stated in the priced schedule of Quantities which rates and prices shall except in so far as otherwise provided in the Contract cover all his obligations under the Contract and all matters and things necessary for the proper completion and maintenance of the Works.

5 Inspection of Site The Contractor shall inspect and examine the Site and its surroundings and shall satisfy himself before submitting the bid, as to the nature of ground and sub soil, the form and nature of the Site, the quantities and nature of the work and materials necessary for the completion of the works and the means of access of the Site, the accommodation he may require and in general shall himself obtain all necessary information as to risk, contingencies and other circumstances which may influence or affect his Bid.

6 Possession of Site The Divisional Engineer, with the written order to commence the works will give to the Contractor possession of the Site as may be required to enable the Contractor to commence and proceed with the construction of the works in accordance with the program referred to in clause 10 hereof and otherwise in accordance with such reasonable proposals of the Contractor as he shall by notices in writing to the Divisional Engineer make and will from time to time as the works proceed give to the Contractor possession of such further portions of the Site as may be required to enable the Contractor to proceed with the construction of

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Works with due diligence in accordance with the said programme or proposals (as the case may be).

7 Drawings

Three copies of each of the approved Drawings shall be furnished by PAA to the Contractor free of cost. The Contractor shall provide and make at his own expense any further copies required by him.

8 Drawings to be kept on Site

One copy of each of the Drawings furnished to the Contractor as aforesaid shall be kept by the Contractor on the Site and the same shall at all times be available for inspection and use by the Divisional Engineer the representative of the Divisional Engineer.

9 Further Drawing and Instructions

The Divisional Engineer shall have full power and authority to supply to the Contractor from time to time during the progress of the works such further Drawings and instructions as shall be necessary for the purpose of the proper and adequate execution and maintenance of the works and the Contractor shall carry out and be bound by the same.

10 Programme to be furnished

As soon as practicable after the acceptance of his Bid, the Contractor shall submit to the Divisional Engineer for his approval a programme showing the order of procedure and method in which he proposes to carry out the Work and shall furnish for his information, particulars in writing of the Contractor's arrangements for carrying out of the works and the constructional plant and temporary works which the Contractor intends to supply, use or construct, as the case may be. The submission to and approval by the Divisional Engineer or the Representative of the Divisional Engineer of such programme or the furnishing or such particulars shall not relieve Contractor of any of his duties or responsibilities under the Contract.

11 Commencement

The Contractor shall commence the Works on Site after the receipt by him of an order in writing to commence work from the Divisional Engineer and shall proceed for the same with due diligence (time being the essence of the Contract on the part of the Contractor).

12 Contractor's Superintendence

The Contractor shall give or provide all necessary superintendence during the execution of the Works and as long thereafter as the Divisional Engineer may consider necessary for the proper fulfilling of the Contractor's obligations under the Contract. The Contractor or his competent, qualified and authorized agent or representative approved by the Divisional Engineer in writing (which approval may at any time be withdrawn) is to be constantly on the Works and shall give his whole time to the superintendence of the same if such approval shall be withdrawn by the Divisional Engineer, the Contractor shall without any delay, after receiving written notice of such withdrawal, remove the Agent from the site and shall not thereafter the employ him again on the Site in any capacity and shall replace him by another agent approved by the Officer, Such authorized agent or representative shall receive, on behalf of the Contractor directions and instructions from the Divisional Engineer or the representative of the Divisional Engineer. The Contractor shall also

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employ full time Engineer / Sub-Engineer, duly qualified in Civil / Electrical / Mechanical Engineering and having professional experience of at least three years for the purpose of execution of the proposed works and giving full time engineering / technical superintendence during all phases of execution and for receiving technical directions and instructions from the Divisional Engineer.

13 Contractor's Employees

The Contractor shall provide and employ on the Site in connection with the execution and maintenance of the Works:

13.1 Only such technical personnel as are skilled and experience in their respective fields and such sub-agents, foremen and leading hands as are competent to give proper supervision to the work they are required to supervise.

13.2 Such skilled and semi-skilled and unskilled labour as is necessary for the proper and timely execution and maintenance of the Works.

14 Removal of Contractor's Employees

The Divisional Engineer shall have the power to object in writing to and require the Contractor to remove forthwith from the Work any person employed by the Contractor in or about the execution or maintenance of the works who in the opinion of the Divisional Engineer is misconducting himself or is incompetent or negligent in the proper performance of his duties or whose employment is otherwise considered reasonably by the Divisional Engineer to be undesirable. Any person so removed from the works shall be replaced without delay by a competent substitute approved by the Divisional Engineer. The Contractor shall not demand the reasons from the Divisional Engineer for requiring the removal of any one of his employees.

15 Supply of Plant Materials and Labour

Except where otherwise expressly specified, the Contractor shall at his own expense supply and provide all the Constructional plants, work materials, both for temporary and for permanent works, labour (including the supervision thereof) transport to or from the site and in and about the works and other things of every kind required for the construction, completion and maintenance of the works.

16 Works to be executed in accordance with specifications drawings etc.

The Contractor shall execute the whole and every part of the work in the most substantial and workman-like manner and both as regards materials and otherwise in every respect in strict accordance with the specifications. The Works executed by the Contractor shall also conform exactly, fully and faithfully to the designs, drawings and instructions in writing relating to the work issued by the Divisional Engineer.

17 Action where no specification

In the case of any class of work for which there is no such specifications, such work shall be carried out in accordance with the written instructions, and requirements of the Divisional Engineer.

18 Quality of Material,

All materials and workmanship shall be of the respective kinds described in the Contract and in accordance with the instructions of the Divisional Engineer and shall be subjected from time to time to such tests as the

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Workmanship and Tests

Divisional Engineer may direct at the place of manufacture or fabrication on the Site or at all or any of such places. The Contractor shall provide such assistance, instruments, machines, labour and materials as are normally required for examining, measuring and testing any work and the quality, weight or quantity of any materials used and shall supply samples of materials before incorporation in the works for testing as may be selected and required by the Divisional Engineer. All samples shall be supplied by the Contractor at his own cost. The cost of making all tests specified in the Contract shall be borne by the Contractor.

19 Delegation of Power to Divisional Engineer's Representatives.

The Divisional Engineer may from time to time in writing delegate to the representatives of the Divisional Engineer any of the powers and authorities vested in the Divisional Engineer. Any written instruction or approval given by the representative of the Divisional Engineer to the Contractor within the term of such delegation (but not otherwise) shall bind the Contractor and the PAA, as though it has been given by the Divisional Engineer provided as follow:

19.1 Failure of the representative of the Divisional Engineer to disapprove any work or materials shall not prejudice the power of the Divisional Engineer thereafter to disapprove such work or materials and to order the pulling down, removal or breaking up thereof.

19.2 If the Contractor shall be dissatisfied by reason of any decision of the representative of the Divisional Engineer he shall be entitled to refer the matter to the Divisional Engineer who shall thereupon confirm, reverse or vary or modify such decision, and whose decision shall be final.

19.3 The Agreement shall be rescinded by the PAA and the final measurements shall be recorded by the Divisional Engineer or his any authorized representative shall record the final measurement and Contractor will not claim for any item not recorded by the Divisional Engineer or his representative.

20 Access to Site

The Divisional Engineer and any person authorized by him shall at all times have access to the Works and to the Site and to all Workshops and places where work is being done or where materials, manufactured articles or machinery are being obtained for the Works and the Contractor shall afford every assistance in or obtaining the right to such access.

21 Way leave etc.

The Contractor shall bear all expenses and charges for special or temporary way leaves required by him in connection with access to the Site. The Contractor shall also provide with the written approval of Divisional Engineer at his own cost any reasonable additional accommodation at Site required by him for the purposes of the Works.

22 Rate of Progress and permission to work during Night.

The whole of the materials, plant and labour to be provided by the Contractor and the mode, manner and speed of execution and maintenance of the works are to be of a kind and conducted in a manner approved by the Divisional Engineer. Should the rate of progress of the Works or any

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part thereof be at any time in the opinion of the Divisional Engineer too slow to ensure the completion, the Divisional Engineer shall so notify the Contractor in writing and the Contractor shall thereupon take such steps as may be necessary and the Divisional Engineer may approve to expedite progress so as to complete the Works by the prescribed time or extended time for completion. If the work is not being carried on by day and by night and the Contractor shall request permission to work by night as well as by day, then, if the Divisional Engineer shall grant such permission, the Contractor shall not be entitled to any additional payments. The contractor shall indemnify the PAA from and against all claims, liabilities, demands, proceedings, costs and expenses whatsoever in regard or in relation to such permission. All work at night shall be carried out without unreasonable noise and disturbance.

23 Time for Completion

Subject to any requirement in the Specification of any portion of the Works before completion of the whole of the works, the whole work shall be completed within the stipulated time.

24 Extension of time for completion

Should the amount of extra or additional work of any kind or other special circumstances of any kind whatsoever (acts of God and events beyond the control of PAA etc.) which may occur be such as fairly to entitle the Contractor to an extension of time for the completion of the work, the Divisional Engineer shall determine and grant such an extension of time. Provided that the Divisional Engineer is not bound to take into account any extra additional work or other special circumstances unless the Contractor has within fourteen (14) days after such work has been commenced or such circumstances have arisen, delivered to the representative of the Divisional Engineer full and detailed particulars of any claim for extension of time to which he may consider himself entitled in order that such claim may be investigated at the time.

25 Termination of Contract for slow progress

If in the opinion of the Divisional Engineer the progress of the Works is slow that it cannot be completed within the prescribed period or within the extended period granted to the Contractor, the Divisional Engineer shall give a notice in writing to the Contractor calling upon him to speed up the work by employing more labour and by increasing the rate of supply of material, equipment and plant to an extent to be mentioned in the notice. In case the Contractor fails to comply with the requirements of the notice within ten days from its issue, the Divisional Engineer shall have the power to have the works completed through any other agency at the risk and cost of the Contractor. In any such event, the work executed by the Contractor shall be measured up and all plant, machinery, equipment and material at Site will be taken over by the Divisional Engineer after preparing and inventory thereof, such stores to be used for the completion of the work will be at the cost of the Contractor. All payments due to the Contractor shall be withheld till the completion of the work and any loss suffered by the PAA or expenditure incurred in getting the works executed, shall be recovered from the Contractor.

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26 Action and Compensation payable in case of works below specification

If it shall appear to the Divisional Engineer or his representative, that any work has been executed with unsound, imperfect or unskilled workmanship or with materials of any inferior description or that any materials or articles provided by him for the execution of the work are unsound or of a quality inferior to that contracted for or otherwise not in accordance with the contract, the Contractor shall on demand in writing from the Divisional Engineer specifying the work, materials or articles complained of notwithstanding that the same may have been inadvertently passed, certified and paid for, forth-with rectify, or remove and reconstruct the work so specified and provide other proper and suitable materials or articles at his own cost; and in the event of his failing to do so with in a period to be specified by the Divisional Engineer in his demand aforesaid, then the Contractor shall be liable to pay compensation at the rate of one percent on the total cost of work for every day not exceeding ten days apart from the cost of rectification, while his failure to do so, shall continue and in the case of any such failure the Divisional Engineer may rectify or remove, and re-execute the work which may include additional work necessary to strengthen or set right the unsound work carried out by the Contractor or remove and replace with others, the materials or articles complained of as the case may be at the risk and cost of the Contractor in all respect.

27 Security Deposits

The Contractor shall permit the PAA at the time of making any payment to him for work done under the contract to deduct such sum as will amount to be five per cent (5%) of all money so payable; such deductions to be held by PAA by way of security deposit. The sum five per cent (5%) of the amount of the bills including the earnest money held by the PAA by way of security deposit shall be paid back to the Contractor after the satisfactory expiration of Period of Maintenance as defined in the clause 49 hereof.

28 Forfeiture of Security deposit

28.1 In any case in which under any clause, or clauses of this agreement the Contractor shall have rendered himself liable to pay compensation amounting to the whole of his security deposit (whether paid in one sum or deduction by instalments) the PAA shall have the power in its own discretion to adopt any of the following courses, best suited to the interest of the PAA.

a) To rescind the Contract (of which recession notice in writing by the Divisional Engineer to the Contractor shall be conclusive evidence) and in which case the security deposit of the Contractor as available with the PAA shall stand forfeited and be absolutely at the disposal of PAA.

b) To employ labour paid by PAA and to supply materials to carry out the work or any part of the work debiting the Contractor with the cost of the labour and the price of the materials (of the amount of which cost and price a certificate of the Divisional Engineer shall be final and conclusive against the Contractor) and crediting him with the new value of the work done, in all respect in the same manner and at the same rates as if it had been

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carried out by the Contractor under the terms of his Contract, the certificates of the Divisional Engineer as to the value of work done shall be final and conclusive against the Contractor.

c) To measure up the work of the Contractor and to take such part thereof as shall be unexecuted out of his hand, and to give it to another contractor to complete, in which case any expenses which may be incurred in excess of the sum which would have been paid to the original Contractor, if the whole work had been executed by him (of the amount of which exceed, the certificate in writing to the Divisional Engineer shall be final and conclusive) shall be borne and paid by the original Contractor and may be deducted from any money due to him by the PAA under the contract or otherwise or from his security deposit, or the proceeds of sale thereof or a sufficient part thereof.

28.2 In the event of any of the above courses being adopted by the PAA, the Contractor shall have no claim to compensation for any loss sustained by him by reason of his having purchased or procured any materials, or entered into any engagements or made any advance on account of or with a view to the execution of the work or the performance of the Contract. And, in case the Contract is rescinded under the aforesaid provisions, the Contractor shall not be entitled to recover or be paid any sum for any work therefore actually performed under this contract. Unless and until the Divisional Engineer will have certified in writing the performance of such work and the value payable in respect thereof, and he shall only be entitled to be paid the value so certified. Again, the Contractor will not in any manner hinder or prevent the owner or Divisional Engineer or any of the workmen and other employed by him from proceeding to complete the said buildings and works as aforesaid.

29 Liquidated damages for delay

If the Contractor fails to complete the works within the stipulated time for completion prescribed under the Contract, or any extended time allowed for completion in accordance with the Contract, then the Contractor shall pay to the PAA a sum equal to ten (10) per cent or less of the Contract Price as liquidated damages (and not as a penalty) for the delay beyond the time prescribed in the Contract or the extended time for completion, as the case may be. The said sum shall be payable by the sole fact of the delay without the need for any previous notice or any legal proceedings, or proof of damage, which shall in all cases be considered as ascertained. The PAA may, without prejudice to any other method of recovery, deduct the amount of such liquidated damages from any monies in its hands due or which may become due to the Contractor. The payment or deduction of such damages shall not relieve the Contractor from his obligation to complete the Works or from any other of his obligations and liabilities under the Contract.

30 Notice to be given before work is covered up

The Contractor shall give not less than five clear days' notice in writing to the Divisional Engineer or his representative before covering up or otherwise placing beyond the reach of measurement of any work, in order

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that the same may be measured, and correct dimensions thereof be taken before the same is so covered up or placed beyond the reach of measurement without the consent in writing of the Divisional Engineer or his representative, and if any work shall be covered up or placed beyond the reach of measurement without such notice have been given or consent obtained the same shall be uncovered at the Contractor's expense, or in default thereof no payment or allowance shall be made for such work on the materials, with which the same was executed.

31 Suspension of work

The Contractor shall on the written order of the Divisional Engineer suspend the progress of the works or any part thereof for such time or times and in such manner as the Divisional Engineer may consider necessary and shall during such suspension properly protect and secure the work so far as is necessary in the opinion of the Divisional Engineer. The extra cost (if any) incurred by the Contractor in giving effect to the Divisional Engineer's instructions under this clause shall be borne by the Contractor, if such suspension is:

a) as per the provision of the contract, or
b) Necessary for the proper execution of the work or by reason of weather conditions affecting the safety or quality or the Works or by some default on the part of the Contractor, or
c) Necessary for the safety of the works or any part thereof.

32 Care of works

From the commencement to the completion of the Works, the Contractor shall take full responsibility for the care thereof and of all temporary works, and in the event that any damage, loss or injury should happen to the Works or to any part thereof or to any temporary works from any cause whatsoever (save and except the "expected risk(s)" as defined in clause 33 hereof), the Contractor shall at his own cost repair and make good the same so that at completion, the works shall be in good order and condition and in conformity in every respect with the requirements of the contract and the Divisional Engineer's instructions. The Contractor shall also be liable for any damage to the Works occasioned by him in the course of any operations carried out by him for the purpose of complying with his obligations under Clause 50 hereof. The Contractor shall be fully responsible for the review of the Engineering design and details of the works and shall inform the PAA of any mistakes or incorrectness in such design and details which would affect the works.

33 Expected Risk

The "Expected Risk" are hostilities (where war be declared or not) invasion, act of foreign enemies, rebellion revolution insurrection or military or usurped power civil war or (otherwise than among the Contractor's own employees) riot, commotion or disorder or use by occupation by the PAA of any portion of the Works in respect of which a certificate of completion has been issued or any such operation of the forces of nature as reasonable foresight and ability on the part of the Contractor could not foresee or reasonably provide against (all of which are herein collectively referred as "the expected risk").

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34 Damage to persons and property.

The Contractor shall (except if and so far as the Contract provides otherwise) indemnify and keep indemnified the PAA and its Employees from and against all suits, claims, demands, proceedings, and liability of any nature or kind, including costs and expenses, for injuries or damages to any person or any property whatsoever which may arise out of or in consequence of acts or omissions of the Contractor or its agents, employees, servants or subcontractors in the execution of the Contract.

35 Accident or injury to Workmen

The PAA shall not be liable for or in respect of any damages or compensation payable at law in respect or in consequence of any accident or injury to any workman or other persons in the employment of the Contractor or any sub-contractor. The Contractor shall indemnify and keep indemnified the PAA against all such damages, compensation and against all claims, demands, proceedings, cost charges and expenses whatsoever in respect thereof or in relation thereto.

36 Insurance

The Contractor shall obtain and keep in force policies in respect of Erection All Risks, Contractor's All Risks and Workmen's Compensation act, which shall apply specifically and solely to the Contractor and shall fulfil all Contractor's obligations for Insurance in connection with this Contract from an Insurance Company in Pakistan having at latest AA rating from PACRA / JCR-VIS.

37 Compliance with Statutes, Regulations etc.

The Contractor shall conform in all respects with any such Statutes, Ordinances, Laws, Regulations, Bye-laws or requirements of any such local or other authority / authorities which may be applicable to the Works or to any Temporary Works and shall keep the PAA indemnified against all penalties and liability of every kind for breach of any such Statutes, Ordinances, Laws, Regulations, Bye-laws or requirements.

38 Fossils etc.

All fossils, coins, article of value or antiquity and structures and other remains or things of geological or archaeological interest discovered on the site of the Works shall as between the PAA and the Contractor be deemed to be the absolute property of the PAA and the Contractor shall take reasonable precautions to prevent his workmen or any other persons from removing or damaging any such article or thing and shall immediately upon discovery thereof and before removal acquaint the PAA of such discovery.

39 Variation

The Divisional Engineer may introduce any variations to the form, quality or quantity of the work or any part thereof which he considers necessary and for that purpose or if for any other reasons it shall, in his opinion be desirable, he shall have power to order the Contractor to do and the Contractor shall do any of the following:

a) increase or decrease the quantity of any work included in the Contract;
b) omit any such work;
c) change the character or quality or kind of any such work;

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d) change the levels, lines position and dimension of any part of the Works; and

e) execute additional work of any kind necessary for the completion of the works.

and no such variation shall in any way vitiate or invalidate the Contract nor it will entitle the Contractor of any claims for compensation whatsoever, but the value (if any) of all such variations shall be taken into account in ascertaining the amount of the Contract Price.

40 Order for variation to be in writing

No such variation shall be made by the Contractor without an order in writing from the Divisional Engineer. Provided that, subject to the provisions of the Contract, no order in writing shall be required for any increase or decrease in the quantity of any work where such increase or decrease is not the result of an order given under this Clause but is the result of the quantities exceeding or being less than those stated in the Bill of Quantities. If for any reason, Divisional Engineer considers it desirable to give any such order verbally, the Contractor shall comply with such order but shall get it confirmed in writing from the Divisional Engineer within four days of the issue of such verbal order.

41 Valuation of Variation

41.1 The Divisional Engineer shall determine the amount (if any) to be added to or deducted from Contract Price in respect of any variation, addition, or omission made by his order. The valuation of any variation, addition or omission shall be calculated on the basis of the unit prices contained in the Bill of Quantities if in the opinion of the Divisional Engineer the same shall be applicable; if not then on the market rates.

41.2 No deviation from specifications stipulated in the Contract or additional items of work shall be carried out by the Contractor unless the rates of the substituted, extra, altered or additional item have been approved in writing by the competent authority failing which the PAA will not be bound to entertain any claim on this account.

42 Quantities

The quantities set out in the Bill of Quantities are the estimated quantities of the work but they are not to be taken as the actual and correct quantities of the works to be executed by the Contractor in fulfilment of his obligation under the Contract.

43 Work to be Measured

The Divisional Engineer shall except as otherwise stated ascertain and determine by measurement the value of work done in accordance with the Contract. The Divisional Engineer shall, when he requires any part or parts of the Works to be measured, give notice to the Contractor or the Contractor's authorized agent or representative who shall forthwith attend or send a qualified agent to assist the Divisional Engineer or his representative in making such measurement and shall furnish all particulars required by either of them. Should the Contractor not attend or neglect or fail to send such agent, then the measurement made by the Divisional Engineer or approved by him shall be taken to be the correct

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measurement of the work. The purpose of measuring is to ascertain the volume of work executed by the Contractor and therefore determine the amount of the monthly payments.

44 Method of Measurement

The works shall be measured, notwithstanding any general or local custom except where otherwise specifically described or prescribed in the Contract.

45 Clearance of Site on Completion

On the completion of the Works, the Contractor at his own cost shall clear away and remove from the Site all Constructional plant, surplus materials, rubbish and Temporary Works of every kind and leave the whole of the Site and works clean and in a workman-like condition to the satisfaction of the Divisional Engineer, rubbish should be disposed of in the manner as directed by the Divisional Engineer or his representative.

46 Certificates for Completion of Works

46.1 When the whole of the Works have been substantially completed and have satisfactorily passed any test on completion as prescribed by the Contract, the Contractor may give a notice to that effect to the Divisional Engineer accompanied by an undertaking to finish any outstanding work during the Period of Maintenance. Such notice and undertaking shall be in writing and shall be deemed to be a request by the Contractor, for the Divisional Engineer to issue a Certificate of Substantial Completion in respect of the Works. The Divisional Engineer shall, within twenty-one (21) days of the date of delivery of such notice either issue to the Contractor a Certificate of Substantial Completion stating the date on which, in his opinion, the Works were substantially completed in accordance with the Contract or give instructions in writing to the Contractor specifying all the work which, in his opinion, are required to be done by the Contractor before the issuance of such Certificate. The Divisional Engineer shall also notify the Contractor of any defects in the Works affecting substantial completion that may appear after such instructions and before completion of the work specified therein. The Contractor shall be entitled to receive such Certificate of Substantial Completion within twenty-one (21) days of completion, to the satisfaction of the Divisional Engineer, of the work so specified and making good any defect so notified. Upon issuance of the Certificate of Substantial Completion of the Works, the Contractor shall be deemed to have undertaken to complete with due expedition any outstanding work during the Period of Maintenance.

46.2 Upon satisfactory completion of the work outstanding on the Works, the Divisional Engineer shall within twenty-eight (28) days of the expiration of the Period of Maintenance issue a Certificate of Final Completion to the Contractor. The Contract shall be deemed to be completed upon issuance of such Certificate, provided that the provisions of the Contract which remain unperformed shall remain in force for as long as is necessary to dispose of any outstanding matters or issues between the Parties.

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47 Period of Maintenance

The "Period of Maintenance" shall be of 18 Months duration unless otherwise specified in the Special Conditions of the Contract, calculated from the date of completion of the Works stated in the Certificate of Substantial Completion issued by the Divisional Engineer in accordance with the Clause 46 hereof or, in respect of any Section or part of the Works for which a separate Certificate of Substantial Completion has been issued, from the date of completion of that Section or part as stated in the relevant Certificate. The expression "the Works" shall, in respect of the "Period of Maintenance", be construed accordingly.

48 Completion of Outstanding Works and Remedying Defects etc.

During the Period of Maintenance, the Contractor shall finish the work, if any, outstanding at the date of the Certificate of Substantial Completion, and shall execute all such work of repair, amendment, reconstruction, rectification and making good defects, imperfections, shrinkages or other faults as may be required of the Contractor in writing by the Divisional Engineer during the Period of Maintenance and within fourteen (14) days after its expiration, as a result of an inspection made by or on behalf of the Divisional Engineer prior to expiration of the Period of Maintenance. To the intent that the works shall as soon as practicable after the expiry of the Period of Maintenance be delivered to the PAA in as good and perfect condition (fair wear and accepted tear) to the satisfaction of the Divisional Engineer as that in which they were at the commencement of the Period of Maintenance. All such outstanding work shall be carried out by the Contractor at his own expense if the necessity thereof shall, in the opinion of the Divisional Engineer, be due to the use of material or workmanship not in accordance with the Contract, or to neglect or failure on the part of the Contractor to comply with any obligation expressed or implied, on the Contractor's part under the Contract. In case the Contractor fails to comply with the requirements of the notice within ten days from its issue, the Divisional Engineer shall have the power to have the works completed through any other agency at the risk and cost of the Contractor.

49 Refund of Security Deposits

The Security Deposit shall not be refunded prior to 18 Months after the completion of the whole work, unless and until a certificate is issued by the Divisional Engineer for successful and satisfactory passing of the Period of Maintenance with no other liability on the Contractor.

50 Contractor's Liability for Damage done

If the Contractor or his workmen or servants shall break, deface, injure or destroy any part of a building, in which they may be working or any building, road, road kerbs, runway, taxiway, apron, culverts, ducts, fence enclosure, water pipes, cables, drains, electric or telephone or wire poles, trees, grass or grassland or cultivated ground contiguous to the premises on which the work or any part of it is being executed, or if any damage shall happen to the work, while in progress from any cause whatsoever, or any imperfections become apparent in it within three (03) months after a certificate, final or otherwise of its completion shall have been given by the Divisional Engineer as aforesaid, the Contractor shall make the same good at his own expense, or in default, the Divisional Engineer may cause the same to be made good by other workmen, and deduct the expense (of

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which the certificate of the Divisional Engineer shall be final) from any sums that may then, or at any time thereafter may become, due to the Contractor, or from his security deposit or the proceeds of the sale thereof, or a sufficient portion thereof.

51 Assignment & Sub-Letting

The Contractor shall not assign or sublet the Contract or any part thereof or any benefit or interest thereon or there under without the prior written consent of PAA. In case of failure, the Divisional Engineer shall by giving Notice in writing rescind the Contract and have the Works executed at the risk and cost of the Contractor.

52 Stores to be supplied by PAA

If the specification or estimate of the work provides for the use of any special description of materials to be supplied by PAA or if it is required that the Contractor shall use certain stores to be provided by the PAA (such materials and stores, and the prices to be charged therefore as hereinafter mentioned being so far as practicable for the convenience of the Contractor, but not so as in any way to control the meaning or effect of this Contract, specified in the schedule of memorandum hereto annexed). The Contractor shall be supplied with such materials and stores as required from time to time to be used by him for the purpose of the Contract only, and the value of the full quantity of materials and stores so supplied at the rates specified in the said schedule or memorandum may be set off or deducted from any sums then due, or thereafter to become due to the Contractor under the contract or otherwise or against or from the security deposit, or the proceeds of sale thereof. All materials supplied to the Contractor shall remain the absolute property of PAA and shall not on any account be removed from the Site of the work and shall at all times be open to inspection by Divisional Engineer. Any such material unused and in perfectly good condition at the time of the completion or termination of the Contract shall be returned to PAA; but the contractor shall not be entitled to return any such materials unless with such consent, and shall have no claim for compensation on account of any such materials so supplied to him, as aforesaid being unused by him, or for any wastage in or damage to any such materials.

53 Bills to be submitted monthly

A bill shall be submitted by the Contractor each month on or before the date fixed by the Divisional Engineer for all works executed in the previous month and the Divisional Engineer shall take or cause to be taken the requisite measurement for purposes of having the same verified, and the claim, as far as admissible, adjusted, if possible, before the expiry of ten days from the presentation of the bill. If the Contractor does not submit the bill within the time fixed as aforesaid, the Divisional Engineer may prepare a bill which shall be binding on the Contractor in all respects.

54 Completion drawings

The completion report of the work along with drawings on prescribed proforma shall be submitted by the Contractor in five copies along with the final bill. In case of failure to submit the completion report and completion drawings by the Contractor on the basis of which the work has been finally completed, the final bill shall be withheld till their submission. The completion report and drawings should be complete in all respects.

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Works relating to maintenance do not come under the preview of this clause.

55 Final Bills

The final bill shall be submitted by the Contractor within one month from the date of completion of the Works otherwise the Divisional Engineer's certificate of the measurement and of the total amount payable for the work accordingly shall be final and binding on all parties, and will not be called in to question by anyone.

56 Urgent repair

If by reason of any accident or failure or other event occurring to or in connection with the Works or any part thereof during the execution of the Works or during the Period of Maintenance any remedial or other work on repair shall in the opinion of the Divisional Engineer or his representative be urgently necessary and the Contractor is unable or unwilling at once to do such work or repair, the Divisional Engineer may by his own or other workmen do such work or repair as the Divisional Engineer or his representative may consider necessary. If the work or repair so done by the Divisional Engineer is work which in the opinion of PAA the Contractor was liable to do at its own expense, under the Contract, then all costs and charges properly incurred by the PAA, in so doing shall on demand be paid by the Contractor to the PAA or may be deducted by PAA from any monies due or which may become due to the Contractor. Provided always that the Divisional Engineer shall as soon as after the occurrence of any such emergency as may be reasonably practicable notify the Contractor thereof in writing.

57 Bribes, Commission etc.

Any bribe, commission gift or advantage given promised or offered by or on behalf of the Contractor or his partner, agent, or servant in relation to obtaining or to the execution of this or any other Contract with PAA, or given, promised, or offered by, or on behalf of, the Contractor, or his partner, agent, or servant, to any officer or person in the service or employment of PAA, who shall be in any way connected with the obtaining or the execution of this or any other Contract, shall in addition to any criminal liability, which he may incur subjects the Contractor to cancellation of this Contract, and also to payment of any loss resulting from any such cancellation. Any question or dispute to the commission of any offence under this Clause shall be settled by the PAA, in such manner as it deems fit and sufficient and its decision shall be final and conclusive.

58 Law governing the contract

This Contract shall be governed by and construed in accordance with the laws of the Islamic Republic of Pakistan, and the obligations, rights and remedies of the parties hereunder shall be determined in accordance with such laws. Resort to litigation by either of the parties in respect of any disputes should be had only before a court of appropriate and competent jurisdiction.

59 Increase or Decrease of Cost.

59.1 The Contractor is deemed to have quoted rates given in the Contract (Bill of Quantities) based on the prices of certain specified materials

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prevalent in the month during which the last day of the submission of Bid fell.

59.2 No price adjustment shall be allowed under this clause except in respect of the materials specified in Appendix-A to Bidding Document which have actually been incorporated in the Permanent Works during the corresponding period of increase or decrease.

59.3 Adjustment shall be allowed for the specified materials according to the method prescribed in the Appendix-A to Bidding Document.

59.4 All claims for additional payments under this Clause shall be lodged by the Contractor with the Divisional Engineer within such reasonable time from the date of occurrence of the event which, according to the Contractor, entitles him to such additional payments by PAA, but in no case after the expiry of twenty-eight (28) days thereof, such claims shall invariably be supported with all relevant necessary details and particulars required for proper verification thereof and the Divisional Engineer shall be entitled to require the Contractor to provide such further details / information as may be required for due and effective verification of such claims.

59.5 The Divisional Engineer shall verify and certify for payment, if any, claims lodged by the Contractor under this Clause within a period not exceeding twenty-eight (28) days from the date on which the same are submitted by the Contractor as aforesaid.

59.6 In case the PAA is entitled to recover from the Contractor any sum or sums under this Clause arising from any decrease in the said prices for materials, the provisions of this Clause shall apply mutatis mutandis to such recoveries by the PAA.

59.7 If the Contractor fails to complete the works within the time for completion, adjustment of prices therefore until the date of completion of the works shall be made using either the indices or prices, whichever are more favourable to the PAA, provided that if extension of time is granted the above provision shall apply only to adjustments made up to the expiry of such extension of time.

59.8 No escalation shall be allowed to the Contractor in respect of the period extended for the completion of the work due to his own fault.

60 Water Supply/ Power Supply etc.

The Contractor should make his own arrangement for water and power supply required for execution of work and nothing will be paid for the same, by the PAA. Provided that in case water supply is allowed by the PAA to the Contractor from water mains passing through areas where the work is required to be carried out, the Contractor shall pay the cost of water to the department at one-half (1/2) per cent of the total cost of work for drinking purpose and one (01) per cent of the total cost of the items of work involving use of water (that is for constructional purposes). The Contractor shall bear full charges for laying its water lines of all length and size / dimensions from the mains to the site of his underground tanks as he may require and construct for storage purposes at its own cost.

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61 Abandonment of work by PAA. PAA shall have the power to abandon any work whether in progress or otherwise and in such an event, the Contractor shall have no claim for any compensation of any kind whatsoever from PAA except the actual cost of the work executed at the Site under the Contract for which the contract requires payment to be made.

62 Materials obtained from excavation & dismantling. All materials (e.g. stone and other materials) obtained in the work of dismantling, excavation etc., will be considered PAA property and may be issued to Contractor (if they require the same for their own use) at rates approved by the Divisional Engineer. If these materials are not required by them, they will be disposed of as found fit by the PAA.

63 Danger Signs to be provided by Contractor Lights for illumination, danger signs for warning, and information / cautionary signs in approved colours and sizes shall be provided by the Contractor wherever required at his own cost on the barriers as directed by the Divisional Engineer.

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PAA SPECIAL CONDITIONS OF CONTRACT

6 Possession of Site

(Substitute the clause 6 with following text)

6.1 The Divisional Engineer shall, together with the written order to commence the Works, grant the Contractor possession of such portions of the Site as are necessary to enable the Contractor to commence and carry out the Works in accordance with the programme referred to in Clause 10, subject to any sequencing or phasing requirements prescribed in the Contract.

6.2 Thereafter, and from time to time as the Works progress, the Divisional Engineer shall grant possession of further portions of the Site, as required for execution of the Works with due dispatch, provided such possession aligns with the Contractor's reasonable proposals as approved by the Divisional Engineer.

6.3 The Contractor shall submit any such proposals for staging of site possession in writing to the Divisional Engineer for review and approval, and no right to possession shall arise unless and until expressly granted by the Divisional Engineer.

6.4 PAA shall not be liable for any delay or claim arising from staged or partial possession of the Site, provided such staging is consistent with the Contract or approved programme.

10 Programme to be furnished

(For works with a contract price exceeding the financial limit prescribed for PEC Constructor Registration Category C-3, as revised from time to time, Clause 10 shall be substituted with the following text)

10.1 The Contractor shall, within fifteen (15) days of receiving the Letter of Acceptance, submit a detailed Programme of Works to the Divisional Engineer for approval. The Programme shall include all activities, including mobilization, and clearly identify critical path items using a computerized Critical Path Method (CPM) format. The Programme shall be updated monthly, incorporating a chart of forecasted principal activities, an updated cash flow schedule for payments, and any revisions necessary to reflect actual progress. It shall serve as the baseline for assessing progress and determining Liquidated Damages under Clause 29. Monthly progress reports shall include an up-to-date analysis of actual versus planned progress, identification of current or emerging critical items, and the Contractor's proposed measures for mitigation.

18 Quality of Material, Workmanship and Tests

18.1 Expenditure on account of laboratory testing to ascertain suitability of materials and all other required tests etc. shall be borne by the Contractor.

24 Extension of time for completion

(For works with a contract price exceeding the financial limit prescribed for PEC Constructor Registration Category C-3, as revised from time to time, Clause 24 shall be substituted with the following text)

24.1 In the event of:

(a) the amount or nature of extra or additional work,

(b) exceptionally adverse climatic conditions,

(c) any delay, impediment or prevention by the PAA, or

(d) other special circumstances which may occur, other than through a default of or breach of contract by the Contractor for which he is responsible, being such as fairly to entitle

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the Contractor to an extension of the Time for Completion of the Works, or any Section or part thereof,

the Divisional Engineer shall, after due consultation with the Contractor, determine the amount of such extension and shall notify the Contractor accordingly. Provided that the Divisional Engineer is not bound to take into account any extra additional work or other special circumstances unless the Contractor has within fourteen (14) days after such work has been commenced or such circumstances have arisen, delivered to the representative of the Divisional Engineer full and detailed particulars of any claim for extension of time to which he may consider himself entitled in order that such claim may be investigated at the time.

25 Termination of Contract for slow progress

25.1 In the event of termination by the Divisional Engineer, the Contractor shall have the right to file an appeal before the Director General PAA, within seven (07) days from the receipt of such termination notice. The decision of the Director General PAA shall be final and binding.

29 Liquidated damages for delay

29.1 The amount of Liquidated Damages for each day of delay in completion of the whole of the Works, or if applicable for any Section thereof, shall be imposed at the rate of 0.05% of Contract Price as stated in Letter of Acceptance for each day of delay in completion of the Works. Provided that the amount of Liquidated Damages for delay shall not exceed ten (10) per cent of the Contract Price as stated in Letter of Acceptance in all cases.

29.2 In cases where liquidated damages have been imposed or have been proposed to be imposed, the amount to be retained in lieu of Security Deposit during the Maintenance Period shall be based on the cost of works executed, and not the reduced amount to be paid to the Contractor after imposition of liquidated damages.

29.3 Where a work has been delayed beyond the stipulated date of completion, the Contractor shall be required to extend the securities and insurances as per the revised dates at his own cost.

31 Suspension of Works

31.1 Partial / complete suspension in work is likely to take place during emergency operations and VIP movements etc. labour, equipment, and material, etc. shall be removed from the site of work during such suspension periods to a distance for essential security requirements. No compensation whatsoever on this account shall be claimed by the Contractor for those losses likely to occur. All such unforeseen disruptions during working hours may result in idleness of manpower and equipment and waste of material, etc. for which no compensation shall be paid to the Contractor.

31.2 No compensation is payable for interruption in the work due to any reason beyond the control of PAA.

32 Care of Works

32.1 The Construction materials should be stacked at a suitable place as per the direction of the Divisional Engineer or his representative.

32.2 The work shall be so arranged as not to cause any disturbance to the passengers / functionaries and other agencies working at the airport.

41 Valuation of Works

41.1 For works items described in the priced bill of quantities (BoQ), the valuation of works shall be made as per the evaluated rates provided in the corrected priced BoQ, and

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41.2 For work items not described in the priced bill of quantities (BoQ) but available in the Pak PWD Schedule of Rates (SoR), the valuation of works shall be made on pro rata basis, and

41.3 For work items neither described in the priced bill of quantities (BoQ) nor available in the Pak PWD Schedule of Rates (SoR), the valuation of works shall be made on the basis of actual cost (market rates) plus a lumpsum of twenty-five per cent (25%) as overheads and profit.

47 Period of Maintenance

47.1 Period of Maintenance or Defects Liability Period shall be of 18 Months duration.

59 Increase or Decrease of Cost

59.1 The Price Adjustment shall be applicable only for the Contracts having stipulated completion period greater than eighteen months and contract price exceeding financial limit of PEC Constructor's Registration Category C-3 as amended from time to time. Contracts having stipulated completion period less than or equal to eighteen months and value equal to or less than the abovesaid limit will be considered as fixed price contracts.

64 Payments to Contractor

64.1 PAA shall release payment to the Contractor within fifty-six (56) calendar days from the date of certification of the Contractor's bill by the Divisional Engineer. Should payment be delayed beyond this period, a simple interest at the rate of zero-point zero five percent (0.05%) per annum shall accrue on the unpaid amount, calculated from the day immediately following the due date until the date of actual payment.

65 Settlement of Disputes

65.1 Any difference or dispute arising between the PAA and the Contractor regarding the interpretation, execution, or performance of any provision of this Contract shall be referred exclusively to the Director General PAA, whose decision shall be final, conclusive, and binding on both parties. The Contractor shall not initiate or pursue any legal proceedings or remedies in relation to such matters. This shall be without prejudice to the rights of the parties under the applicable laws.

66 Authenticity of Financial Instruments

66.1 Any financial instrument, submitted by the Contractor as Bid Security, and Performance Guarantee, if found fake or dishonoured by the issuing bank / financial institution at any pre- / post-contractual stage shall, in addition to any criminal liability, call for blacklisting of the Contractor.

67 Obligations of the Contractor

67.1 The Contractor, during the execution of works, shall be responsible for following the instructions and directions of the Divisional Engineer or his representative only.

67.2 The Contractor shall be responsible to provide and use quality construction material as per the specifications, and to the satisfaction of the Divisional Engineer.

67.3 The Contractor shall strictly adhere to all design requirements and technical specifications established by the Design Engineer and approved by PAA. The charges of which shall be borne by the Contractor, but the additional quantity of any materials used in executing the Works shall be paid as per Contractor's quoted rate.

67.4 The Contractor shall clean the existing rusty steel by approved means at his own cost and no compensation whatsoever shall be given to the Contractor.

67.5 The Contractor will be fully responsible to arrange security clearance of his workmen employed on the job in accordance with the rules requirements enforced at the time of

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execution and shall not be entitled for any compensation whatsoever on account of wastage of time and labour due to any reason.

67.6 The Contractor shall enclose the work / site area as per direction of the Divisional Engineer or his representative at his own cost. He will also ensure safety of workers as well as passenger(s) and airport staff during and after the work hours.

67.7 The Contractor shall submit a list of fittings, fixtures, equipment etc.to be dismantled as approved by Engineer In charge accordingly.

67.8 Generally, the works will be carried in accordance with Electrical Act 1910 read with Electricity Rules 1937 and any amendments thereto, Pak PWD Specifications for Electrical Works & latest editions of I.E.E rules of Building Equipment.

67.9 All wires & Cables to be used for executions of work will be copper conductors.

67.10 Damages done by the contractor during execution of work will be made good by the Contractor as per Engineering specifications and to the complete satisfaction of the Divisional Engineer.

67.11 The contractor will perform all types of tests as directed by E&M Engineer In charge after / before executions of his work & will submit test reports in this regard if required.

67.12 Cost of samples of materials will not be claimed & test charges for all required tests as instructed by the E&M Engineer from Govt. or other authorities will be borne by the contractor without any extra claim of this effect.

67.13 The Contractor will submit warranty / guarantees & literature of the Air-Conditioning equipment, Electrical equipment or Mechanical equipment etc as desired by Engineer In charge.

67.14 The approved makes of materials, accessories & equipment are provided in Appendix-F. works shall be executed subject to approval of samples from Engineer In charge.

67.15 Any equipment / items during execution / testing / commissioning & during maintenance period if burnt out / malfunctioning or broken will be replaced by the contractor without any extra cost.

67.16 These under mentioned Specifications / Terms shall have to be read in conjunction with the General Conditions of the Contract and BOQ. The provision given hereunder shall take precedence, and decision of accepting officer shall be final in case of variance or any doubt interpretation. The method of construction and workmanship where not specially stated will be in accordance with best engineering practices and principles.

67.17 All equipment quoted shall be models in current production ad shall of quality workmanship and material. The equipment offered shall be NEW (used, demonstrator, photocopy, remanufactured, reconditioned, or discontinued models are not acceptable).

67.18 The equipment shall, as a minimum, be in accordance with the requirements of the specifications and shall be the manufacturer's standard commercial product. Additional or better features which are not specifically prohibited by this specification, but which are a part of the manufacturer's standard commercial product shall be included in the equipment being furnished. A standard commercial product is a product is a product which has been sold or is being currently offered for sale on the commercial market through advertisements or manufacturer's catalogs or brochures, and represents the latest production model.

67.19 Equipment and installation shall be in compliance with ANSI/ASHRAE (American National Standards Institute/American Society of Heating, Refrigerating and Air-Conditioning Engineers) 15 (latest addition). Field adjustments required (if any) shall be made by local authorized agent upon delivery and commissioning and the equipment

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will be made ready in all respects for induction in to service.

67.20 Contractor shall not execute any hot work prior to information / approval of the Engineer. Contractor shall coordinate equipment shutdowns, interruptions in services, or disconnection of services for PAA approval which requires three (03) days prior notification.

67.21 Contractor shall stack, pack and return / deposit all the dismantled / unserviceable material at PAA store if any and submit the receipt of dismantled material deposited with the final bill.

67.22 Contractor shall be fully responsible for protection and safekeeping of Contractor's materials, equipment, labour and spares under this works.

67.23 Commissioning and site acceptance will be undertaken at Jinnah Int'l. Airport, Karachi and will re-check all parameters and any other parameters required to validate the performance as per its specifications.

67.24 It is the responsibility of contractor/bidder to complete the first maintenance (after break-in period) at completion of factory recommended running hours/duration with provisioning of all OEM spares and consumables. Security deposit shall be released after complete of this maintenance. The cost of this maintenance shall be built into the proposal.

67.25 The Contractor shall indemnify PAA against all third-party claims, including claims of infringement of intellectual property Rights including but not limited to patent, trademark, industrial design rights arising from use of the goods or any part thereof.

67.26 **WARRANTY & AFTER SALES SUPPORT:**

67.26.1 The complete new installation and equipment shall be warranted against all defects in material and workmanship for a minimum period of 18 months. The warranty shall cover replacement of defective parts and labor charges etc.

67.26.2 The warranty period shall commence on the date the unit is accepted at site / commissioned.

67.26.3 During the warranty period the bidder shall be responsible for labor, materials, and any other cost required to make the unit functional by replacement of defective parts / components at Karachi Airport.

67.26.4 Response against notified defects during warranty period shall be immediate and not later than three working days after notification is made to the local authorized agent of the equipment manufacturer for need of repairs.

67.26.5 The equipment manufacturer shall have a local authorized agent in Pakistan who shall have trained personnel available for attending to faults during warranty period and shall have adequate spares available in stock. For those spares which are required for warranty repairs and not held in stock, the bidder will undertake immediate shipment by air/ courier and shall be liable for its customs clearance and duties/ taxes.

67.26.6 During the warranty period the contractor shall fully support the PAA operational team for smooth operation and gaining full knowledge and command on the equipment operations and maintenance.

67.26.7 Supplier/Contractor must provide all the relevant details of Control Systems (Hardware and Software) used for the operations and control of entire precision units. All information related to equipment vendor must be provided to PAA.

67.26.8 The Operation and maintenance level password of equipment shall be provided to PAA (if applicable). After completion of warranty period, all level passwords and configuration software including setup parameters complete in all respect should be handed over to PAA. The microprocessor module software, configures and sets points shall be furnished to PAA. (Refer 67.26.9 for critical spares with contract)

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67.26.9 Following comprehensive critical spare parts package should be included directly in CRAC unit's contract of delivery without any additional cost to PAA:

I.	Air Filters	01 Set
II.	Fan Belts (if applicable)	02 Sets
III.	Humidifier Cylinders/Canisters: (if applicable) and filters for other type	01 Set
IV.	Controller Board with Display Module	01 Set
V.	Contactors and Relays (complete set for 01 compressor, 01 fan indoor and outdoor each where applicable)	01 Set
VI.	Fuses (complete power and control)	01 Set
VII.	Variable Frequency Drive (VFDs) / EC Fan Controllers (01 fan indoor and outdoor each if applicable)	01 Set
VIII.	Thermostatic / Electronic Expansion Valves (TXV/EEV)	01 Set
IX.	Pressure and Temperature Transducers & Sensors (for 01 complete unit)	01 Set
X.	Crankcase Heater	01 Set
XI.	Filter Driers and Solenoid Valves	01 Set
XII.	Any other critical spare/s recommend by OEM (attach list as applicable)	01 Set

67.27 The Contactor shall supply the following equipment for use at ES Directorate HQPAA office, to support the requisite project activities. The supplied equipment shall become the property of the Client upon completion of the defect Liability Period (DLP) and no claim whatsoever in this regard will be entertained by contactor.

- Three (03) Nos Desktop Computer Systems, comparing: Dell OptiPlex 7020 or equivalent, Intel Core i7 (14th Generation),Processor (i7-14700)16GB DDR5 RAM,1TB SSD, Keyboard, Mouse and 31.5 inch full HD Monitor, complete with all requisite cables and accessories or equivalent.
- One (01 one) HP Leaser Jet Pro 4003DW Printer Duplex Wireless, Up to 42 PPM Black white or equivalent.

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Appendix - A

SCHEDULE OF BASIC PRICES OF SPECIFIED MATERIALS

A) Basic Price Materials (To be filled by the Bidder)

We confirm herewith that the following prices were prevalent in the month during which the last day of the submission of bidder fell and have been taken as a basis for quoting the prices given in our Bidder.

Adjustment of increase / decrease in price shall only be admissible for the materials listed herein under:

S.No.	Materials	Unit	Basic Price Ex-Factory/Works	Remarks
1	2	3	4	5
1.	Cement	Bag (50 Kg)		The basis of the rate is the Monthly Statistical Bulletin issued by the Pakistan Bureau of Statistics.
	i) Ordinary Portland Cement			-- do --
	ii) Sulphate Resisting Cement			-- do --
2.	Steel	Kg		
	i) Reinforcement Bars			-- do --
	ii) M.S. Sections			-- do --
3.	Bitumen	Tonne (1000 Kg)		The basis of the rate is the Monthly Statistical Bulletin issued by the Pakistan Bureau of Statistics. If not available then basis would be National Refinery, Attock Refinery or from an approved equivalent source.
	i) Grade 60/70			-- do --
	ii) Grade 80/100			-- do --
	iii) Cutback Bitumen			
	a) Medium Curing			-- do --
	b) Rapid Curing			-- do --

Note:

(1) If the price paid by the Contractor for any of the Specified Materials shall differ from the basic thereof and shall cause an increase or decrease of cost to the extent of five (5) per cent or more to the Contractor in carrying out the Contract, the increase or decrease of such cost shall be adjusted in the Contract Price accordingly. The actual payments shall be made on the basis of quantities actually measured and certified for payment. Any fluctuation in the prices of materials other than the Specified Materials shall not be subject to adjustment of the Contract Price.

(2) The Bidders shall submit satisfactory documentary evidence in support of the rates and prices filled up in this Appendix.

We agree that price variation in the above listed basic prices during the currency of the Contract will be adjusted only to the extent as stipulated under the Conditions of Contract.

Authorized Signatures _____

Name _____

Seal _____

Date _____

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Appendix - B

MATERIALS TO BE PROVIDED BY PAA

Schedule showing (approximately) materials to be supplied by the PAA under Clause 52 of the General Conditions of the Contract or for work contracted to be executed and the rates at which they are to be charged for

Particulars	Rate at which the material shall be charged to the Contractor		Place of Delivery
	Unit	Rs.	

Note: The person or firm submitting the Bid should see that the rates in the above schedule are filled up by the Divisional Engineer on the issue of the form prior to the submission of the Bid.

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Appendix - C

PERFORMANCE BOND GUARANTEE

Guarantee No:
Date of Issue:
Amount of Guarantee:
Date of expiry:

By this Bond We ..... (hereinafter called "THE SURETY"), (1) do hereby bind ourselves and our successors and assign jointly and severally by these presents to pay to the PAKISTAN AIRPORTS AUTHORITY, KARACHI (hereinafter referred to as the PAA which term shall include his successors in office and assigns) unconditionally on demand and without further question, the sum of Rs…… (Rupees.....), sealed with our respective seal and dated this …….

WHEREAS, M/s. ..... (hereinafter referred to as "THE CONTRACTOR") by an agreement made between the PAA of the one part and the Contractor of the part have entered into a Contract hereinafter called "Said Contract" for the Construction, completion and maintenance of ……." as therein mentioned in conformity with the provisions of the said contract and the sum mentioned in the above written Bond represent the amount of Performance Bond to be furnished by the Contractor for due fulfilment of obligations under the said Contract.

NOW THE CONDITION OF the above written Bond is such that if the Contractor shall duly perform & observe all the terms, provisions, conditions & stipulations of the said contract on the Contractor's part to be performed & observed according to the true purpose, intent & meaning hereof as determined by the PAA who shall be the sole judge in the matter, or if on default by the Contractor for which the PAA shall be sole judge the Sureties/Surety shall pay the amount of this Bond to PAA without reference to the Contract, then this obligation shall be null and void but otherwise shall be and remain in full force and effect but no alteration in terms of the said Contract made by agreement, between the PAA and the Contractor or in the text or nature of the works to be constructed, completed and maintained thereunder and no allowance of time by PAA under the said Contract nor any forbearance or forgiveness in or in respect of any matter or thing concerning the said Contract on the part of the PAA shall in any way release the Sureties/Surety form any liability under the above written Bond.

AND WE agree that this Bond shall be irrevocable and the Guarantee hereby given shall be valid up to … .....and that a Certificate signed by the Director Engineering Services / Additional Director, stating that the Bond has become due will be sufficient proof of its forfeiture and we shall pay the amount so demanded without, any further proof of any kind and that the payment shall be made by us forthwith on the receipt of the Certificate of the Director Engineering Services / Additional Director as aforesaid.

Notwithstanding anything contained hereinabove, the Bank's liability under this Guarantee shall in no event exceed the sum of Rs …….. (Rupees.....), and this guarantee shall remain valid up to ……. where after the Bank shall be completely discharged and released from all its liabilities hereunder unless a claim is received before the aforesaid expiry date.

Signed, sealed and delivered by the said in the presences of:

For and on behalf of
M/s

CONTRACTOR

For and on behalf of

SURETY

WITNESSES:

1. Signature.
   Name.
   CNIC:
   Address.

2. Signature.
   Name.
   CNIC:
   Address.

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Appendix - D

MOBILIZATION ADVANCE GUARANTEE

(Bank Guarantee)

Guarantee No. _____ Date _____

WHEREAS the Pakistan Airports Authority (hereinafter called PAA) has entered into a Contract for _____ (Particulars of Contract), with Constructor "M/s _____" (hereinafter called the "Contractor").

AND WHEREAS, PAA has agreed to advance to the Contractor, at the Contractor's request an amount of Rupees _____ (Rs._____), which amount shall be advanced to the Contractor as per provisions of this Contract.

AND WHEREAS, PAA has asked the Contractor to furnish Guarantee to secure the advance payment for the performance of his obligations under the said Contract.

AND WHEREAS, _____ (Scheduled Bank) (hereinafter called the "Guarantor") at the request of the Contractor and in consideration of the PAA agreeing to make the above advance to the Contractor, has agreed to furnish the said Guarantee.

NOW, THEREFORE, the Guarantor hereby guarantees that the Contractor shall use the advance for the purpose of above-mentioned Contract and if he fails and commits default in fulfilment of any of his obligations for which the advance payment is made, the Guarantor shall be liable to PAA for payment not exceeding the aforementioned amount.

Notice in writing of any default, of which the PAA shall be the sole and final judge, on the part of the Contractor, shall be given by the PAA to the Guarantor, and on such first written demand, payment shall be made by the Guarantor forthwith of all sums then due under this Guarantee as determined by the PAA without any reference to the Contractor and without any objection.

This Guarantee shall remain in force until the advance is fully adjusted against payments from the interim Payment Bills of the Contractor or until (Date) _____ whichever is earlier.

The Guarantor's liability under, this Guarantee shall not in any case exceed the sum of Rupees _____ (Rs._____).

This Guarantee which is unconditional and irrevocable, shall remain valid up to the aforesaid date and shall be null and void after the aforesaid date or earlier if the advance made to the Contractor is fully adjusted against payments from interim Payment Bills of the Contractor provided that the Guarantor agrees that the aforesaid period of validity shall be deemed to be extended if on the above mentioned date the advance payment is not fully adjusted as payments from interim Payment Bills of the Contractor.

GUARANTOR

For _____

(Bank Limited)

1. Signature _____
2. Name _____
3. Title _____

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Appendix - E

LIST OF BANKS

Following is the list of approved schedule banks (financial institutions) acceptable to PAA for obtaining Bank Guarantee(s):

Public Sector

1) National Bank of Pakistan
2) Sindh Bank Limited
3) The Bank of Punjab

Private Sector

4) Allied Bank Limited
5) Askari Bank Limited
6) Bank Al Habib Ltd.
7) Faysal Bank Ltd.
8) Habib Bank Ltd.
9) Habib Metropolitan Bank Ltd.
10) JS Bank Ltd.
11) MCB Bank Ltd
12) Samba Bank Ltd.
13) Soneri Bank Ltd.
14) Standard Chartered Bank Ltd.
15) United Bank Ltd.
16) Industrial and Commercial Bank of China Ltd.

Islamic Banks

17) Al Baraka Bank (Pakistan) Limited
18) BankIslami Pakistan Limited
19) Dubai Islamic Bank (Pakistan) Limited
20) Meezan Bank Limited

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Appendix - F

LIST OF APPROVED MANUFACTURERS / SOURCES

This list of recommended manufactures / suppliers of different materials / equipment with brand names have been provided in order to establish a standard level of performance. The Contractor is supposed to provide and fix the materials / equipment of acceptable quality from the list or equivalent as approved by the Engineer. Whereas the preference of brand and model will be decided by the Engineer. Material from approved list shall stand rejected, if it fails in any of the specified tests or quality standards.

Sr. No.	Description	Manufacturer/Supplier/Source
	Civil Works	
1	Cement (OPC, SR)	Lucky, Pioneer, Maple Leaf, Fauji, Askari, Power, Cherat, DG Khan, Dewan
2	Cement (White)	Kohat, Maple Leaf, Zealpak
3	Construction Chemicals & Sealants	Sika, Fosroc, BASF, Ultra, Fastchem, Vertex, MAPEI, KALON, Mitchell
4	Anchoring / Fixing Systems	Strong hold, Strong force, Hilti, Fischer
5	Sand	Bholari, Lawrencepur or from any other approved source as per Mix Design.
7	Aggregate	From approved source.
8	Steel Reinforcement	Amreli, FF Steel, AFCO, Ittehad, Ittefaq, Fazal, PECO, Razzaque, Metropolitan, Mughal, Pak Steel, Model Steel, Nizami Brothers, Moiz Steel, Poineer, Tayyaba Steel or approved equivalent.
9	Bitumen (Cold)	National Refinery, Attock Petroleum, PARCO
10	Bricks/Blocks	Local (Brand / source to be approved by the Engineer)
11	Ceramic / Porcelain Tiles	Shabbir, Master, Time Ceramic, National, or equivalent imported
12	Vinyl Tiles	Decora, Marflex, A.T.S. Synthetic
13	Wooden Flooring	Sarina, Firstfloor or equivalent
14	Textured Decorative Wall Coating	Rockwall, Wall Tec, Rock Shield, Sand Tec, Graffito, Jotun
15	Aluminium Doors / Windows	ALCOP, Pakistan Cables, Chawla, Prime, Ittehad Aluminium, Thermec, Eng: Co, Alhali Aluminum Co (Pvt) Ltd, Krudson, Lucky or equivalent
16	Aluminium Composite Panel	ALCOP, Chawla, Pakistan Safety Glass (Alucobond), AKB (EuroBond – Exterior. & DuBond – Interior)
17	Paint	ICI (Dulux, Paintex), Berger Robbialac, Brighto, Master, Kansai (Japan), Nippon, Jotun, Diamond, Buxly, Pakistan Phthalates Limited (Kalon Chemicals Company) or equivalent.
18	Powder Coating	Jotun or approved equivalent
19	Concrete Pavers	Tuff Tiles, Izhar, Envicrete, National Pavers, Banu Mukhtar, Magnacrete or equivalent
20	Insulation	OEM Standard for unit & refer BOQ for site installation.

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Sr. No.	Description	Manufacturer/Supplier/Source
21	Membranes for Roof and Basement walls	Polytec (Henkel Polybit), Hygrip, Roof Grip, A.T.S. Synthetic, Petro Seal, Bitumat (Saudi Arabia), Pakistan Phthalates Limited (Kalon Chemicals Company), Sika Raingard
22	uPVC Doors / Windows	Framez, Uniwin, Nasar Steel, U-Tech, Green Door, V-Make, Chawla
23	Steel Doors and windows	SECCO or any other approved equivalent
24	Termite Proofing	Agenda (Termidor), Biflex, Fiprokil, Mirage, Termicure, Ability
25	Terrazzo Tiles	As approved by Engineer
27	Pre-Engineered Steel Buildings	Zamil, Mammut, Mabani, Kirby, Banu Mukhtar, Izhar, SACHAL
28	Gypsum False Ceiling	Elephant, Lodhia (Arish), DFB, United
29	Glass	Pakistan Safety Glass, Ghani, Al-Fattah, Khawaja, Nowshera Prince or equivalent.
30	Door hardware	Kolf, Sitara Hardware, Jb.Saeed, IM Hardware (Yale), Alpha, Khas, Babar, or approved equivalent.
32	SS Railing	Dah Shi (Taiwan), IIL, or equivalent
33	Medium Density Fibreboard	Al-Noor, ZRK, Nuboard or equivalent.
34	High Density Fibreboard	Patex, Sonitex or equivalent
35	Plywood	Patex, Marineplex or equivalent.
	PUBLIC HEALTH WORKS	
1	Sanitary Ware (WC Indian, WC European, Basin / Vanity, Urinal, Flushing Cistern)	Porta, Marachi, Master, ICL, Finecera, Karam, Cera and 3 Star or equivalent.
2	Bottle trap	Porta, Master, Faisal, Sonex, Asia and Super Asia or equivalent.
3	Bath / Kit. Fittings	Porta, Master, Faisal, Sonex or equivalent.
4	PPR-C Pipes & Fitting	Dadex, Beta, Master, Plasco, Turk Plast, Popular Pipe, Accufit, Minhas, Dura Built, IIL, Builtec, Euro Gulf, YAH Plastic Industry, Pelikan Pipe Industry (Civic)
5	uPVC Pipes & Fittings	Dadex, Shavyl, Galco, Beta, Turk Plast, Jamal, Fast Flow, Plasco, Popular Pipe, Master, Accufit, Dura Built, Builtec, Euro Gulf, YAH Plastic Industry, Newtech, Pelikan Pipe Industry (Civic), Prime Star Industries or approved equivalent.
6	RCC Pipe	Shalimar, Pakistan Pipes, National Pipe Industry
7	G.I. Pipes	International Industries Ltd. (IIL), Master Pipe, Jamal, Victory, Steelex or equivalent
8	C.I. Pipes	C.I. Engineering / Corp: Teepu, Alpine, NPC and CME or equivalent.
9	Gate / Sluice Valves (Water Services only)	KITZ (Star Corporation), Teepu, Anwer, Asia, Rehman Group, Sirajia Trading co.

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Sr. No.	Description	Manufacturer/Supplier/Source
10	G.I. Fittings	KITZ (Star Corporation), Health Engineering (HE)
11	C.I. Fittings & Valves	Teepu, Alpine, Sirajia Trading co.
12	C.I. Manhole Cover	CME, Teepu, Alpine, Turk Plast
17	MS Seamless Pipe	Huffaz Industries, Jamal, KITZ, Sirajia Trading co., Master Pipes, Victory
18	PVC Water Stop	Fosroc, Sika, Decora, Marflex
19	HDPE pipe and Fittings	Dadex, Jamal, Plasco, Turk Plast, Beta, Popular Pipe, Accufit, IIL, DURA BUILT, Builtec, Fast Flow, YAH Plastic Industry, Newtech, Pelikan Pipe Industry (Pelikan), Prime Star Industries
21	Water Tank	Master, Super Tuff, Dura, Accufit, Prime Master
22	Kitchen Sink	Porta, Atlas, Asia or approved equivalent
ELECTRICAL & MECHANICAL WORKS		
1	Wires and Cables	Pakistan Cables, Fast, AGE, Newage, GM
2	Air Switch Breaker, Load brake switches, MCCB and MCB etc.	Terasaki Japan, Siemens, ABB, MG, Hager, Schneider Electric
3	Switches and Sockets	Schneider, Philips
4	Down Light/ Batten Lights	Sunlight, Pierlite, Future Technology, Orient
5	Flood Lights	Philips/ Signify, Osram, GE, Thorn
6	Fans Ceiling/Exhaust/Bracket	Pak, Royal, SK, Super Asia,
7	UPS	Huawei, Homage, Inverex, Goodwee, Crown, Fronius, APC
8	Tubular batteries	AGS, Phoenix, Osaka, Exide, Volta
9	AC Units	As per attached technical specifications in tender and bidding documents
10	Air Curtains	Gree, Haier, Orient, Green Air, Dawlance, PEL, Kenwood or Equivalent
11	PVC Conduits and Pipes	Polupar, Galco, Sheval, Adamjee, GM, Dadex
12	PVC Cable Trunk	Adamjee, Jeddah or equivalent
13	Termination Kit / Straight Jointing Kit	Raychem (Germany), 3M (USA), Elastimod (Egypt)
14	LV main distribution panel	Siemens, PEL, FICO, Schneider Electric, ABB, Sunbeams, Engineers & Engineering, Libra, Hussein & Co., BLS

REPLACEMENT OF OBSOLETE AND DETERIORATED CRAC UNITS SERVING RADAR AND AIR NAVIGATION FACILITIES AT AREA CONTROL CENTRE, JIAP KARACHI

List of approved manufactures for site execution items (other than OEM installations):

Refrigerant Line Valves

- Danfoss A/S
- Emerson Electric Co.
- Parker Hannifin Corp.
- Saginomiya Seisakusho, Inc. (Japan)
- Sanhua Holding Group Co., Ltd.

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Refrigerant Copper Pipe

- Mueller Industries
- KME Group
- Wieland Group
- Hailiang Group
- Sanhua Holding Group Co., Ltd.
- Luvata

Refrigerant Filter/ Drier set

- Danfoss A/S
- Emerson Electric Co.
- Parker Hannifin Corp.
- Saginomiya Seisakusho, Inc. (Japan)
- Sanhua Holding Group Co., Ltd.
- Caster

Refrigerant Line Sight Glass

- Parker Hannifin Corp.
- Henry Group Ind.
- NDL Ind.
- Robertshaw (Ranco)
- Fanovo

Refrigerants

- Chemours Co . (USA)
- Honeywell Int'l (USA)
- Daikin Industries (Japan)
- Arkema S.A. France
- Sinochem Holdings (Sinochem Group)

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Annexure - F

Note: Wherever the word Civil Aviation Authority (CAA) is mentioned in this section of the document, it shall be read, interpreted, treated and dealt as Pakistan Airports Authority (PAA).



MASTER COPY

HSE MANUAL FOR CAA CONTRACTORS, SUPPLIERS & CONCESSIONAIRES

MANUAL

VERSION : 2.0
DATE OF IMPLEMENTATION : 15-03-2017
OFFICE OF PRIME INTEREST : Directorate of Safety & Quality Management System (SQMS)

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HISTORY

As day to day activities have become highly sophisticated, so has our understanding of how to create a safe, healthful work environment. In the past "Accident Prevention" for organizations simply meant freedom from serious injuries to Employees and property loss. Today, however, "Loss Control" being a part of HSE covers not only injury but occupational diseases and environmental concerns along with fire and property damage control. This new understanding of HSE is not only reflected at all levels of management but also in contractors, suppliers & concessionaires activities.

These days most of the Organizations show their concerns with regard to the welfare of their employees but some-how leave aside the part suppliers, contractors and concessionaires play during routine operations, which at times harm the organizations and employees as well. It is the need of the time that suppliers', contractors' and concessionaires' level of understanding about HSE issues be made at par with that of an organization they are working for.

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The present CAA Management has made a concentric and serious effort of establishing International HSE Standards by initiating the process of Integrated Management System (IMS) implementation, in which contrary to the past, role of CAA suppliers, contractors and concessionaires is addressed, so as to keep their activities on harmonious track with CAA operations and to ensure fulfillment of CAA HSE requirements. The publication of this HSE manual is part of the same campaign and commitment made by CAA's top management.

The Directorate of Safety & Quality Management System has been established with its field offices at various airports / locations to provide onsite support and guidance on the issues pertaining to the Health, Safety, Environmental Protection, Energy Conservation, Customer Satisfaction, Aviation Security and Information Security Management System. The requirement detailed in this Manual are derived based upon international standards and industry best practices. The CAA reserves the right to change / amend the requirement stated in this document with the change in requirement of international standard or to suit CAA's requirement.

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RECORDS OF AMENDMENTS AND CORRIGENDA

AMENDMENTS			
No.	Date Applicable	Date Entered	Entered by

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FOREWORD

Pakistan Civil Aviation Authority is focused on improving the Health, Safety and Environment related aspects which would enable to control occupational hazards & safety risks essentially required to implement Environmental Management System. The development and implementation of an Integrated Management System is already in process through which CAA has already acquired ISO 9001:2008 (Quality management System) and is now steadily moving forward to acquire ISO 14001:2004 (Environmental Management System), OHSAS 18001:2006 (Occupational Health and Safety Management System), CS ISO 10001:2007 (Customer Satisfaction), ISMS ISO 27001:2005 (Information Security Management System), EnMS 50001:2011 (Energy Management System) and ICAO SeMS (Security Management System) duly integrated with ICAO's Aviation Safety Management System.

I would like to highlight the pivotal role of contractors, suppliers, and concessionaires in different activities being carried out at our premises to conform to the acceptable safety standards in order to control adverse environmental impacts and safety hazards / risks. We shall constantly need the support of contractors, suppliers, and concessionaires to assist in inculcating a safe and environment friendly culture at our premises.

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This Manual contains guidelines to be followed by the contractors, suppliers, and concessionaires in compliance with all the standards and regulation of safety, environment, occupational health and quality based on continual improvement concept while performing work / activity within the areas of responsibility at Pakistan Civil Aviation Authority premises. The relevant CAA officials will extend maximum possible assistance wherever clarifications are required regarding interpretation of this manual.

I would also like to acknowledge the contributions made by the contractors, suppliers and concessionaires in developing and maintaining the infrastructure at the Pakistan Civil Aviation Authority airports and other locations. At the same time, I urge them to actively participate in our efforts to create positive improvements by strengthening the institution through adoption of best quality, health, safety, and environmental practices enabling Pakistan Civil Aviation Authority to become a leading aviation organization.

(ASIM SULEIMAN)
Air Marshal
(Retd.)Director
General
Pakistan Civil Aviation Authority

Dated: - **11 March 2017**

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ACRONYMS

ATS	AIR TRAFFIC SERVICE(S)
CAA	CIVIL AVIATION AUTHORITY
CARs	CIVIL AVIATION RULES
CAAF	CIVIL AVIATION AUTHORITY FORM
CAAO	CIVIL AVIATION AUTHORITY ORDER
DMR	DEPUTY MANAGEMENT REPRESENTATIVE
HQCAA	HEADQUARTER CIVIL AVIATION AUTHORITY
HSE	HEALTH SAFETY ENVIRONMENT
IAR	IMPROVEMENT ACTION REPORT
IMS	INTEGRATED MANAGEMENT SYSTEM
MR	MANAGEMENT REPRESENTATIVE
PPE	PERSONAL PROTECTIVE EQUIPMENT
PTW	PERMIT TO WORK
EMS	ENVIRONMENTAL MANAGEMENT SYSTEM
ISO	INTERNATIONAL ORGANIZATION FOR STANDARDIZATION
LOTO	LOCK-OUT TAG-OUT
LPG	LIQUID PETROLEUM GAS
MNL	MANUAL
MSDS	MATERIAL SAFETY DATA SHEET
NEQS	NATIONAL ENVIRONMENTAL QUALITY STANDARDS
OH&SMS	OCCUPATIONAL HEALTH & SAFETY MANAGEMENT SYSTEM
OPI	OFFICE OF PRIME INTEREST
QMS	QUALITY MANAGEMENT SYSTEM
SMS	SAFETY MANAGEMENT SYSTEM
TQM	TOTAL QUALITY MANAGEMENT

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Chapter 1
INTRODUCTION

1.1 INTRODUCTION

Integrated Management System comprising International Management System standards ISO 9001: 2008 (Quality Management System), ISO 14001: 2004 (Environmental Management System), OHSAS 18001: 2007 (Occupational Health and Safety Management System), and ICAO's SMS (Safety Management System) has been implemented in Pakistan CAA. These standards require adherence from all the stakeholders to fulfill their respective obligations towards vital aspects of Safety, Quality, Occupational Health and Environment. This HSE Manual outlines the responsibilities of contractors, suppliers and concessionaires working for CAA or on the areas under CAA's jurisdiction

1.2 CAA IMS POLICY

Top Management commitment is demonstrated in IMS Policy, attached as **Appendix-A** (English version) and **Appendix-B** (Urdu version).

1.3 RESPONSIBILITY & AUTHORITY

1.3.1 RESPONSIBILITY FOR HSE COMPLIANCE:

1.3.1.1 CAA shall require Contractors and/or Sub-contractors / Suppliers / Concessionaires to affirm that all supervisors are responsible for ensuring that the works / activities are performed in accordance with all applicable health, safety and environmental rules, regulations and good working practices with equal diligence being paid to the fulfillment of the contractual technical specifications. CAA will require Contractors and Sub-contractors to advise such personnel of their safety responsibilities. Contractors / Suppliers / Concessionaires shall also provide CAA with their organizational setup for a particular contract / subcontract / renewal / bid invitation document, where applicable, specifying the areas of safety responsibilities of their supervisors.

1.3.1.2 **All DDGs** shall ensure imparting necessary directions and establish requisite monitoring & evaluation mechanism in their respective area of responsibilities to fulfill the vision and the objectives contained in this manual.

1.3.1.3 **The concerned Directors / Additional Directors / Airport Managers/Chief Operations Officers / Location Heads / Sectional Heads**, involved / engaged in the purchase of materials, services and contracts (including sub-contracts, if any), shall ensure effective implementation of this manual. They shall also be responsible to designate **Contract Coordinators** where applicable especially on large scale projects.

1.3.1.4 **Contract Coordinator** (a designated CAA Employee) shall be responsible for the on-site implementation of HSE requirements by the contractors and their officials / workers. He shall also be responsible to record on-site management activities and meetings specific to the HSE issues.

1.3.1.5 **Deputy Management Representatives (DMRs)** shall be responsible to oversee the implementation and effectiveness of this manual at their respective Airports / ATS Units / Locations.

1.3.1.6 The concerned **Directors / Additional Directors / Airport Managers / Chief Operations Officers / Location Heads / Sectional Heads**, involved / engaged in the purchase of materials, services and contracts (including sub-contracts, if any), shall ensure incorporation of specific clause(s) on Safety, Health & Environment in the contract agreements or their renewals / bid invitation documents indicating the need for compliance with the detailed guidelines as outlined in this manual.

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1.3.1.7 All Safety, Health and Environment requirements contained in this manual shall also be made part of the bid invitation documents / contracts.

1.3.1.8 Any specific requirements not covered in this manual and in the existing HSE clause of the contract / lease agreement may be specified in the contract / lease documents by the respective CAA functions, in consultation with Additional Director SQMS (REG/CF), Additional Director SQMS (ANS/APS) at HQCAA and concerned DMRs at Airports / ATS Units / Locations. These may include but not limited to:

a. Working procedures
b. Risk / impact assessment of the job
c. Requirements of transporting carrier, machinery / equipment and tools
d. Handling / packaging identification requirements
e. Information about the product composition
f. Compliance to the related Safety, Health & Environment procedures for performing the activity
g. Usage of Personal Protective Equipment (PPE)
h. Competence / training requirements of workers
i. Handling and disposal of waste, etc
j. The need to obtain Permit To Work (PTW), where required
k. Emergency procedures
l. Accident / incident reporting
m. Legal requirements

1.3.1.9 The **concerned Directors / Additional Directors / Airport Managers / Chief Operations Officers / Location Heads / Sectional Heads** may ask the supplier / contractor / concessionaire to carry out a **risk assessment** before awarding a contract for high-risk tasks, where applicable.

1.3.2 ONSITE MANAGEMENT OF CONTRACTORS FOR MEGA / MAJORPROJECTS:

1.3.2.1 The **concerned DDGs / Directors / Additional Directors / Airport Managers / Chief Operations Officers / Location Heads / Sectional Heads** shall ask the contractor / supplier / concessionaire to designate a **Safety Officer** wherever applicable, depending upon the quantum of contract, who shall be the focal person and responsible for on-site implementation of HSE requirements on part of contractors / suppliers / concessionaires. For Contracts / Agreements of smaller quantum, the contractor / supplier / concessionaire shall be directly responsible in this regard without having the need to designate such representatives.

1.3.2.2 The **concerned Directors / Additional Directors / Airport Managers / Chief Operations Officers / Location Heads / Sectional Heads** shall be responsible to nominate a representative **(Contract Coordinator)** for on-site management of contractors for mega / major projects. The contract coordinator / representative shall monitor the HSE compliance by the contractor / supplier. This includes monitoring of:

a. Controls to prevent HSE risks
b. Contractor equipment for appropriateness
c. Compliance of work procedures
d. Waste Disposal & Record keeping

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e. Compliance of regulatory requirements, to this HSE Manual or their own HSE Manual(s) if exceeding the requirement stipulated by the CAA and PTW by contractors / suppliers / concessionaires

1.3.2.3 **Regular on-site meetings with the contractor** must be convened / held to discuss the HSE compliance and related aspects of the job. Records of such meetings and on-site management activities must be maintained by the Contract Coordinator.

1.3.2.4 **HSE audit or on-site inspections** shall be carried out randomly by the authorized Inspectors of SQMS Directorate in coordination with the concerned Directorate / Branch at HQCAA and concerned Section at airports / locations for checking HSE compliance. IAR (Improvement Action Report) on **CAAF-002-MSXX** shall be raised / generated in case any non-conformity is observed or if any corrective or preventive action is required. All proceedings of the audit or on-site inspections shall be documented by the respective inspectors.

1.3.2.5 All the works, purchase / supplies and services being carried out / rendered by Contractors / Suppliers / Concessionaires shall be liable to monitoring and supervision by CAA's authorized / designated official(s) to ensure their HSE- worthiness. Surprise inspection may be carried out at any time by SQMS Officials.

1.3.2.6 The monitoring / supervision so required shall be made under the relevant clause(s) of the contract. The performance monitoring data of contractors with regard to compliance to HSE manual and CAAO will be collected / maintained and documented on periodical basis by the respective DDGs as well as by SQMS Directorate / SQMS teams at locations, to develop necessary corrective / preventive actions accordingly. This significant data of a particular contractor / supplier / concessionaire, will be critically observed and be given due consideration at the time of awarding / continuation / renewals etc of any contract.

1.3.2.7 All potential Contractors, Suppliers and Concessionaires shall be informed about the availability of HSE manual which would require compliance from them. The latest version of this Manual shall be posted on the CAA's Official Website **www.caapakistan.com.pk.**

1.3.2.8 The concerned Directorate / Branch / Airport / Location shall provide the hard copy of the latest version of HSE Manual to the Contractors / Suppliers / Concessionaires at the time of signing of the Contract Agreements / License Agreements / Lease Deeds / Purchase Orders / Supply Orders, etc.

a. No work be executed without supervision of concerned representation of OPI Section / Branch, especially at aerodrome.

b. The representation of OPI section / function shall ·ensure implementation of preventive control measures during execution of work and corrective measures in case of any abnormal / emergency situation.

c. All food concessionaires shall preferably be certified in Food Safety Management System ISO 22000: 2017.

1.3.2.9 In case of existence of any Contractor's, Supplier's and Concessionaire's HSE Manual having provisions more stringent to this HSE manual, those shall be applicable as far as the currency of that particular contract is concerned.

1.3.2.10 All the Contractors, Suppliers and Concessionaires shall be responsible to provide and update bare minimum training / awareness on HSE to their employees and subsequent implementation. Any breach / violation thereof by any of such employee(s) shall be construed upon to be on behalf of that very Contractor, Supplier and Concessionaire. Records pertaining to HSE related training / awareness shall be maintained and provided to concerned CAA official(s) designated by the OPI and/or Representative(s) of CAA's SQMS team.

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1.3.2.11 The training / awareness described above shall include but not limited to the following: -

a. Site acquaintance (i.e. Aerodrome / Building layout, Building Evacuation Procedure, etc).

b. General aerodrome layout & hazards and handling of standardequipment.

c. HSE related operational hazards / environmental aspects and risks / environmental impacts associated and related control measures with the particular contract / agreement.

d. Basic First Aid and other corrective measures.

e. Application of Permit to Work / Lock Out and Tag Out.

f. Special MSDS, classification / composition of hazardous material for handling of hazardous material.

g. Incident(s) / accident(s) including environmental incidents (spills, etc) reporting.

h. Waste management.

i. Basic Fire Fighting.

j. Safe driving.

k. Response in emergency.

l. Personal Protective Equipment (PPE).

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Chapter 2

GENERAL INFORMATION

2.1 BASIC SAFETY & SECURITY RESTRAINTS

2.1.1 The following are some basic safety & security restraints. In case of violation of any of these, Contractors / Suppliers / Concessionaire shall be dealt with in accordance with **Rule 91 (Section 10) of CARs 94**:

2.1.1.1 Possession or use of alcoholic beverages or illegal drugs.

2.1.1.2 Possession of un-authorized explosives, firearms, ammunition, and otherweapons.

2.1.1.3 Violation of any safety or security rules or requirements as laid down in **Part VIII, Section 10 of CARs, 94 (Rule 92-110).**

2.1.1.4 Illegal dumping, handling, or disposal of hazardous materials.

2.1.1.5 Demolition or removal, without written permission, of any property belonging toCAA.

2.1.1.6 Intimidating, threatening, harassing, impeding or interfering with CAA employee(s) or designated representative(s).

2.1.1.7 Misuse of fire prevention and protection equipment.

2.1.1.8 Unauthorized removal or destruction of a safety barricade, handrail, guardrail, warning sign, fall protection, or other warning devices intended to protect employees or property.

2.2 SAFETY PERMITS

2.2.1 All CAA contractors, suppliers or concessionaires shall obtain prior approval for PTW from CAA's authorized / designated official(s) and follow all the safety requirements, precautions, controls of PPEs classified as PTW related tasks as any of the operations mentioned below may present a hazard to people, property and environment.

2.2.1.1 Performing burning, welding, cutting, soldering, or other hot work.

2.2.1.2 Working on fire protection / detection systems.

2.2.1.3 Working on electrical, steam, chilled water systems or other energized systems.

2.2.1.4 Installing a temporary electrical service

2.2.1.5 Working with hazardous chemicals (including solvents and paints).

2.2.1.6 Handling, transporting or generating hazardous wastes (including hospital biological waste, waste oil, chemicals, condensate, etc).

2.2.1.7 Using a gas, diesel, or LPG (such as Propane) powered engines.

2.2.1.8 Working on gas pipe lines or associated equipment.

2.2.1.9 Operating a power vehicle or self-propelled work platform.

2.2.1.10 Excavation / trenching.

2.2.1.11 Using radioactive sources or conducting field radiography (x -ray).

2.2.1.12 Working with asbestos & asbestos – containing materials.

2.2.1.13 Working on security systems.

2.2.1.14 Working with compressed air / gases.

2.2.1.15 Working on heating, ventilation, or air conditioning equipment.

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2.2.1.16 Working with chemicals, polishing or grinding.

2.2.1.17 Working at heights of more than 06 feet or on roofs.

2.2.1.18 Entering or working in confined spaces like fuel tanks, trenches, service shafts, sewer system, etc.

2.2.1.19 Lifting or hoisting with cranes or hoists.

2.2.1.20 Blasting operations, etc.

2.3 PERFORMANCE MONITORING

2.3.1 The Contractors / Suppliers / Concessionaires shall monitor HSE performance of their employees and activities.

2.3.2 They shall in addition monitor all those performance monitoring actions agreed between CAA and the Contractors / Suppliers / Concessionaires.

2.4 HOUSE KEEPING

2.4.1 All Contractors / Suppliers / Concessionaires shall maintain good housekeeping by keeping work areas neat, clean, orderly, free of excess trash, debris and shall block walkways, stairs, exits, or create a tripping hazard. Poor housekeeping at a job site may lead to an increased potential for safety hazards and an increased frequency of accidents, falls, cuts, spills, leaks, fires or electrocution.

2.4.2 Tools, wires, materials shall not be left or haphazardly spread out at the work place.

2.4.3 Open holes, trenches, or excavations into which people may fall shall be identified, covered or provided with guardrails.

2.4.4 In order to protect the employees and environment, safety blinding shall be provided at all works execution sites, where necessary.

2.5 REPORT OF ACCIDENT, INCIDENT, INJURY OR ILLNESS

2.5.1 The area representatives of contractor shall inform fire, electrical, civil inquiries officials each day before start of work.

2.5.2 All work related accidents, incidents, fatalities, injuries, and illnesses must immediately be reported to the CAA authorized / designated officials.

2.5.3 Every incident / accident happened during execution of contractors work shall properly be analyzed as per **CAA0-015-MSXX** and if fall in Major / Catastrophic categories be published / mentioned in IOU report by the OPI Section / Branch.

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Chapter 3

HAZARDOUS WASTE

3.1 HAZARDOUS WASTE MANAGEMENT

3.1.1 Hazardous waste generated by a Contractor / Supplier / Concessionaire as part of its work must be properly identified, stored and disposed in accordance with applicable laws / rules / regulations. The Contractor / Supplier / Concessionaire must coordinate with CAA representative(s) of relevant sections to provide a list of hazardous waste(s) which is / are likely to be generated during the project / activity, and to determine the location(s)for hazardous waste storage.

3.1.2 The Contractor / Supplier / Concessionaire must also ensure, at a minimum:

3.1.2.1 Proper labeling in terms of MSDS.

3.1.2.2 Adequate secondary containment.

3.1.2.3 Segregation of incompatible materials.

3.1.2.4 Routine inspection of storage areas.

3.1.3 In addition, all hazardous waste containers shall be constructed of a material compatible with the waste, in sound condition, and kept securely closed to avoid spill or leakage.

3.2 WASTE DISPOSAL DOCUMENTS

The Contractors / Suppliers / Concessionaires shall be responsible for completing all waste disposal documents as per statutory / regulatory requirements, where applicable and as required by CAA. This may relate to CAA's own waste that is periodically removed for further disposal purposes, or waste created by Contractor / Supplier / Concessionaire while performing a task at CAA premises / areas under CAA's jurisdiction. OPI shall also ensure all normal wastes are also removed by the contracts.

3.3 TRAINING

Contractor / Supplier / Concessionaire must ensure that their employees are appropriately trained in hazardous waste management procedures. In the event a Contractor / Supplier Concessionaire encounters unidentified material that is reasonably believed to be hazardous (radioactive, volatile, corrosive, flammable, explosive, magnetic, infectious, toxic), the Contractor / Supplier / Concessionaire shall immediately stop work in the affected area and report the condition to the CAA's authorized / designated official(s). At no time shall such material be disposed in chutes, drains, pipes or in any other unauthorized manner.

3.4 TRANSPORTATION AND DISPOSAL OF HAZARDOUS MATERIALS

3.4.1 Transportation of hazardous materials on CAA property shall be conducted in accordance with CAA specified instructions. It shall not be disposed to burn or be used in a manner that is harmful to people or environment. While transporting hazardous materials, Contractor / Supplier / Concessionaire shall ensure that no harm is done to people or environment because of poor containers, packing, covering, lashing, fixing, loading, stacking or improper vehicle or mode of transport.

3.4.2 All transportation of dangerous / hazardous goods and materials by air shall be conducted strictly in accordance with provisions of Part XVI, Sections 1-3 and 5-6 of the Civil Aviation Rules, 1994.

3.5 SPILL PREVENTION AND CONTROL

3.5.1 Based on the inventory of oil and hazardous chemicals that will be brought on-site, the Contractor / Supplier / Concessionaire shall have available equipment (e.g., secondary containment pallets, absorbent pads, absorbent booms, speed-dry etc.) that is suitable and sufficient to control a potential spill / release.

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3.5.2 The Contractor / Supplier / Concessionaire is responsible for identifying outlets to the environment (e.g., sumps, sewers, storm / floor drains, etc.) and adequately minimizing spill potential to these areas.

3.5.3 The Contractor / Supplier / Concessionaire is responsible for the proper storage of all flammable and combustible chemicals that are brought and/or stored on site to complete the work. Such storage may require the use of safety containers, safety cabinets, and/or secondary containment.

3.5.4 The Contractor / Supplier / Concessionaire shall also ensure that any incompatible chemicals are safely segregated. The Contractor / Supplier / Concessionaire is Responsible for maintaining and securing all chemical containers and all chemical storage-areas. This requires selecting locations and methods to minimize exposure to rainfall, surface water, and the ground surface or subsurface.

3.5.5 The Contractors / Suppliers / Concessionaires must ensure that their employees are adequately trained in spill control procedures and are aware of the use of spill controlkits.

3.5.6 In the event of a release or spill, the Contractor / Supplier / Concessionaire must immediately inform CAA's authorized / designated official(s).

3.6 AIR EMISSIONS

3.6.1 Any conditions discovered which could result in an increase in air pollutant emissions must immediately be reported to the CAA's authorized / designated official(s).

3.6.2 Contractors / Suppliers / Concessionaires activities should not cause unacceptable level of emissions (emissions not meeting NEQS – National Environmental Quality Standards).

3.6.3 Contractors / Suppliers / Concessionaires shall immediately notify the CAA's authorized / designated official(s) whenever they become aware of any unintentional or intentional release of CFCs (Chloro-Fluoro Carbons), Halons etc.

3.7 WASTE WATER DISCHARGES

3.7.1 Waste water must NOT include any corrosive, flammable, or toxic substances / hazardous liquid, etc.

3.7.2 Contractor / Supplier / Concessionaire must ensure no waste water is discharged that violates NEQS.

3.8 BIOLOGICAL / CHEMICAL / RADIOACTIVE HAZARDS

3.8.1 Some CAA operations may involve the use of biological, chemical, or radioactive material that can be hazardous to persons or property, if not handled or disposed safely. Contractors / Suppliers / Concessionaire will mark the areas where work with biological, chemical, or radioactive materials is being performed with proper signs.

3.8.2 The Contractor / Supplier / Concessionaire shall not disturb damage or otherwise handle any suspected asbestos containing material.

3.8.3 The Contractor / Supplier / Concessionaire shall not sweep, dust, vacuum or mop dust / debris which are the product of a suspected asbestos containing material. The Contractor / Supplier / Concessionaire shall also not pick up or throw away any suspected asbestos-containing waste or trash.

3.8.4 Sand blasting, grinding, drilling, brazing, scraping, polishing of floors and other dust emitting surfaces will be done by persons wearing appropriate PPEs.

3.9 HAZARDOUS MATERIALS AND HAZARD COMMUNICATION

3.9.1 Hazardous materials shall not be handled or used by the Contractor / Supplier / Concessionaire without providing training to the concerned employees.

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3.9.2 No solvents, paints, or similar flammable, toxic, or irritating materials shall be used in CAA premises / areas under the jurisdiction of CAA unless specifically authorized by CAA.

3.9.3 Adequate ventilation shall be maintained when paints or solvents are used.

3.9.4 Flammable solvents and materials shall be used with extreme caution.

3.9.5 It shall be ensured that flammable paints and solvents are isolated and stored in approved locations, if inside the building.

3.9.6 The Contractor / Supplier / Concessionaire shall submit an inventory of all hazardous chemicals / liquids / materials that are brought on-site or sold to CAA. These should be accompanied by MSDS.

3.9.7 The Contractor /Supplier / Concessionaire shall also ensure that all containers that are brought on site for the storage of hazardous chemicals (e.g., gas, paint, etc.) are labeled and inspected for correctness.

3.9.8 The Contractor / Supplier / Concessionaire shall remove at earliest all hazardous chemicals that it brings on-site when work involving a specific hazardous chemical has been completed.

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Chapter 4
SPECIFIC SAFETY REQUIREMENTS

4.1 CONFINED SPACE ENTRY

4.1.1 Contractor / Supplier / Concessionaire will obtain Confined Space Entry Certificate before entering / working in confined spaces. If during the course of work, the Contractor / Supplier / Concessionaire encounters a confined space that has not been previously identified by the CAA, it must immediately bring the space to the attention of the CAA's authorized / designated official(s), and delays entry until the space is examined by the CAA's authorized / designated official

4.1.2 When CAA and Contractor / Supplier / Concessionaire personnel are working in or near confined spaces, the Contractor / Supplier / Concessionaire shall coordinate all operations, with likely-to-be-affected CAA personnel before entry.

4.1.3 Prior coordination shall also be required on entering a confined space with or without a CAA employee

4.2 LOCK-OUT / TAG-OUT (WHERE APPLICABLE)

4.2.1 As part of CAA's Electrical Isolation / De-Isolation permit requirement, standard locks and tags are used to control the start-up of equipment that is being serviced or maintained by its employees. At no time shall the Contractor / Supplier / Concessionaire or its employees override any locks or tags that they encounter during the performanceof their work.

4.2.2 The Contractors / Suppliers / Concessionaires are responsible for developing, implementing and maintaining their own Lock-out / Tag-out Program.

4.2.3 The Contractor / Supplier / Concessionaire shall submit a copy of its Lock-out / Tag-out Program to the CAA's authorized / designated official(s) before the start of any work.

4.3 GENERAL ELECTRICAL SAFETY

4.3.1 Temporary electrical connection(s), where required, shall be obtained from CAA as per the prescribed procedure only.

4.3.2 Only qualified electricians are permitted to work on electrical systems and equipment that use or control electrical / power.

4.3.3 Electrical tools or equipment shall not be operated in wet areas or areas where potentially flammable dusts, vapors, gases, or liquids are present, unless specifically approved.

4.3.4 Should a circuit breaker or other protective device "trip," it is to be ensured that a qualified electrician checks the circuit and equipment and corrects problem before resetting the breaker. Moreover, there should always be a provision for safety isolation ofthe circuit where needed

4.3.5 Barriers and post warning signs shall be erected to ensure that the non-authorized personnel stay clear of the work area.

4.3.6 Hazards (lack of protective guards or covers, damaged equipment, etc.) shall be reported to the CAA's authorized / designated official(s) immediately.

4.3.7 Electrical boxes, switch gear, cabinets, or electrical rooms shall not be left open when not directly attended.

4.3.8 It shall be ensured to insulate energized parts when have been removed or doors are closed. Use of cardboard, plywood or other flammable to cover energized circuits is prohibited.

4.3.9 Proper grounding / earthling and arc quenching, where required, shall be ensured.

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4.3.10 The size of the cable / conductor should match with the actual on-site requirement.

4.4 COMPRESSED GAS CYLINDERS

The following measures must be taken for the protection of persons and property:

4.4.1 All the cylinders brought in by the Contractors / Suppliers / Concessionaires shall have valid test certificates performed by a certified testing agency.

4.4.2 Pressure and leak testing shall invariably be carried out and documented in all jobs associated with compressed gas or liquid handling.

4.4.3 Valve protection caps must be in place when compressed gas cylinders are transported, moved, or stored.

4.4.4 Cylinder valves must be closed and valve covers must be replaced when work is complete and when cylinders are empty or moved.

4.4.5 Compressed gas cylinders must be secured in an upright position in a welding cart or to a solid object (using chains, straps, or a rigid retaining bar).

4.4.6 Compressed gas cylinders must be secured on an approved carrier while beingtransported.

4.4.7 Cylinders shall be kept at a safe distance or shielded from welding or cutting operations. Cylinders shall not be placed where they can contact an electrical circuit.

4.4.8 It shall be ensured to keep oxygen and flammable gas regulators in proper working order and a wrench in position on the acetylene valve when in use.

4.4.9 If a leak develops in a cylinder and it cannot be immediately corrected, the cylinder shall be moved to a safe location outside the building / away f ram the location of work.

4.4.10 Cylinders must not be taken into or stored in confined spaces.

4.4.11 Empty & filled cylinders must be kept separately.

4.4.12 Hoses and regulators must not be stored in unventilated or closed containers or areas.

4.5 WELDING, CUTTING AND BRAZING

The Contractors / Suppliers / Concessionaires shall ensure the following:

4.5.1 Obtain PTW.

4.5.2 Inform CAA's authorized / designated official(s) prior to the start of any welding / cutting / brazing work.

4.5.3 Remove combustible materials from the area before beginning work.

4.5.4 Install anti flashback (safety / check) valves in both the oxygen / acetylene hoses at theregulator.

4.5.5 Shield adjacent areas with welding partitions.

4.5.6 Persons involved are adequately trained in using portable fire extinguishers.

4.5.7 Have a second person trained in basic firefighting as standby with an approved fire extinguisher for welding and cutting operations.

4.6 CRANES AND RIGGING

4.6.1 Each crane or hoist brought onto CAA property must have a valid inspection testing performed by a certified testing agency.

4.6.2 The operator is responsible for the proper placement of the crane in relationship to the load to be handled and the landing area so as to obtain the best rated lift capacity, and the installation and maintenance of crane swing radius protection.

4.6.3 All operators must possess a valid crane / hoist operating / driving license as applicable.

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4.7 FITNESS

4.7.1 Suppliers / Contractors / Concessionaires shall ensure that all their personnel working in CAA premises are medically fit to perform their assigned tasks.

4.7.2 If requested by CAA, Contractors / Suppliers / Concessionaires shall provide the fitness / health certificates of their employees.

4.8 DRIVING

4.8.1 All Contractors' / Suppliers' / Concessionaires' vehicles while in CAA premises or performing CAA duties shall adhere to speed limits (applicable in that particular zone), and also comply with all other traffic and road safety regulations of CAA.

4.8.2 The drivers should be in possession of valid driving license.

4.8.3 All Contractor / Supplier / Concessionaire vehicles should have:

4.8.3.1 Standard seat belts. The seat belts should be neat and clean and in proper working condition.

4.8.3.2 Standard fire extinguisher.

4.8.3.3 Standard first aid box.

4.9 INDEMNITY

Suppliers / Contractors / Concessionaires shall keep harmless and indemnify Pakistan CAA against all losses, damages, injuries, death of any person, claims, actions, third party action arising out of acts and omissions by their employees/ personnel or non-compliance with the terms arid conditions as stated herein and/or any applicable laws and regulation. Contractor shall take clearance with concerned offices before handing / taking over the area to be restored on thesame condition(s) as was/were before start of work (as per contract agreement).

PROCUREMENT REGULATORY AUTHORITY
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APPENDICES

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APPENDIX-A



PAKISTAN CIVIL AVIATION AUTHORITY
INTEGRATED MANAGEMENT SYSTEM POLICY

Pakistan Civil Aviation Authority (CAA) is committed to regulate aviation activities effectively and be a world class service provider in the Aviation Industry. Safety, Security, Quality and Environmental protection are integral to our Vision and Performance. CAA commits to develop, implement, maintain and continually improve an effective and proactive Integrated Management System in accordance with the requirements of National Standards, and International Standards contained in ICAO Annexes, Aviation Safety & Security Management Systems, Quality Management System, Information Security Management System, Environmental Management System, Energy Management System, Customer Satisfaction and Occupational Health & Safety Management System.

Pakistan CAA ensures to:

- Continually improve the Safety performance, Security measures and quality of its activities, products & services, prevent significant environmental pollution, and take care of the health & safety of its employees and stakeholders.
- Implement Energy conservation program in the organization including use of renewable/ alternate energy resources.
- Provide services of highest possible standard to meet customer satisfaction.
- Implement National Civil Aviation Security Program to safeguard against unlawful interference.
- Implement an effective Quality Control Program to ensure satisfactory security measures in compliance with National and international obligations for reducing Security Risks in aviation business.
- Protect Information in all its forms from accidental or intentional unauthorized modification, destruction or disclosure throughout its life cycle and ensure appropriate level of security over the equipment and software used to process, store and transmit that information.
- Comply with the applicable legislation and regulatory requirements concerning its activities, products and services.
- Adopt zero tolerance towards violation of procedures and standards pertaining to its operation.
- Provide adequate resources and frameworks for identification, hazard reporting and safety risk management.
- Provide mechanism for setting up and review of IMS objectives and targets.
- Take effective measures to continually improve its system and provide training to employees on safety, Security, Quality and Environmental issues to enable them in carrying out their jobs in a safe, efficient and competent manner.
- Develop a Safety and Quality culture in all activities and services which fosters safe practices, encourages non-punitive safety reporting & communication by recognizing that safety is paramount at all times.
- Prevent occupational injury and ill-health by managing safety risks at workplace and promoting a culture in which all its employees work in a Safe, and Healthy environment.

All management levels and every employee of Pakistan Civil Aviation Authority are accountable and responsible to meet their obligations toward Safety, Security, Quality and Environmental protection for the delivery of highest level of Safety / Security Performance.

(MUHAMMAD IRFAN ELAHI)
Sq. Ldr. (Retd.)
Secretary Aviation/
Chairman CAA Board

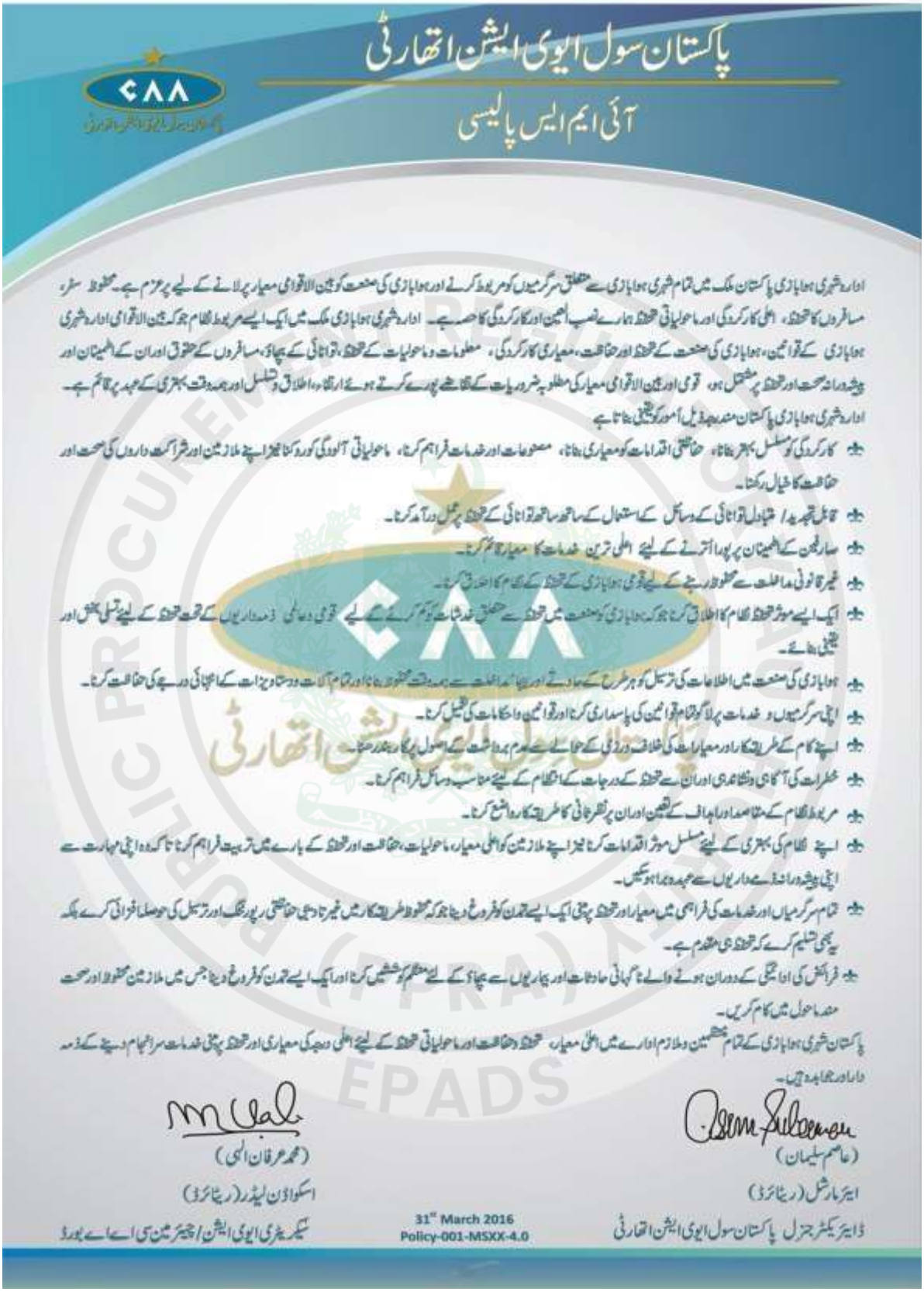
31st March 2016
Policy-001-MSXX-4.0

(ASIM SULEIMAN)
Air Marshal (Retd.)
Director General
Pakistan Civil Aviation Authority

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APPENDIX-B



پاکستان سول ایوی ایشن اتھارٹی

آئی ایم ایس پالیسی

ادارہ شہری ہوابازی پاکستان ملک میں تمام شہری ہوابازی سے متعلق سرگرمیوں کو مربوط کرنے اور ہوابازی کی صنعت کو بین الاقوامی معیار پر لانے کے لیے پرعزم ہے۔ محفوظ سفر، مسافروں کا تحفظ، اعلیٰ کارکردگی اور ماحولیاتی تحفظ ہمارے نصب العین اور کارکردگی کا حصہ ہے۔ ادارہ شہری ہوابازی ملک میں ایک ایسے مربوط نظام جو کہ بین الاقوامی ادارہ شہری ہوابازی کے قوانین، ہوابازی کی صنعت کے تحفظ اور حفاظت، معیاری کارکردگی، معلومات و ماحولیات کے تحفظ، توانائی کے بچاؤ، مسافروں کے حقوق اور ان کے اطمینان اور پیشہ ورانہ صحت اور تحفظ پر مشتمل ہو، قومی اور بین الاقوامی معیار کی مطلوبہ ضروریات کے تقاضے پورے کرتے ہوئے ارتقاء، اطلاق و تسلسل اور بہتری کے عہد پر قائم ہے۔

ادارہ شہری ہوابازی پاکستان مندرجہ ذیل امور کو یقینی بناتا ہے

- کارکردگی کو مسلسل بہتر بنانا، حفاظتی اقدامات کو معیاری بنانا، معلومات اور خدمات فراہم کرنا، ماحولیاتی آلودگی کو روکنا نیز اپنے ملازمین اور شراکت داروں کی صحت اور حفاظت کا خیال رکھنا۔
- قابل تجدید/ متبادل توانائی کے وسائل کے استعمال کے ساتھ ساتھ توانائی کے تحفظ پر عمل درآمد کرنا۔
- صارفین کے اطمینان پر پورا اترنے کے لیے اعلیٰ ترین خدمات کا معیار قائم کرنا۔
- غیر قانونی مداخلت سے محفوظ رہنے کے لیے قومی ہوابازی کے تحفظ کے نظام کا اطلاق کرنا۔
- ایک ایسے موثر تحفظ نظام کا اطلاق کرنا جو کہ ہوابازی کی صنعت میں تحفظ سے متعلق خدشات کو کم کرنے کے لیے قومی داخلی ذمہ داریوں کے تحت تحفظ کے لیے تسلی بخش اور یقینی بنائے۔
- ہوابازی کی صنعت میں اطلاعات کی ترسیل کو ہر طرح کے حادثے اور بیجا مداخلت سے بہ وقت محفوظ بنانا اور تمام آلات و دستاویزات کے اعلیٰ درجے کی حفاظت کرنا۔
- اپنی سرگرمیوں و خدمات پر لاگو تمام قوانین کی پاسداری کرنا اور قوانین و احکامات کی تعمیل کرنا۔
- اپنے کام کے طریقہ کار اور معیارات کی خلاف ورزی کے حوالے سے عدم برداشت کے اصول پر کاربند رہنا۔
- خطرات کی آگاہی و نشاندہی اور ان سے تحفظ کے درجات کے انتظام کے لیے مناسب وسائل فراہم کرنا۔
- مربوط نظام کے مقاصد و اہداف کے تعین اور ان پر نظر ثانی کا طریقہ کار وضع کرنا۔
- اپنے نظام کی بہتری کے لیے مسلسل موثر اقدامات کرنا نیز اپنے ملازمین کو اعلیٰ معیار، ماحولیات، حفاظت اور تحفظ کے بارے میں تربیت فراہم کرنا تاکہ وہ اپنی مہارت سے اپنی پیشہ ورانہ ذمے داریوں سے عہدہ برا ہو سکیں۔
- تمام سرگرمیاں اور خدمات کی فراہمی میں معیار اور تحفظ پر مبنی ایک ایسے تمدن کو فروغ دینا جو کہ محفوظ طریقہ کار میں غیر تادیبی حفاظتی رپورٹنگ اور ترسیل کی حوصلہ افزائی کرے بلکہ یہ بھی تسلیم کرے کہ تحفظ ہی مقدم ہے۔
- فرائض کی ادائیگی کے دوران ہونے والے ناگہانی حادثات اور بیماریوں سے بچاؤ کے لیے منظم کوششیں کرنا اور ایک ایسے تمدن کو فروغ دینا جس میں ملازمین محفوظ اور صحت مند ماحول میں کام کریں۔

پاکستان شہری ہوابازی کے تمام مختص ملازم ادارے میں اعلیٰ معیار، تحفظ و حفاظت اور ماحولیاتی تحفظ کے لیے اعلیٰ درجہ کی معیاری اور تحفظ پر مبنی خدمات سرانجام دینے کے ذمہ دار اور جوابدہ ہیں۔

(محمد عرفان الٰہی)
اسکواڈرن لیڈر (ریٹائرڈ)
سیکریٹری ایوی ایشن / چیئرمین سی اے اے بورڈ

(عاصم سلیمان)
ایئر مارشل (ریٹائرڈ)
ڈائریکٹر جنرل پاکستان سول ایوی ایشن اتھارٹی

31st March 2016
Policy-001-MSXX-4.0

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IN CASE OF ANY CONFLICT / CONTRADICTION BETWEEN PPRA STANDARD BIDDING DOCUMENTS AND PAA BIDDING DOCUMENTS, THE PROVISIONS STIPULATED UNDER PAA BIDDING DOCUMENTS SHALL PREVAIL AND BE TREATED AS FINAL

PAKISTAN AIRPORTS AUTHORITY
JINNAH INTERNATIONAL AIRPORT
(ES E&M - HVAC SECTION)

FINANCIAL PROPOSAL

PROVISIONING OF PRECISION CONTROL AIR-CONDITIONING UNITS AT JIAP

REPLACEMENT OF OBSOLETE & DETERIORATED CRAC UNITS SERVING RADAR AND AIR NAVIGATION FACILITIES AT AREA CONTROL CENTRE, JIAP – KARACHI

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FINANCIAL BID

PROVISIONING OF PRECISION CONTROL AIR-CONDITIONING UNITS AT JIAP

REPLACEMENT OF OBSOLETE & DETERIORATED CRAC UNITS SERVING RADAR AND AIR NAVIGATION FACILITIES AT AREA CONTROL CENTRE, JIAP – KARACHI

BILL OF QUANTITY / SCHEDULE OF PRICE

S. No	Description	Unit	Qty	Rate Per Unit		Amount (PKR)
				In Figures	In words	
01	Dismantling & removing unserviceable 16 ton capacity Denco make Precision Type Split (IDU & ODU) A.C Unit from old plant room with the help of suitable capacity crane, chain pully, fork lifter and skilled workers, Job includes removing of copper pipes, drain water pipes, electrical wiring and dismantling of existing grouted frames of the units with provisioning of all Tools and Plant with required consumables items, Further Loading, Transportation and Unloading of units from TR RADAR,ACC radar and ATM sites to CAA Store as per instruction of engineer incharge.	P/Job	04			
02	Providing & positioning of upward flow (Ducted type) Microprocessor based Close control precision air conditioning unit, "factory charged oil" as per given specifications on heavy duty vibration isolation rubber pad having following specifications. Air Conditioner Type: DX, Split Type and Dual Circuits. Cooling capacity min.= 56 Kw @ 42 deg. Centigrade ambient (inclusive of all applicable degradation at JIAP). Cooling /Supply Air Flow each min.= 16000 m3/h Indoor Unit - Almirah ducted type Up flow (Top Discharge), Easily accessible filters Required Output Working temperature 15 to 20 deg. Centigrade Relative Humidity Range required 40 to 60 % SP supply 200 Pa or 0.8 in H_2O Condenser Type: Air Cooled, Copper-Aluminum with Costal Area protection, with multiple fans. Number of Circuits = 02 nos. Refrigerant type: ASHRAE A1 Electrical specification 3Phase ~ 400V,N,PE,50Hz Unit should be equipped with: ♦HP/LP cutouts ♦Under voltage/ phase protection and sequence relay ♦Compressor motor protection ♦Evaporator fan motor protection ♦Condenser fan protection ♦Fan cycling pressure start ♦Compressor isolation valves ♦Humidifier	P/Job	04			

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S. No	Description	Unit	Qty	Rate Per Unit		Amount (PKR)
				In Figures	In words	
	♦De-humidifier • Factory installed control panel External Modbus (RS485) or BacNet for BMS connectivity					
03	Providing & laying in situ 1:2:3 cement concrete using screen graded bajri 3/4 inch and down gauge in foundation, basement and plinth i/c form work, compacting, curing and removal of form works etc. complete, foundation and basement upto 5 feet depth and plinth upto 4 feet height from ground level	CFT	79			
04	Providing/Fabrication & Fixing of M.S 1 ½" x 2" x ¼" angle iron" frame for indoor unit as per required size (approximately 6'6" x 2'3") of unit i/c painting of angle iron frame with anti-rust and best quality enameled paint (02 coats) as per instruction of engineer in charge.	P/Job	04			
05	Providing and fixing of CPVC SCH 80 1 size pipe for drain line with elbow, sockets, bends and unions from unit to main hole as per instruction of Engineer Incharge.	P/Mtr	50			
06	Providing, insulation, testing and commissioning of refrigerant copper pipe 1 ¼" size, 22 gauge for discharge & liquid line with all type of fitting like, elbow, clamping, aero flex insulation, wrapping tape, etc complete in all respect as approved by the Engineer incharge	P/Rft	390			
07	Providing /welding, brazing and installation of copper or copper alloy hand shut off valve (on both sides), Filter/Drier set in liquid line & liquid site glass in each circuit as per required size on both circuit of unit. All items from approved manufacturer.	P/Job	04			
08	Final pressure testing with Nitrogen (dry) gas, leak detecting, vacuums including gas charging with Refrigerant (R-410a or compatible) in the system as per manufacturer recommendations. Job also includes, commissioning, configuration, testing, trial operation, adjustments, calibration, de-bugging, configuring all set-ports as per the OEM instructions, complete in all respect as per instruction of Engineer Incharge.	P/Job	04			
09	Fabricating & fixing of 20 SWG GI sheet for supply air duct & supply air plenum box i/c hanging of duct with MS threaded rods, angle iron, duct sealant, rowel bolt & nut/bolts as per standard practice. Checking of air leakage from joints through light method as per instruction of engineer In charge.	P/Sft	1760			
10	Fabricating & fixing of 22 SWG GI sheet for supply air duct i/c hanging of duct with MS threaded rods, angle iron, duct sealant, rowel bolt & nut/bolts as per standard practice.	P/Sft	1150			

S. No	Description	Unit	Qty	Rate Per Unit		Amount (PKR)
				In Figures	In words	
	Checking of air leakage from joints through light method as per instruction of engineer In charge.					
11	Wiring for sub-main with 4 core 10mm² standard copper conductor PVC insulated & PVC sheathed circular/flat cable I/C 2.5 mm single core PVC insulated wire as CC in 30mm (1-1/4˝) dia UPVC conduit fitted on surface as required.	P/Mtr	95			
12	Providing and laying 4-core, 16mm PVC insulated and PVC sheathed 600/1000 Volt Grade with stranded copper conductor, unarmoured LT Cable in existing all kind of conduit or cable duct as per Pak P.W.D specifications as required	P/Mtr	40			
13	Providing and installing opposed blade Volume Control Dampers of Prime Quality Aluminum of minimum 14SWG thickness, (the quadrant volume damper shall be multi-leaf type, with a maximum blade width of 8// heavy duty quadrant operators of brass with stand-off mountings on thermally insulated ducts to provide clearance between the duct surface and operator, equal to the thickness of the insulation, capable of being locked at desired position conveniently wit engraved graduation, provided with a baked enamel finish with nut/bolt and gasket complete in all respect as approved and directed by the Engineer Incharge.	P/Sq Ft.	5490			
14	Providing, peeling & fixing of Close Cell-Flexible Elastomeric Foam Insulation-Density 60kg/M3 Self Adhesive reinforcing Mesh Scrim Durable Nitrile Butadiene Rubber (NBR) sheet Antimicrobial, Fire Retardant min. Thickness 100MM having built-in/factory applied cladding min. 99 Micron Aluminum PET-AL-PE Ultra Violet Radiation resistant, on HVAC air ducts whit the help of skilled workers. Job include wrapping of NBR type tape-UV-99 Micron UV plus aluminum-PET-AL-PE Ultra Violet Radiation min. thickness 99 micrometer on both vertical and horizontal joints and make best vapor barrier wrapping of insulation complete in all respect, as per instructions of Engineering Incharge.	P/Sft	2910			
15	Providing & fixing of water proof sound liner parachute type 25mm thick having density 24 Kg/m3 inside supply duct with cut screw complete from all respect.	P/Sft	2280			
16	Providing of approved colour powder coated Non-vision grille. Supply air diffuser with resistors & louvers for wind directions adjustment (vertical and horizontal), made of best quality aluminum. Nominal Rectangular profile with border having size 3/4". Counter sink fixing holes for screw-fixing or hooks for springs. Complete in all respect as per	P/Sq. In	9292			

S. No	Description	Unit	Qty	Rate Per Unit		Amount (PKR)
				In Figures	In words	
	instructions of Engineer Incharge.					
17	Provisioning and installation of insulated Flexible Duct 8" Dia including both ends jubilee Clamps Aluminum Tape etc complete in all respect	P/Rft	60			
18	Providing installation, testing and commissioning of refrigerant copper pipe 5/8" size 22 gauge with all type of fitting like, elbow, clamping, aero flex insulation, wrapping tape etc complete in all respect as approved by the Engineer Incharge.	P/Rft	390			
19	½" Thick cement plaster 1:3 on walls and columns etc. basement, plinth, mezzanine and ground floor including making edges, corners and curing etc complete. Job also include fixing of given rubber foundations.	P/Sft	214			
20	Wiring for sub-main with 3 core 2.5 mm² standard copper conductor, PVC insulated and PVC sheathed circular/flat cable I/c 1.5 mm² single core PVC insulated ware as ECC in 25 mm (1") dia UPVC conduit fitted on surface as required.	P/Mtr	425			
Total						

Total in Words : _____

_____

_____

Divisional Engineer ES (E&M)
JIAP – Karachi

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