

TERMS OF REFERENCE

DATA CENTER SAFETY MAINTENANCE

I. BACKGROUND

As time changes the demand for real-time digital services and data exchanges becomes exponential, it is important to keep data centers abreast with technology trends and implement certain measures in maintaining its safety and overall technical conditions. The Energy Regulatory Commission (ERC) operations are heavily involved with the flow of information from, to, and within different operating units to its stakeholders in the energy sector of the country. Taking into consideration the speed, quality, and redundancy of infrastructure and networks needed by the ERC operations to provide information systems for both ERC operating units and its clients, with no or very minimal downtime which is necessary for today's huge demand of information technology.

Data center functions in managing and storing critical resources that are vital to the continuous operations of the organization. In addition to technical equipment and keeping systems and data in a secured location, a data center also requires a significant number of facilities and infrastructure to keep the hardware and software up and running. This includes power subsystems, uninterruptable power supplies (UPS), ventilation and cooling systems, backup power and structured cabling. With the impending office transfer, the ERC needs an improved data center, this will allow a more seamless information systems operation and better centralization of critical ICT operations and equipment in storing, processing, and disseminating ERC data and applications.

II. CONTRACT PERIOD

The contract period upon receipt of Notice to Proceed (NTP) shall cover (a) within sixty (60) calendar days for the delivery of goods and its corresponding services and (b) ten (10) calendar days for the mechanical works intended for the existing server racks/cabinet.

III. APPROVED BUDGET FOR THE CONTRACT (ABC)

1. The Fund for this engagement shall be sourced from the General Appropriations Act (GAA) for the fiscal year 2021 of the ERC.
2. The ABC for the project is **Three Million Pesos (PhP3,000,000.00)** inclusive of all government taxes and other fees and charges.

IV. MODE OF PROCUREMENT

The procurement of the Energy Regulatory Commission's Data Center Safety Maintenance shall be undertaken through Competitive Bidding pursuant to RA No. 9184 and its 2016 Revised IRR.

V. QUALIFICATIONS OF THE SERVICE PROVIDER

The Contractor should have the necessary eligibility, experience and expertise in providing the service, and the following:

1. The bidder should be able to provide Manufacturer Certificates authorizing to sell all products proposed;
2. Must be an ICT solutions provider; and
3. The bidder must have at least one (1) employee with Certified Cabling Installer (any brand).

VI. MINIMUM TRACK RECORD

The ERC desires a service Contractor who has completed, within the last five (5) years from the date of submission and receipt of bids, a single largest contract that is similar to the Contract to be bid. A similar contract must be a security contract the value of which must be at least fifty percent (50%) of the Approved Budget for the Contract (ABC).

VII. SCOPE OF WORK AND DELIVERABLES

Data Center Safety Maintenance Project includes supply, delivery, and installation of the following:

A. ENVIRONMENTAL MONITORING SOFTWARE

1. Good for up to six (6) rack licenses.
2. Should be able to calculate Power Usage Effectiveness (PUE) and generate analytics and other reports such as but not limited to the following (at the minimum):
 - a. Power consumed and remaining power available using Smart Power Distribution Unit (PDU) and Simple Network Management Protocol (SNMP) from uninterruptible power supply (UPS).
 - b. List of identified environmental hot spots with thresholds and alerts.
3. Should be able to collect data from multiple systems and protocols SNMP, MODBUS-IP and Building Automation Controls Network (BACNET).
4. The Administration Console's user interface shall:
 - a. Be accessible via web browser and/or PC application software and should be upgradable for mobile/tablet app access in the future.
 - b. Provide textual or graphical views of data with drag and drop capability for the majority of the user interaction.
 - c. Provide a full graphical view (2D and 3D) of the data center floors and racks.

- d. Provide aggregate measured data over periods of time as specified automatically by the system or adjusted by the user.
 - e. Provide a top-down and 3D visualization of the floor with racks colorized to show the various levels of temperature threshold breach.
5. Allow thresholds to be applied to any measured data point and automatically send notification via email following prescribed protocol.

B. SENSOR READER GATEWAY

1. Single hardware appliance capable of:
 - a. 12 Digital Inputs
 - b. 4 Digital outputs
 - c. 16 of 1-wire sensors
 - d. 24 RS-485 sensors
2. Built-in web interface and logs data into internal memory of 250,000 records and will fit in DIN rail or 19" rack cabinet.
3. With options to connect to the ff:
 - a. GSM modem over RS232
 - b. SMS server to send SMS alarms
4. With IP Thermostat function that automatically relays sensor reading whenever outside the specific range.
5. With notifications that can be sent to a minimum of five (5) email addresses, SMS message recipients, or phone numbers.
6. With options to integrate with 3rd party software applications.
7. Can be monitored using mobile application in IOS and/or Android platforms.
8. With capability to send SNMP Traps and Modbus/TCP.
9. Sensors included: 4 sets of Temperature and Humidity sensors for racks (at least 4 meters).
 - a. Water Leak Detection with relay
 - b. GSM Modem Quad Band
 - c. Smoke Detector
10. With Alarm Beacon (light and sound)

C. SERIAL CONSOLE MANAGEMENT

1. 8 serial ports in 1U rack mount equipment
2. With dual AC power suppliers
3. With dual SFP ethernet ports
4. With dual RJ45 copper ports
5. With USB and KVM local console
6. With built-in modem
7. Java-free user interface
8. Security should be no lower than 256-bit AES and FIPS 140-2 encryption
9. With automatic DTE/DCE serial port detection
10. IPv6 compatible
11. Should have Two script-based automatic configuration methods via TFTP and USB
12. Fits in the standard rack (19-inch or 42U rack)

D. DATA CENTER INTERCONNECTION AND CABLING WORKS

1. Provide Category 6 cabling works for the data center.
2. Provide all materials, labor, equipment, tools, supervision and overhead for the furnishing and installing of cabling system and related work, in accordance with the specifications, including but not limited to the following:
 - a. Rough-ins
 - b. Cables and cabling devices
 - c. Powder coated cable tray with full thread round bar hanger
 - d. Hangers and support
 - e. Grounding and bonding systems
3. Cable management documentation.
4. Cabling shall be 23 AWG, 4-pair UTP; UL 1685 rated, round design, round solid filler.
5. Cable performance characterized up to 250MHz or better. Cable shall meet or exceed the performance requirements of ANSI/TIA/EIA-568B.2-1.
6. Materials and works specified herein shall comply with the applicable requirements of the Philippine Electrical

Code (Latest Edition), The Fire Code of the Philippines, The National building Code, ANSI/TIA/EIA-568- B – Commercial Building Standard for Telecommunications Pathways and Spaces, The Compilation of Building Telecommunications Cabling Systems for Philippine Standards by BICSP.

7. All cables and its components shall conform to ISO/IEC 11801 (International) Generic Cabling for Customer Premises standard (latest amendment and including all applicable addenda), and all related industry cabling standards documents.
8. All new wiring installation must pass the necessary test and results properly documented and presented to the End-user. Testing must be conducted in the presence of the End-User.
9. All cables and termination shall be 100% tested for defects in installation and to verify cable performance under installed conditions. Any defect in the cabling system installation including but not limited to cable, connectors, patch panels, and connector blocks shall be repaired or replaced to ensure 100% useable conductors in all cables installed.
10. 10 years warranty for the cabling installation.

E. MECHANICAL WORKS

1. Regrooming of existing server racks.
2. Installation of existing server racks in the approved area.
3. Equipment with active warranties will not be voided.

F. ELECTRICAL WORKS

1. Electrical Panel Board/s – to install Panel Boards required based on industry standards for UPS/PACU/Branch etc.:
 - i. Panel board and Enclosed Circuit Breakers shall be in accordance to NEMA-1, NEMA-3R, NEMA-12, NEMA 4x standards as to location and purpose of installation, painted in Powder Coated Wrinkled

Beige, Compliance with worldwide Standards: CEI 60947-1 et 2, UL508 / CSA22-2, JIS 8370 CE & CCC marking.

ii. Circuit monitoring for both Mains and Branches.

Current Transformers

- Must be clamp-on type
- Sizing will be based on phase rating and wire sizes
- Must be able to collect ampere, voltage, power (kW), Apparent Power (kVA), Power Factor, and Kilowatt-hour (kWh)
- System Voltage should be 230V / 3Ø / 60hz

Control Module

- Should be Ethernet based
 - Must have Meter bus port
 - Must have at least 7 CT input port
 - Must be high density to accommodate more than 90 channel branch circuits
 - Must have LCD display panel for onsite display of: Power, Current, Voltage, Apparent Power, Power Factor, Kilo-watt hour
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 - Network configuration
 - Should be easily installed using Rail module
 - Must be accessible via web and SNMPv1, v3, telnet, ftp capable
2. Supply, delivery, and installation of electrical materials that will meet the power requirements of existing one (1) unit of 5KVA UPS and five (5) units of 3KVA UPS.
 3. All power sockets must be grounded.
 4. Start-up testing and observation.

G. SECURITY DOOR

- i. Supply, delivery, and installation of Door Access Control with Fingerprint Security System:
 - With System Server: Monitor, Mouse, Keyboard; 1TB storage capacity; 8GB RAM, 166MHz; DDR4; 3.5GHZ processing speed; 2GB 128bit GDDR5 Video Card
 - With Door Access Management Software
 - Guarantee that only authorized individuals gain access to pre-determined locations
 - Logs all door access
 - Automatic notification for unauthenticated person in restricted areas
- ii. Door Access Control should have:
 - Display of 2.4-inch TFT LCD Color Screen
 - Fingerprint Capacity of 3,000
 - Optical Sensor
 - Integration with 3rd Party electric lock, door sensor, exit button and alarm doorbell
 - Should fit Glass Door (Glass Size: Double standard 72x80")

VIII. CONDITIONS ON THE DELIVERY AND INSTALLATION

This project is aligned with the implementation of the ERC Office Fit-Out, Design and Construction Services Project of the ERC Main Office (Office Fit-out) FY Q4 2021-Q3 2022. The Contractor of this Project shall be willing to provide flexibility on the schedule of delivery and installation of data center equipment and the provision of mechanical, electrical, and other services pertaining hereof based on the Office Fit-out Project schedule particularly after the construction of new ERC Data Center located at Exquadra Tower, 1 Jade Drive, Ortigas Center, Pasig City (Exquadra Tower).

For the delivery of data center equipment, in any case that the schedule of Office Fit-out Project causes delay, the Contractor may deliver the data center equipment temporarily to the old ERC

main office (Pacific Center Building, San Miguel Ave., Ortigas Center, Pasig City) while waiting for the new ERC Data Center construction without incurring additional cost. Upon availability of the new ERC Data Center, the Contractor is expected to provide logistical services for the delivery of data center equipment from the old ERC Main Office to the new ERC Data Center with no additional cost.

The installation of data center equipment is to be accomplished in the new ERC Data Center at Exquadra Tower.

IX. WARRANTY AND MAINTENANCE

1. Twelve (12) months warranty upon installation for all equipment installed.
2. Cabling Works / System Components must adhere to the ten (10) years industry standards compliance product warranty.
3. Workmanship maintenance contract for twelve (12) months with no additional cost.
4. With parts and next business day on-site service support for all equipment during the whole duration of the warranty.
5. Technical end-user training for the PPIS-MISD personnel.
6. After-sales support services.

X. PAYMENT SCHEME

1. 20% of the payment shall be released upon 100% delivery of the ICT equipment on the site.
2. The remaining 80% will be released upon 100% installation and acceptance of the project.
3. ERC has the right to terminate/cancel the project at any time upon determining bidder cannot deliver and fully utilize/setup the capability and features of the supplied equipment and infrastructure of the ERC.
4. Upon cancellation, 20% or the 1st installment of the payment must be returned to the ERC.

XI. LIQUIDATED DAMAGES

- a) Where the service provider refuses or fails to satisfactorily complete the work within the specified contract time, plus any extension time duly granted and is hereby in default under the contract, the service provider shall pay ERC for liquidated damages, and not by way of penalty, an amount, as provided in the conditions of the contract, equal to one tenth (1/10) of one percent (1%) of the cost of the unperformed portion for every day of delay. The maximum deduction shall be ten percent (10%) of the amount of the contract, of which ERC shall have the discretion to terminate the contract without prejudice to any other action or remedy it may take to recover the losses incurred as a result of the service provider's failure/non-performance, including but not limited to forfeiture of performance security and/or blacklisting of the latter.
- b) Entitlement to such liquidated damages, ERC need not prove the damages actually incurred. Said damages in any amount shall be deducted from any money due or which may become due the service provider under the Contract and/or collect such liquidated damages from the retention money or other securities posted by the service provider at the ERC's convenience.

XII. RESERVATION CLAUSE

The Energy Regulatory Commission (ERC) reserves the right to reject any and all bids, declare a failure of bidding or not award the contract at any time prior to contract award in accordance with Section 41 of R.A. 9184 and its IRR, without thereby incurring any liability to the affected bidder or bidders.