مركـــز إيـــداع الأوراق المـــالية

Securities Depository Center

وثيقة مشروع تحديث أجهزة التكييف المركزي الخاصة بغرفة الخوادم

upgrade Computer Room Air Conditioner Unit Project

Computer Room Air Conditioning (CRAC) Upgrade Project

Request for Proposal (RFP)

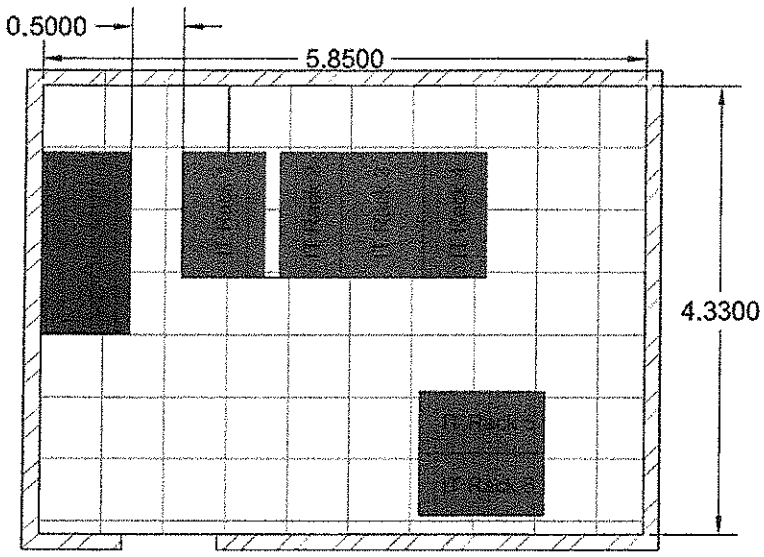
1. Introduction

1.1 Purpose

The project covers the supply, installation, testing, commissioning, and operation of a complete two-unit CRAC system, including all associated works, training, documentation, warranty, maintenance, and technical support.

2. Existing Environment and Cooling Load

The SDC Data Center currently has an existing CRAC unit serving the server room. The existing unit has reached the end of its operational lifecycle and requires frequent maintenance.



SDC intends to replace the existing cooling solution with a redundant CRAC configuration to improve cooling reliability and support the continuous operation of Data Center infrastructure.

The maximum current IT equipment power consumption within the server room is approximately **27 kW**. This value represents the current peak IT load based on the installed equipment. The IT load is expected to decrease in the near term due to planned equipment replacement and consolidation.

The bidder shall comply with the approved technical specifications set out in Section 7 and shall consider the above maximum current IT load, actual site conditions, room characteristics, airflow requirements, and other relevant site conditions when preparing its compliant solution.

3. Mandatory Site Visit and Site Survey

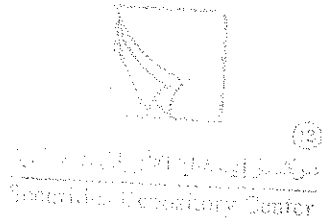
A mandatory site visit shall be conducted by the bidder prior to submission of its technical and financial offer.

The bidder shall inspect and verify the existing Data Center environment, including, as applicable:

- Existing CRAC system and installation locations.
- Piping and drainage routes.
- Electrical requirements and connection points.
- Access, transportation, and lifting arrangements.
- Available installation space.
- Any other site conditions relevant to the implementation.

The bidder shall be responsible for identifying all requirements necessary for the successful completion of the project and shall include all associated costs in its offer.

No additional cost shall be payable by SDC for site conditions that could reasonably have been identified during the mandatory site visit.



The date and time of the mandatory site visit shall be determined and communicated by SDC in the tender documents.

4. Implementation Risk Management and Method of Procedure (MOP)

As the main Data Center operates on a 24/7 basis, the successful bidder shall submit a detailed Method of Procedure (MOP) as part of its technical offer and obtain SDC approval before commencing critical implementation activities.

The MOP shall include, as a minimum:

- Step-by-step execution procedures for removal, installation, connection, testing, and integration of the CRAC system and Duty/Standby control system.
- Downtime management and service continuity measures.
- Identification of operational risks and preventive measures to protect live Data Center infrastructure.
- A clear rollback plan to restore normal operation in case of unexpected technical issues.
- Coordination procedures with the IT Department and required change management approvals before critical activities.

No critical activity affecting live Data Center infrastructure shall be performed without prior coordination and approval by SDC.

5. Scope of Work

The successful bidder shall provide a complete, operational, and properly commissioned CRAC solution, including all equipment, materials, accessories, labor, transportation, tools, and services required for completion of the project.

The scope shall include, but shall not be limited to:

1. Removal and relocation of the existing CRAC unit as detailed in Section 6

2. Supply and installation of two (2) new CRAC units in accordance with the approved technical specifications.
3. Supply and installation of the required Duty/Standby control system.
4. Supply and installation of all indoor and outdoor units and associated accessories.
5. Installation of required piping between indoor and outdoor units.
6. Drainage connections and associated works.
7. Connection of the required water source for humidification, where applicable to the proposed equipment.
8. All required electrical works and connections.
9. All required mechanical, electrical, civil, and installation works.
10. Testing and commissioning of the complete system.
11. On-site training for SDC personnel.
12. Provision of technical documentation, drawings, manuals, and commissioning reports.
13. Warranty, maintenance, spare parts, and technical support in accordance with the tender requirements.

The bidder shall include all requirements necessary to deliver a complete and fully operational system. No additional cost shall be payable by SDC for any item, material, accessory, labor, transportation, equipment, or service required to complete the defined scope.

6. Removal and Relocation of Existing CRAC Unit

The successful bidder shall safely disconnect, dismantle, remove, handle, transport, and relocate the existing CRAC unit and all associated components to the SDC-designated storage area within the same building. The bidder shall provide all required manpower, tools, lifting equipment, protection materials, and other resources, and shall ensure that the Data Center, building, infrastructure, and SDC equipment are protected from damage throughout the works. All costs associated with the disconnection, removal, handling, transportation, and relocation shall be included in the bidder's offer.

7. Technical Specifications

Item	Minimum Requirement
Air Distribution	Down Flow
Cooling Capacity	25–28 kW
Air Flow Rate	6372 m^3/h minimum
Refrigerant Gas	R-410A
Outdoor operating Temperature	-10°C to 45°C
Compressor	One Inverter Compressor
Evaporator Fan	One EC Evaporator Fan
Remote Monitoring	BMS, SNMP
SMS	Optional
Alarm	High Temperature Alarm
Warranty	3 Years
Control Method	External Duty/Standby Control Box and/or Integrated Duty/Standby Interface Kit installed inside the units
Automatic Rotation	Automatic rotation between the two units based on adjustable operating time
Automatic Failover	Automatic switching to the standby unit in case of failure or critical alarm on the operating unit
High Cooling Demand	Operation of both units simultaneously in case of high room temperature or peak cooling demand

The above specifications represent the approved minimum technical requirements for the proposed solution.

The bidder shall clearly identify any deviation from the above requirements in the Technical Compliance Matrix.

8. Duty/Standby and Redundancy Control

The Duty/Standby control system shall provide, as a minimum:

8.1 Full-Capacity Redundancy

Each CRAC unit shall be capable of independently maintaining the required cooling conditions of the Data Center room under the specified design conditions.

The system shall therefore maintain the required cooling capability when either CRAC unit is unavailable, subject to the specified design conditions.

8.2 Automatic Rotation

The system shall automatically rotate the Duty and Standby roles between the two CRAC units based on an adjustable operating time.

8.3 Automatic Failover

In the event of failure or a critical alarm affecting the operating CRAC unit, the standby unit shall automatically start and assume the Duty role.

8.4 Simultaneous Operation

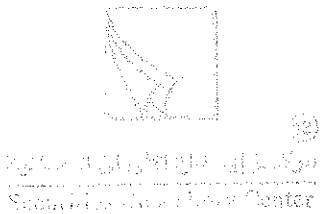
Both CRAC units shall operate simultaneously when required due to high room temperature, peak cooling demand, or other conditions requiring additional cooling capacity.

9. Testing and Commissioning

The successful bidder shall perform complete testing and commissioning of the installed CRAC system.

Testing shall include, as a minimum:

1. Individual operation of each CRAC unit.



2. Verification of the cooling operation of each individual unit.
3. Verification that each unit can independently provide the required cooling capability under the specified design conditions.
4. Automatic Duty/Standby rotation.
5. Automatic failover to the standby unit.
6. Simultaneous operation of both units under high cooling demand.
7. High-temperature alarm.
8. Remote monitoring functionality.
9. Verification of drainage and humidification connections, where applicable.
10. Verification of outdoor units and associated connections.
11. Verification of normal system operation before final acceptance.

Any defect or issue identified during testing and commissioning shall be rectified by the successful bidder at no additional cost to SDC.

10. Acceptance

Final acceptance shall be subject to:

- Completion of all supply and installation works.
- Successful testing and commissioning.
- Successful demonstration of full-capacity Duty/Standby operation.
- Successful demonstration that each CRAC unit can independently provide the required cooling capability under the specified design conditions.
- Successful demonstration of automatic rotation and failover.
- Successful demonstration of simultaneous operation of both units when required.
- Successful demonstration of monitoring and alarm functions.
- Verification of the required environmental conditions under the specified operating conditions.
- Completion of the required training.
- Submission of the required technical documentation.
- Completion of all corrective actions and observations identified by SDC.

11. Local Service Center and Spare Parts

The bidder shall have an authorized local service center in Jordan, either directly or through an authorized service partner, capable of providing preventive maintenance, corrective maintenance, emergency technical support, and repair services for the proposed CRAC system.

The bidder shall provide evidence of its local service capability and manufacturer authorization or partnership, where applicable.

The bidder shall ensure the availability in Jordan of adequate quantities of critical spare parts and consumable components required for operation and maintenance during the warranty period.

For spare parts not maintained locally due to their nature or low replacement frequency, the bidder shall state the expected delivery time in its technical offer.

The bidder shall provide a list of critical spare parts and indicate their availability in Jordan.

Spare parts and technical support shall remain available for a minimum period of five (5) years from the date of final acceptance.

The bidder shall state its guaranteed response time for critical technical incidents.

12. Training

The successful bidder shall provide on-site training for SDC personnel covering, as a minimum:

- Basic operation of the CRAC units.
- Monitoring and status indication.
- Alarm handling.
- Duty/Standby operation.
- Automatic failover and rotation.

13. Documentation

The successful bidder shall provide complete documentation upon completion of the project, including, as applicable:

- Manufacturer technical datasheets.
- Installation documentation.
- As-Built drawings.
- Relevant electrical and control drawings.
- Testing and commissioning procedures and reports.

14. Technical Offer Requirements

The technical offer shall include, as a minimum:

- **Technical Compliance Matrix**
- **Product Information**(Manufacturer, Country of origin, Model, Technical datasheets, Cooling capacity information, Control system information)
- **Cooling and Redundancy Design**: sufficient technical information demonstrating compliance with the approved cooling capacity and full-capacity Duty/Standby requirements, including independent operation of each CRAC unit, automatic failover, automatic rotation, and simultaneous operation.
- **Implementation Plan**: The bidder shall provide an implementation plan addressing the proposed execution approach, key activities, potential impact on existing Data Center systems, and the measures proposed to execute the works safely.

15. Technical Compliance Matrix

No.	Requirement	Comply / Deviate	Remarks
1	Down Flow		
2	Cooling Capacity: 25–28 kW		
3	Air Flow Rate: 6372 m^3/h minimum		
4	Refrigerant Gas: R-410A		
5	Ambient Temperature: 45°C		
6	Outdoor Temperature: -10°C to 45°C		
7	One Inverter Compressor		
8	One EC Evaporator Fan		
9	BMS / SNMP		
10	SMS – Optional		
11	High Temperature Alarm		
12	Three-Year Warranty		
13	Duty/Standby Control		
14	Automatic Rotation		
15	Automatic Failover		
16	Simultaneous Operation at High Cooling Demand		
17	Each CRAC unit shall independently provide the required cooling capability for the Data Center room		
18	Full-capacity Duty/Standby redundancy		

16. Bill of Quantities

No.	Description	Manufacturer	Model	Qty.
1	CRAC Indoor Unit			2
2	CRAC Outdoor Unit			2
3	Duty/Standby Control System (Control Box or Integrated Interface)			As Required
4	Monitoring Interface/Card			2
5	Piping and Accessories			As Required
6	Drainage Works			As Required
7	Electrical Works			As Required
8	Removal and Relocation of Existing CRAC Unit(s), including dismantling, handling, transportation, and placement at the SDC-designated storage area			1
9	Testing and Commissioning			1
10	Training and Documentation			1

17. Appendices

The following shall form part of the Technical Offer:

- **Appendix A – Technical Compliance Matrix**
- **Appendix B – Bill of Quantities**
- **Appendix C – Implementation Plan**
- **Appendix D – Company Profile and Similar Projects**
- **Appendix E – Product Datasheets and Technical Documentation**