PHILIPPINE BIDDING DOCUMENTS

Procurement of Systems Integration Services for the NEA Digital Dashboard Command Center (DDCC) Pilot Phase

Government of the Republic of the Philippines

Sixth Edition
July 2020

Preface

These Philippine Bidding Documents (PBDs) for the procurement of Infrastructure Projects (hereinafter referred to also as the "Works") through Competitive Bidding have been prepared by the Government of the Philippines for use by all branches, agencies, departments, bureaus, offices, or instrumentalities of the government, including government-owned and/or -controlled corporations, government financial institutions, state universities and colleges, local government units, and autonomous regional government. The procedures and practices presented in this document have been developed through broad experience, and are for mandatory use in projects that are financed in whole or in part by the Government of the Philippines or any foreign government/foreign or international financing institution in accordance with the provisions of the 2016 revised Implementing Rules and Regulations (IRR) of Republic Act (RA) No. 9184.

The PBDs are intended as a model for admeasurements (unit prices or unit rates in a bill of quantities) types of contract, which are the most common in Works contracting.

The Bidding Documents shall clearly and adequately define, among others: (i) the objectives, scope, and expected outputs and/or results of the proposed contract; (ii) the eligibility requirements of Bidders; (iii) the expected contract duration; and (iv)the obligations, duties, and/or functions of the winning Bidder.

Care should be taken to check the relevance of the provisions of the PBDs against the requirements of the specific Works to be procured. If duplication of a subject is inevitable in other sections of the document prepared by the Procuring Entity, care must be exercised to avoid contradictions between clauses dealing with the same matter.

Moreover, each section is prepared with notes intended only as information for the Procuring Entity or the person drafting the Bidding Documents. They shall not be included in the final documents. The following general directions should be observed when using the documents:

a. All the documents listed in the Table of Contents are normally required for the procurement of Infrastructure Projects. However, they should be adapted as necessary to the circumstances of the particular Project.

b. Specific details, such as the "*name of the Procuring Entity*" and "*address for bid submission,*" should be furnished in the Instructions to Bidders, Bid Data Sheet, and Special Conditions of Contract. The final documents should contain neither blank spaces nor options.

c. This Preface and the footnotes or notes in italics included in the Invitation to Bid, BDS, General Conditions of Contract, Special Conditions of Contract, Specifications, Drawings, and Bill of Quantities are not part of the text of the final document, although they contain instructions that the Procuring Entity should strictly follow.

d. The cover should be modified as required to identify the Bidding Documents as to the names of the Project, Contract, and Procuring Entity, in addition to date of issue.

e. Modifications for specific Procurement Project details should be provided in the Special Conditions of Contract as amendments to the Conditions of Contract. For easy completion, whenever reference has to be made to specific clauses in the Bid Data Sheet or Special Conditions of Contract, these terms shall be printed in bold typeface on Sections I (Instructions to Bidders) and III (General Conditions of Contract), respectively.

f.   For guidelines on the use of Bidding Forms and the procurement of Foreign-Assisted Projects, these will be covered by a separate issuance of the Government Procurement Policy Board.

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Glossary of
Terms, Abbreviations, and Acronyms

ABC – Approved Budget for the Contract.

ARCC – Allowable Range of Contract Cost.

BAC – Bids and Awards Committee.

Bid – A signed offer or proposal to undertake a contract submitted by a bidder in response to and in consonance with the requirements of the bidding documents. Also referred to as *Proposal* and *Tender*. (2016 revised IRR, Section 5[c])

Bidder – Refers to a contractor, manufacturer, supplier, distributor and/or consultant who submits a bid in response to the requirements of the Bidding Documents. (2016 revised IRR, Section 5[d])

Bidding Documents – The documents issued by the Procuring Entity as the bases for bids, furnishing all information necessary for a prospective bidder to prepare a bid for the Goods, Infrastructure Projects, and/or Consulting Services required by the Procuring Entity. (2016 revised IRR, Section 5[e])

BIR – Bureau of Internal Revenue.

BSP – Bangko Sentral ng Pilipinas.

CDA – Cooperative Development Authority.

Consulting Services – Refer to services for Infrastructure Projects and other types of projects or activities of the GOP requiring adequate external technical and professional expertise that are beyond the capability and/or capacity of the GOP to undertake such as, but not limited to: (i) advisory and review services; (ii) pre-investment or feasibility studies; (iii) design; (iv) construction supervision; (v) management and related services; and (vi) other technical services or special studies. (2016 revised IRR, Section 5[i])

Contract – Refers to the agreement entered into between the Procuring Entity and the Supplier or Manufacturer or Distributor or Service Provider for procurement of Goods and Services; Contractor for Procurement of Infrastructure Projects; or Consultant or Consulting Firm for Procurement of Consulting Services; as the case may be, as recorded in the Contract Form signed by the parties, including all attachments and appendices thereto and all documents incorporated by reference therein.

Contractor – is a natural or juridical entity whose proposal was accepted by the Procuring Entity and to whom the Contract to execute the Work was awarded. Contractor as used in these Bidding Documents may likewise refer to a supplier, distributor, manufacturer, or consultant.

CPI – Consumer Price Index.

DOLE – Department of Labor and Employment.

DTI – Department of Trade and Industry.

Foreign-funded Procurement or Foreign-Assisted Project – Refers to procurement whose funding source is from a foreign government, foreign or international financing institution as specified in the Treaty or International or Executive Agreement. (2016 revised IRR, Section 5[b]).

GFI – Government Financial Institution.

GOCC – Government-owned and/or –controlled corporation.

Goods – Refer to all items, supplies, materials and general support services, except Consulting Services and Infrastructure Projects, which may be needed in the transaction of public businesses or in the pursuit of any government undertaking, project or activity, whether in the nature of equipment, furniture, stationery, materials for construction, or personal property of any kind, including non-personal or contractual services such as the repair and maintenance of equipment and furniture, as well as trucking, hauling, janitorial, security, and related or analogous services, as well as procurement of materials and supplies provided by the Procuring Entity for such services. The term "related" or "analogous services" shall include, but is not limited to, lease or purchase of office space, media advertisements, health maintenance services, and other services essential to the operation of the Procuring Entity. (2016 revised IRR, Section 5[r])

GOP – Government of the Philippines.

Infrastructure Projects – Include the construction, improvement, rehabilitation, demolition, repair, restoration or maintenance of roads and bridges, railways, airports, seaports, communication facilities, civil works components of information technology projects, irrigation, flood control and drainage, water supply, sanitation, sewerage and solid waste management systems, shore protection, energy/power and electrification facilities, national buildings, school buildings, hospital buildings, and other related construction projects of the government. Also referred to as *civil works or works*. (2016 revised IRR, Section 5[u])

LGUs – Local Government Units.

NFCC – Net Financial Contracting Capacity.

NGA – National Government Agency.

PCAB – Philippine Contractors Accreditation Board.

PhilGEPS - Philippine Government Electronic Procurement System.

Procurement Project – refers to a specific or identified procurement covering goods, infrastructure project or consulting services. A Procurement Project shall be described, detailed, and scheduled in the Project Procurement Management Plan prepared by the agency which shall be consolidated in the procuring entity's Annual Procurement Plan. (GPPB Circular No. 06-2019 dated 17 July 2019)

PSA – Philippine Statistics Authority.

SEC – Securities and Exchange Commission.

SLCC – Single Largest Completed Contract.

UN – United Nations.

Additional Terms as prescribe by the Procuring Entity:

IT Systems Integrator - Is a company that brings various computer hardware, software programs, equipment and network infrastructure for component sub-systems from multiple suppliers together into a whole integrated system, ensuring that those subsystems are able to interface and work together to deliver specified system features and functions.

Section I. Invitation to Bid

NATIONAL ELECTRIFICATION ADMINISTRATION
"The 1ˢᵗ Performance Governance System-Institutionalized National Government Agency"
57 NIA Road, Government Center, Diliman, Quezon City   1100

Management
System
ISO 9001:2015
TÜVRheinland®
CERTIFIED
www.tuv.com
ID 9108043000

Invitation to Bid for

Procurement of Systems Integration Services for the NEA Digital Dashboard Command Center (DDCC) Pilot Phase

1. The *National Electrification Administration (NEA)*, through the *2023 Corporate Operating Budget (COB)* intends to apply the sum of *Twenty Million Pesos (₱20,000,000.00)* being the Approved Budget for the Contract (ABC) to payments under the contract for *Procurement of Systems Integration Services for the NEA Digital Dashboard Command Center (DDCC) Pilot Phase*. Bids received in excess of the ABC shall be automatically rejected at bid opening.

2. The *National Electrification Administration (NEA)* now invites bids for the above Procurement Project. Completion of the Works required is *Six (6) months duration of the Contract which will commence within seven (7) calendar days upon issuance of the Notice to Proceed (NTP)*. Bidders should have completed a contract similar to the Project. The description of an eligible bidder is contained in the Bidding Documents, particularly, in Section II (Instructions to Bidders).

3. Bidding will be conducted through open competitive bidding procedures using non-discretionary *"pass/fail"* criterion as specified in the 2016 revised Implementing Rules and Regulations (IRR) of Republic Act (RA) No. 9184.

4. Interested bidders may obtain further information from *National Electrification Administration (NEA)* and inspect the Bidding Documents at *#57 NIA Road, Government Center, Diliman, Quezon City* from *Monday to Friday, 8:00 a.m. to 5:00 p.m.*

5. A complete set of Bidding Documents may be acquired by interested bidders on *10 October 2023* from given the address *and upon payment of the applicable fee for the Bidding Documents, pursuant to the latest Guidelines issued by the GPPB, in the amount of Twenty-Five Thousand Pesos (₱25,000.00)*. The Procuring Entity shall allow the bidder to present its proof of payment for the fees *in person*.

6. The *National Electrification Administration (NEA)* will hold a Pre-Bid Conference on *18 October 2023, 10:00 a.m.* at *Cultural Affairs Room (CAR), 2ⁿᵈ Floor, NEA Building, #57 NIA Road, Diliman, Quezon City* which shall be open to prospective bidders.

7. Bids must be duly received by the *SBAC Secretariats* through manual submission at the office address as indicated above on or before *30 October 2023 at 10:00 a.m.* Late bids shall not be accepted.

8. All bids must be accompanied by a bid security in any of the acceptable forms and in the amount stated in **ITB** Clause 16.

9. Bid opening shall be on *30 October 2023 at 10:30 a.m.* at the *Cultural Affairs Room (CAR), 2ⁿᵈ Floor, NEA Building, #57 NIA Road, Diliman, Quezon City*. Bids will be opened in the presence of the bidders' representatives who choose to attend the activity.

10. The *National Electrification Administration (NEA) 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 Sections 35.6 and 41 of the 2016 revised Implementing Rules and Regulations (IRR) of RA No. 9184, without thereby incurring any liability to the affected bidder or bidders.

11. For further information, please refer to:

Mr. Julio H. Colina
SBAC Secretariat (Office Order No. 2023-162)
National Electrification Administration
#57 NIA Road, Government Center, Diliman, Quezon City
jhcolina@nea.gov.ph or jhcolina@yahoo.com
8929 1909 local 121 or 130

12. You may visit the following websites:

For downloading of Bidding Documents:
https://nea.gov.ph/ao39/bids-and-notices
https://notices.philgeps.gov.ph

Quezon City, Philippines, 10 October 2023

Atty. VIC P. ALVARO
Chairperson, SBAC (Office Order No. 2023-162)

Section II. Instructions to Bidders

1. Scope of Bid

The Procuring Entity, *National Electrification Administration* invites Bids for the *Procurement of Systems Integration Services for the NEA Digital Dashboard Command Center (DDCC) Pilot Phase*, with Project Identification Number *SBAC-2023-01*.

The Procurement Project (referred to herein as the "Project") is for the construction of Works, as described in Section VI (Specifications).

2. Funding Information

2.1. The GOP through the source of funding as indicated below for *CY 2023* in the amount of *Twenty Million Pesos (₱20,000,000.00)*.

2.2. The source of funding is:

a. GOCC and GFIs, the proposed Corporate Operating Budget.

3. Bidding Requirements

The Bidding for the Project shall be governed by all the provisions of RA No. 9184 and its 2016 revised IRR, including its Generic Procurement Manual and associated policies, rules and regulations as the primary source thereof, while the herein clauses shall serve as the secondary source thereof.

Any amendments made to the IRR and other GPPB issuances shall be applicable only to the ongoing posting, advertisement, or invitation to bid by the BAC through the issuance of a supplemental or bid bulletin.

The Bidder, by the act of submitting its Bid, shall be deemed to have inspected the site, determined the general characteristics of the contracted Works and the conditions for this Project, such as the location and the nature of the work; (b) climatic conditions; (c) transportation facilities; (c) nature and condition of the terrain, geological conditions at the site communication facilities, requirements, location and availability of construction aggregates and other materials, labor, water, electric power and access roads; and (d) other factors that may affect the cost, duration and execution or implementation of the contract, project, or work and examine all instructions, forms, terms, and project requirements in the Bidding Documents.

4. Corrupt, Fraudulent, Collusive, Coercive, and Obstructive Practices

The Procuring Entity, as well as the Bidders and Contractors, shall observe the highest standard of ethics during the procurement and execution of the contract. They or through an agent shall not engage in corrupt, fraudulent, collusive, coercive, and obstructive practices defined under Annex "I" of the 2016 revised IRR of RA No. 9184 or other integrity violations in competing for the Project.

5. Eligible Bidders

5.1. Only Bids of Bidders found to be legally, technically, and financially capable will be evaluated.

5.2. The Bidder must have an experience of having completed a Single Largest Completed Contract (SLCC) that is similar to this Project, equivalent to at least

fifty percent (50%) of the ABC adjusted, if necessary, by the Bidder to current prices using the PSA's CPI, except under conditions provided for in Section 23.4.2.4 of the 2016 revised IRR of RA No. 9184.

A contract is considered to be "similar" to the contract to be bid if it has the major categories of work stated in the **BDS**.

5.3. For Foreign-funded Procurement, the Procuring Entity and the foreign government/foreign or international financing institution may agree on another track record requirement, as specified in the Bidding Document prepared for this purpose.

5.4. The Bidders shall comply with the eligibility criteria under Section 23.4.2 of the 2016 IRR of RA No. 9184.

5.5. The bidder should have successfully completed at least two (2) Systems Integration Projects with similar technical complexity within the last three (3) years. (As prescribed by the End-User in letter Q. of the Terms of Reference)

5.6. The Bidder must have a minimum of five (5) years proven experience as a systems integrator that has completed projects covering the supply, delivery, installation and maintenance of software, computer hardware, and services.

Must have a physical office located in the Philippines operating for more than five (5) years supporting similar IT-based projects. (As prescribed by the End-User in letter D of the Terms of Reference)

6. Origin of Associated Goods

There is no restriction on the origin of Goods other than those prohibited by a decision of the UN Security Council taken under Chapter VII of the Charter of the UN.

7. Subcontracts

7.1. The Bidder may subcontract portions of the Project to the extent allowed by the Procuring Entity as stated herein, but in no case more than forty percent (40%) of the Project.

The Procuring Entity has prescribed that:

As a turnkey project, the winning bidder shall not subcontract on a full turnkey basis the entire project scope of work, or more than forty percent (40%) of the contract value to a single vendor/supplier, and shall retain full and single accountability for all deliverables.

    a. Subcontracting is allowed. The portions of the Project and the maximum percentage allowed to be subcontracted are indicated in the **BDS**, which shall not exceed forty percent (40%) of the contracted Works.

7.1. The Bidder must submit together with its Bid the documentary requirements of the subcontractor(s) complying with the eligibility criteria stated in **ITB** Clause 5 in accordance with Section 23.4 of the 2016 revised IRR of RA No. 9184 pursuant to Section 23.1 thereof.

7.2. The Supplier may identify its subcontractor during the contract implementation stage. Subcontractors identified during the bidding may be changed during the implementation of this Contract. Subcontractors must submit the documentary

requirements under Section 23.1 of the 2016 revised IRR of RA No. 9184 and comply with the eligibility criteria specified in **ITB** Clause 5 to the implementing or end-user unit.

7.3. Subcontracting of any portion of the Project does not relieve the Contractor of any liability or obligation under the Contract. The Supplier will be responsible for the acts, defaults, and negligence of any subcontractor, its agents, servants, or workmen as fully as if these were the Contractor's own acts, defaults, or negligence, or those of its agents, servants, or workmen.

8. Pre-Bid Conference

The *National Electrification Administration (NEA)* will hold a Pre-Bid Conference on *18 October 2023, 10:00 a.m.* at *Cultural Affairs Room (CAR), 2nd Floor, NEA Building, #57 NIA Road, Diliman, Quezon City* which shall be open to prospective bidders.

9. Clarification and Amendment of Bidding Documents

Prospective bidders may request for clarification on and/or interpretation of any part of the Bidding Documents. Such requests must be in writing and received by the Procuring Entity, either at its given address or through electronic mail indicated in the **IB**, at least ten (10) calendar days before the deadline set for the submission and receipt of Bids.

10. Documents Comprising the Bid: Eligibility and Technical Components

10.1. The bidder shall prepare **One (1) Original** and **Two (2) Photocopies** for each Eligibility and Technical Components.

10.2. The first envelope shall contain the eligibility and technical documents of the Bid as specified in **Section VIII. Checklist of Technical and Financial Documents.**

10.3. The bidder must submit a profile of the Project Team that will be assigned to deliver and implement this project. The profile must include curriculum vitae of all project team members with work experience on systems integration relevant to the project scope of work. (As prescribed by the End-User in letter H of the Terms of Reference).

11. Documents Comprising the Bid: Financial Component

11.1. The bidder shall prepare **One (1) Original** and **Two (2) Photocopies** for each Financial Component.

11.2. The second bid envelope shall contain the financial documents for the Bid as specified in **Section I. Checklist of Technical and Financial Documents.**

11.3. Any bid exceeding the ABC indicated in paragraph 1 of the **IB** shall not be accepted.

12. Bid Prices

All bid prices for the given scope of work in the Project as awarded shall be considered as fixed prices, and therefore not subject to price escalation during contract implementation, except under extraordinary circumstances as determined by the NEDA

and approved by the GPPB pursuant to the revised Guidelines for Contract Price Escalation guidelines.

13. Bid and Payment Currencies

13.1 Bid prices may be quoted in the local currency or tradeable currency accepted by the BSP at the discretion of the Bidder. However, for purposes of bid evaluation, Bids denominated in foreign currencies shall be converted to Philippine currency based on the exchange rate as published in the BSP reference rate bulletin on the day of the bid opening.

13.2 *Payment of the contract price shall be made in:*

    a. Philippine Pesos.

14. Bid Security

14.1 The Bidder shall submit a Bid Securing Declaration or any form of Bid Security in the amount indicated in the **BDS**, which shall be not less than the percentage of the ABC in accordance with the schedule in the **BDS**.

14.2 The Bid and bid security shall be valid for a period of **One Hundred Twenty (120) Days** from the date of opening of bids. Any bid not accompanied by an acceptable bid security shall be rejected by the Procuring Entity as non-responsive.

15. Sealing and Marking of Bids

Each Bidder shall submit one copy and additional two copies of the first and second components of its Bid.

The Procuring Entity may request additional hard copies and/or electronic copies of the Bid. However, failure of the Bidders to comply with the said request shall not be a ground for disqualification.

16. Deadline for Submission of Bids

Bids must be duly received by the *SBAC Secretariats* through manual submission at the office address as indicated above on or before *30 October 2023 at 10:00 a.m.* Late bids shall not be accepted.

17. Opening and Preliminary Examination of Bids

17.1 The BAC shall open the Bids in public at the time, on the date, and at the place specified in paragraph 9 of the **IB**. The Bidders' representatives who are present shall sign a register evidencing their attendance. In case videoconferencing, webcasting or other similar technologies will be used, attendance of participants shall likewise be recorded by the BAC Secretariat.

In case the Bids cannot be opened as scheduled due to justifiable reasons, the rescheduling requirements under Section 29 of the 2016 revised IRR of RA No. 9184 shall prevail.

17.2 The preliminary examination of Bids shall be governed by Section 30 of the 2016 revised IRR of RA No. 9184.

18.   Detailed Evaluation and Comparison of Bids

18.1   The Procuring Entity's BAC shall immediately conduct a detailed evaluation of all Bids rated "*passed*" using non-discretionary pass/fail criteria. The BAC shall consider the conditions in the evaluation of Bids under Section 32.2 of 2016 revised IRR of RA No. 9184.

18.2   If the Project allows partial bids, all Bids and combinations of Bids as indicated in the **BDS** shall be received by the same deadline and opened and evaluated simultaneously so as to determine the Bid or combination of Bids offering the lowest calculated cost to the Procuring Entity. Bid Security as required by **ITB** Clause 15 shall be submitted for each contract (lot) separately.

18.3   In all cases, the NFCC computation pursuant to Section 23.4.2.6 of the 2016 revised IRR of RA No. 9184 must be sufficient for the total of the ABCs for all the lots participated in by the prospective Bidder.

19.   Post Qualification

Within a non-extendible period of five (5) calendar days from receipt by the Bidder of the notice from the BAC that it submitted the Lowest Calculated Bid, the Bidder shall submit its latest income and business tax returns filed and paid through the BIR Electronic Filing and Payment System (eFPS), and other appropriate licenses and permits required by law and stated in the **BDS**.

20.   Signing of the Contract

The documents required in Section 37.2 of the 2016 revised IRR of RA No. 9184 shall form part of the Contract. Additional Contract documents are indicated in the **BDS**.

Section III. Bid Data Sheet

Bid Data Sheet

ITB Clause	
5.2	For this purpose, contracts similar to the Project refer to contracts which have the same major categories of work, which shall be: ***Systems Integration Services for Digital Dashboard Command Center.***
5.5	***The bidder should have successfully completed at least two (2) Systems Integration Projects with similar technical complexity within the last three (3) years. (As prescribed by the End-User in letter Q of the Terms of Reference)***
5.6	***The Bidder must have a minimum of five (5) years proven experience as a systems integrator that has completed projects covering the supply, delivery, installation and maintenance of software, computer hardware, and services.*** ***Must have a physical office located in the Philippines operating for more than five (5) years supporting similar IT-based projects. (As prescribed by the End-User in letter D of the Terms of Reference)***
7.1	***As a turnkey project, the winning bidder shall not subcontract on a full turnkey basis the entire project scope of work, or more than forty percent (40%) of the contract value to a single vendor/supplier, and shall retain full and single accountability for all deliverables.***
10.3	The bidder must submit a profile of the Project Team that will be assigned to deliver and implement this project. The profile must include curriculum vitae of all project team members with work experience on systems integration relevant to the project scope of work. The Project Team must include the following key lead team members (with respective roles, required experience profile and responsibilities.

Member – Role	Responsibilities	Required Experience Profile
Systems Integration Project Manager	Overall planning, management and control of the NEA-DDCC Project to meet project objectives and deliverables within agreed timelines.	Must have handled overall management of at least two large (over Php250M), systems integration (information technology) projects involving, custom software development, computer hardware and support services
Software development Team Lead	Management of the software development team to meet NEA IDS functional requirements	Must have handled software development projects with team size of at least ten members
Engineering Lead	Technical guidance to the team for the execution of the EC - SCADA interface	Licensed engineer with work experience in information technology and energy/ power related projects

ITB Clause	
14 .1	The bid security shall be in the form of a Bid Securing Declaration or any of the following forms and amounts: a. The amount of not less than ***Four Hundred Thousand Pesos (₱ 400,000.00) or two percent (2%) of the ABC,*** if bid security is in cash, cashier's/manager's check, bank draft/guarantee or irrevocable letter of credit; b. The amount of not less than ***One Million Pesos (₱ 1,000,000.00) or five percent (5%) of ABC]*** if bid security is in Surety Bond.

Section IV. General Conditions of Contract

1. Scope of Contract

This Contract shall include all such items, although not specifically mentioned, that can be reasonably inferred as being required for its completion as if such items were expressly mentioned herein. All the provisions of RA No. 9184 and its 2016 revised IRR, including the Generic Procurement Manual, and associated issuances, constitute the primary source for the terms and conditions of the Contract, and thus, applicable in contract implementation. Herein clauses shall serve as the secondary source for the terms and conditions of the Contract.

This is without prejudice to Sections 74.1 and 74.2 of the 2016 revised IRR of RA No. 9184 allowing the GPPB to amend the IRR, which shall be applied to all procurement activities, the advertisement, posting, or invitation of which were issued after the effectivity of the said amendment.

2. Sectional Completion of Works

If sectional completion is specified in the **Special Conditions of Contract (SCC)**, references in the Conditions of Contract to the Works, the Completion Date, and the Intended Completion Date shall apply to any Section of the Works (other than references to the Completion Date and Intended Completion Date for the whole of the Works).

3. Possession of Site

3.1   The Procuring Entity shall give possession of all or parts of the Site to the Contractor based on the schedule of delivery indicated in the **SCC**, which corresponds to the execution of the Works. If the Contractor suffers delay or incurs cost from failure on the part of the Procuring Entity to give possession in accordance with the terms of this clause, the Procuring Entity's Representative shall give the Contractor a Contract Time Extension and certify such sum as fair to cover the cost incurred, which sum shall be paid by Procuring Entity.

3.2   If possession of a portion is not given by the above date, the Procuring Entity will be deemed to have delayed the start of the relevant activities. The resulting adjustments in contract time to address such delay may be addressed through contract extension provided under Annex "E" of the 2016 revised IRR of RA No. 9184.

4. The Contractor's Obligations

The Contractor shall employ the key personnel named in the Schedule of Key Personnel indicating their designation, in accordance with **ITB** Clause 10.3 and specified in the **BDS**, to carry out the supervision of the Works.

The Procuring Entity will approve any proposed replacement of key personnel only if their relevant qualifications and abilities are equal to or better than those of the personnel listed in the Schedule.

5. Performance Security

5.1.   Within ten (10) calendar days from receipt of the Notice of Award from the Procuring Entity but in no case later than the signing of the contract by both parties, the successful Bidder shall furnish the performance security in any of the forms prescribed in Section 39 of the 2016 revised IRR.

5.2. The Contractor, by entering into the Contract with the Procuring Entity, acknowledges the right of the Procuring Entity to institute action pursuant to RA No. 3688 against any subcontractor be they an individual, firm, partnership, corporation, or association supplying the Contractor with labor, materials and/or equipment for the performance of this Contract.

6. Site Investigation Reports

The Contractor, in preparing the Bid, shall rely on any Site Investigation Reports referred to in the **SCC** supplemented by any information obtained by the Contractor.

7. Warranty

7.1. In case the Contractor fails to undertake the repair works under Section 62.2.2 of the 2016 revised IRR, the Procuring Entity shall forfeit its performance security, subject its property(ies) to attachment or garnishment proceedings, and perpetually disqualify it from participating in any public bidding. All payables of the GOP in his favor shall be offset to recover the costs.

7.2. The warranty against Structural Defects/Failures, except that occasioned-on force majeure, shall cover the period from the date of issuance of the Certificate of Final Acceptance by the Procuring Entity. Specific duration of the warranty is found in the **SCC**.

8. Liability of the Contractor

Subject to additional provisions, if any, set forth in the **SCC**, the Contractor's liability under this Contract shall be as provided by the laws of the Republic of the Philippines.

If the Contractor is a joint venture, all partners to the joint venture shall be jointly and severally liable to the Procuring Entity.

9. Termination for Other Causes

Contract termination shall be initiated in case it is determined *prima facie* by the Procuring Entity that the Contractor has engaged, before, or during the implementation of the contract, in unlawful deeds and behaviors relative to contract acquisition and implementation, such as, but not limited to corrupt, fraudulent, collusive, coercive, and obstructive practices as stated in **ITB** Clause 4.

10. Dayworks

Subject to the guidelines on Variation Order in Annex "E" of the 2016 revised IRR of RA No. 9184, and if applicable as indicated in the **SCC**, the Dayworks rates in the Contractor's Bid shall be used for small additional amounts of work only when the Procuring Entity's Representative has given written instructions in advance for additional work to be paid for in that way.

11. Program of Work

11.1. The Contractor shall submit to the Procuring Entity's Representative for approval the said Program of Work showing the general methods, arrangements,

order, and timing for all the activities in the Works. The submissions of the Program of Work are indicated in the **SCC.**

11.2. The Contractor shall submit to the Procuring Entity's Representative for approval an updated Program of Work at intervals no longer than the period stated in the **SCC.** If the Contractor does not submit an updated Program of Work within this period, the Procuring Entity's Representative may withhold the amount stated in the **SCC** from the next payment certificate and continue to withhold this amount until the next payment after the date on which the overdue Program of Work has been submitted.

11.3. The Program of Works shall be in accordance with the timelines prescribe by the End-User:

Sign-off on Detailed System Design, Project Implementation Plan and UAT Test Parameters	15%
Hardware and System Software Delivery and Installation of components	35%
Delivery of Solution Software and completion of User Acceptance Testing	20%
Completion of User Training	10%
Deployment and Implementation of the Dashboard Solution Software	10%
Retention	10%
TOTAL	100%

12. Instructions, Inspections and Audits

The Contractor shall permit the GOP or the Procuring Entity to inspect the Contractor's accounts and records relating to the performance of the Contractor and to have them audited by auditors of the GOP or the Procuring Entity, as may be required.

13. Advance Payment

The Procuring Entity shall, upon a written request of the Contractor which shall be submitted as a Contract document, make an advance payment to the Contractor in an amount not exceeding fifteen percent (15%) of the total contract price, to be made in lump sum, or at the most two installments according to a schedule specified in the **SCC,** subject to the requirements in Annex "E" of the 2016 revised IRR of RA No. 9184.

14. Payment Schedules

Sign-off on Detailed System Design, Project Implementation Plan and UAT Test Parameters	15%
Hardware and System Software Delivery and Installation of components	35%
Delivery of Solution Software and completion of User Acceptance Testing	20%
Completion of User Training	10%
Deployment and Implementation of the Dashboard Solution Software	10%
Retention	10%
TOTAL	100%

15. Operating and Maintenance Manuals

15.1. "As built" drawings are not required by the End-User

15.2. If the Contractor does not provide the Drawings and/or manuals by the dates stated above, or they do not receive the Procuring Entity's Representative's approval, the Procuring Entity's Representative may withhold the amount stated in the **SCC** from payments due to the Contractor.

Section V. Special Conditions of Contract

Special Conditions of Contract

GCC Clause	
1	***Note: as reflected in the Terms of Reference** **J. SOFTWARE MAINTENANCE SUPPORT SERVICES** 1. The customized application software development services for the NEA Integrated Dashboard Solution proposed shall include application software maintenance technical support, bug fixes, software updates, and enhancements to ensure the efficient and reliable operation of the software application for a period of 90 days following acceptance and/or live implementation of the software. The maintenance support services should cover all aspects necessary to maintain the software's functionality, performance, and security. 2. The service levels to be provided as part of the application software maintenance and support services should be specified, including response times, resolution times, and availability of support. The service levels should be appropriate to meet the criticality of the software and the needs of the NEA DDCC. A clear escalation process for addressing urgent or high-priority issues should also be provided. 3. Bug Fixes and Issue Resolution: Software issues reported by users under the application software maintenance and support services shall be promptly addressed and resolved. This includes identifying and fixing software bugs, errors, and malfunctions that affect the software's performance, stability, or functionality. The bidder should provide a systematic process for reporting and tracking issues, as well as a transparent communication channel for status updates and resolution progress. 4. Software Updates and Enhancements: Regular software updates and enhancements to improve the software's performance, security, and functionality shall be provided as part of the application software maintenance and support services. These updates should be compatible with NEA existing infrastructure and configurations. The frequency and methodology for delivering software updates and enhancements shall be clearly specified, ensuring minimal disruption to the NEA DDCC operations during the update process. 5.The bidder shall include proposed costing for a follow-on separate application software maintenance services contract option for the NEA Integrated Dashboard Solution beyond the 90-day period coverage provided as part of the cost for the DDCC. **K. ACCESSORIES** The bidder shall provide modular tables, chairs, lighting fixtures, and all other furniture accessories designed to integrate with the electronic

requirements operation of the NEA DDCC and all equipment included herein.

L. USER ACCEPTANCE TESTING & CRITERIA

1. The customized application software supplied shall undergo a user acceptance testing process prior to acceptance by NEA. The acceptance testing shall cover the following aspects of the customized application software program:

a) Functionality: The software program shall perform all functions and features as outlined in the agreed-upon requirements and specifications

b) Performance: The software program shall meet the specified performance metrics and response times under normal operating conditions.

c) Compatibility: The software program shall be compatible with the designated hardware and operating systems as defined in the bid documents.

d) Defects: The software program shall be free from defects that may cause errors, crashes, or other malfunctions during normal usage.

2. Documentation: The documentation provided with the software program shall be accurate, comprehensive, and up-to-date.

M. HARDWARE & SYSTEM SOFTWARE MAINTENANCE SUPPORT SERVICES

The bidder shall propose follow on maintenance support services to cover all installed hardware and system software beyond the warranty period. Maintenance includes both scheduled preventive maintenance and unscheduled troubleshooting and repair work. The bidder shall provide a comprehensive plan for a detailed schedule of maintenance of all hardware and software, which shall be included in the Maintenance and Support Plan.

N. TRANSFER OF TECHNOLOGY

The bidder shall conduct trainings for the management and staff of the procuring entity. Training areas should include, but shall not be limited to:

1. Technical Trainings for DDCC Project Manager/System Administrator/Engineer/ Developers and Supervisors (at least 10 personnel).

2. Installation, operation and trouble shooting and maintenance of system hardware, network, peripheral and ancillary devices and its related operating systems.

3. Operation, administration, maintenance and trouble-shooting of licensed software products and System.

4. Necessary training shall be provided by the bidder to all designated personnel who will operate the system. The training materials shall include training courses and presentations.

5. The bidder shall provide training manuals in hard copy and electronic (soft copy) in the English language.

6. The bidder shall submit a comprehensive training plan. The plan must list the proposed course content, timing and scheduling requirements, documentation, and other items required to ensure the proper and successful learning of NEA personnel on operations of the proposed system.

7. The bidder shall NEA a copy of the program source codes for the NEA Integrated Dashboard application software upon acceptance of the software by NEA.

O. CONFIDENTIALITY OF DATA

Documentation shall be provided on detailed procedures / techniques in identifying systems security risks and how such shall be handled.

The Database Record shall be held in strict confidence and shall not be reproduced, transcribed or disclosed without prior written approval from NEA.

P. ESTABLISHED LOCAL SUPPORT

The suppliers of the primary hardware and software products for the DDCC application software solution and hardware must have a branch office in the Philippines duly registered with the SEC, and should be actively operating for at least five (5) years.

S. LIQUIDATED DAMAGES

If the winning bidder, after having been given thirty (30) day written notice to comply, fails to substantially deliver the NEA DDCC in accordance with the requirements, specifications, terms and conditions provided for in this TOR or within the prescribed period, NEA shall deduct an amount equivalent to ONE-TENTH (1/10) of ONE PERCENT (1%) of the cost of the unperformed portion of every day of delay. "Unperformed portion" refers to any hardware, software or services that either remained undelivered or were delivered but did not meet or exceed required minimum requirements or specifications.

T. PROJECT MANAGEMENT CONTROL PLAN/METHODOLOGY

The project management methodology process to be applied for the NEA DDCC shall be specified, including the timing of project reviews and approvals. This shall include, but not limited to, the following:

1. Periodic review of project deliverables, progress, and status

2. Periodic review of the activities for managing the allocated requirements

3. Periodic review of the activities for project planning

4. Periodic review of the activities for project tracking and oversight

5. Periodic review of the Quality Assurance activities

6.　　Periodic review of the activities and work products of the project's Quality Assurance group by experts

The monitoring and control process, frequency of status reporting, and other tracking activities shall also be specified, including the organizational structure to be used on the project as well as the roles, responsibilities, and allocated efforts for each team member.

U. PROJECT SCHEDULE/ PAYMENT MILESTONES

The project shall be paid on the proposed schedule indicated below which shall not exceed the ceiling specified:

Sign-off on Detailed System Design, Project Implementation Plan and UAT Test Parameters	15%
Hardware and System Software Delivery and Installation of components	35%
Delivery of Solution Software and completion of User Acceptance Testing	20%
Completion of User Training	10%
Deployment and Implementation of the Dashboard Solution Software	10%
Retention	10%
TOTAL	100%

NEA DIGITAL DASHBOARD COMMAND CENTER (DDCC) PROJECT TIMELINE

Project Activity / Task	# Days
Detailed System Design & Project Plan	
NEA DDCC Detailed Design	5
NEA-IDS Detailed Specs Definition	10
NEA DDCC Project Mgt Plan	10
NEA DDCC Build	
Demolition of existing walls, & ceilings	5
Build of glass walls & partitions.	10
Electrical Works, Structured Cabling	15
Ventilation & Air Conditioning	10
Surveillance & Door Access Control Systems	5
Furniture & Fixtures Delivery & Installation	5
HW, SW, Network, Eqpt Delivery/Installation	20
Video Wall Delivery & Installation	10
Micro Data Center Delivery & Installation	10
HW, SW, Network, Eqpt Config & Testing	20
PROJEC DEPLOYMENT	
Server & Firewall Delivery	5
Server & Firewall Config & Testing	10
SCADA Interface Specs Definition	10
SCADA Interface Test Installation & Config	20
SCADA Interface Installation & Configuration	10
SCADA Interface Testing	10
NEA IDS DEVELOPMENT	
Reqirements Confirmation	10
Detailed Design	10
Programming & Systems Testing	20
Systems Integration (DC & EC) Testing	20
User Acceptance Testing	10
User Training	5
Installation and Deployment	5
Implementation Support	40

*Note: The above matrix is provided in Letter "C" of the Terms of Reference

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All equipment, hardware and off-the-shelf software products supplied under this invitation to bid shall be covered by a comprehensive warranty. The warranty shall protect the buyer against defects in material, workmanship, and performance of the supplied products for a specified period.

1.　　Warranty Period: The minimum warranty period required for the supplied products shall be three (3) years from the date of delivery or acceptance, unless otherwise specified for individual items. The warranty period should commence from the date of installation or use, if different from the delivery or acceptance date.

2.　　Scope of Warranty: The warranty for products shall cover all parts, components, and subsystems of the supplied products. It shall include repair or replacement of defective parts, as well as any necessary labor and transportation costs associated with warranty service.

	3. *The customized application software program supplied shall likewise be covered by a comprehensive warranty. The warranty shall ensure that the software program functions according to the agreed-upon specifications and is free from defects in design, programming, and performance upon delivery and installation up to acceptance of the customized application software program.*
11.1	Six (6) months duration of the Contract which will commence within seven (7) calendar days upon issuance of the Notice to Proceed (NTP). The timelines and milestones are depicted in the GANTT Chart below:
11.2	The amount to be withheld for late submission of an updated Program of Work shall be in line with the payment schedule prescribe by End-User.
13	The amount of the advance payment is *Three Million Pesos (₱3,000,000.00)*.
14	Materials and equipment delivered on the site but not completely put in place shall not be included for payment.
15.1	The date by which operating and maintenance manuals are required is *as prescribed by End-User in the timeline under letter C of the Terms of Reference.*
15.2	The amount to be withheld for failing to produce "as built" drawings and/or operating and maintenance manuals by the date required is *not required.* However, amount withheld for failing to produce operating and maintenance manual shall be in accordance with the payment schedule prescribe by the End-User under letter U of the Terms of Reference

GANTT Chart (NEA DIGITAL DASHBOARD COMMAND CENTER (DDCC) PROJECT TIMELINE):

Project Activity / Task	# Days
Detailed System Design & Project Plan	
NEA DDCC Detailed Design	5
NEA-IDS Detailed Specs Definition	10
NEA DDCC Project Mgt Plan	10
NEA DDCC Build	
Demolition of existing walls, & ceilings	5
Build of glass walls & partitions	10
Electrical Works, Structured Cabling	15
Ventilation & Air Conditioning	10
Surveillance & Door Access Control Systems	5
Furniture & Fixtures Delivery & Installation	5
HW, SW, Network, Eqpt Delivery/Installation	20
VideoWall Delivery & Installation	10
Micro Data Center Delivery & Installation	10
HW, SW, Network, Eqpt Config & Testing	20
PILOT DC DEPLOYMENT	
Server & Firewall Delivery	5
Server & Firewall Config & Testing	10
SCADA Interface Specs Definition	10
SCADA Interface Test Installation & Config	20
SCADA Interface Installation & Configuration	10
SCADA Interface Testing	10
NEA IDS DEVELOPMENT	
Requirements Confirmation	10
Detailed Design	10
Programming & Systems Testing	20
Systems Integration (DC & DC) Testing	20
User Acceptance Testing	10
User Training	5
Installation and Deployment	5
Implementation Support	40

Section VI. Specifications

Item No.	Technical Specification	Minimum Requirement	QTY
1.	COMMAND CENTER | Micro Data Center		1 Lot
1.1.	Cooling Specification		
1.1.1.	Cooling capacity	900 W~3500W	
1.1.2.	Noise Level	Indoor 68dBA/Outdoor 55dBA	
1.1.3.	Net Weight (Base unit)	410kgs (w/ packing) & 360kgs (w/o packing)	
1.1.4.	Rack Mount Cooling Unit	5U	
1.1.5.	System Capacity	3 kW @ 45°C Ambient	
1.1.6.	Refrigerant	R410A	
1.1.7.	Outdoor Unit for Air conditioner	Split	
1.1.8.	Cooling Unit supported by UPS	Yes (by field UPS)	
1.1.9.	Emergency Fan	Two, one at bottom front and one at top rear	
1.2.	COMMAND CENTER | Micro Data Center - Monitoring		
1.2.1.	Monitored Subsystems.	UPS, Cooling, NetBotz, Energy Meter	
1.2.2.	Temperature Humidity Sensor		
1.2.3.	Temperature Sensor		
1.2.4.	Water Leak Detection	Spot fluid detection	
1.3.	COMMAND CENTER | Micro Data Center - Power		
1.3.1.	System IT load capacity	3 kW	

1.3.2.	System Input Requirement	50 A, Single Phase 220/230/240 V	
1.3.3.	System Frequency	Compatible with 50 Hz and 60 Hz	
1.3.4.	Input/output power panel	Rack Mounted, 0U	
1.3.5.	Rack Power Distribution Units (PDU)	Compatible with all 32A single phase rPDU	
1.4.	**COMMAND CENTER | Micro Data Center – Rack**		
1.4.1.	Cabinet Dimension (H×W×D)	2180×800×1200 (mm) Includes top of emergency fan cooling unit	
1.4.2.	Usable RU space	34 RU	
1.4.3.	Built in cable manager Front	Expandable high density half height	
1.4.4.	Built in cable manager Rear	Full height single line	
1.4.5.	Area (incl. service space)	9.5 m²	
1.4.6.	Color	Black	
1.4.7.	HMI Display Panel	7" Touch Panel LCD	
1.4.8.	Display Languages	English	
1.4.9.	Enclosure Lighting	Front & Rear LED light with door switch	
1.4.10	System Luminance	150 lux/ 1M	
1.5.	**COMMAND CENTER | Micro Data Center - Security**		
1.5.1.	Door Status Sensor		2 units
1.5.2.	Door Lock System	Keyed Swing Handle standard / optional HID/MiFARE card access lock	

1.6.	COMMAND CENTER | Micro Data Center - Standards		
1.6.1.	Safety Standards	IEC60950-1 Ed 2.2 2013-05, IEC62368-1 2018: Information technology equipment – Safety	
1.6.2.	EMC Standards	EN 55032, CISPR 32 EN 55024, CISPR 24 EN 61000-3-11 EN 61000-3-12	
2.	COMMAND CENTER | Automatic Transfer Switch		2 Units
2.1.	Colour	Black	
2.2.	Height	4.4 cm	
2.3.	Width	43.2 cm	
2.4.	Depth	23.6 cm	
2.5.	Product weight	3.74 kg	
2.6.	Mounting location	Front	
2.7.	Mounting preference	No preference	
2.8.	Mounting mode	Rack-mounted	
2.9.	Mounting position	Horizontal	
2.10.	Network frequency	50/60 Hz	
2.11.	[In] rated current	20 A	
2.12.	Permissible voltage	207...253 V	
2.13.	Max line current	20 A	
2.14.	Input current limits	20 A	
2.15.	Load capacity	3700 VA	
2.16.	Number of power socket outlets	8 IEC 60320 C13 10 A 2P + E 1 IEC 60320 C19 16 A 2P + E	
2.17.	Protection type	Without circuit breaker	

2.18.	Power cable length	2.44 m	
2.19.	Product certifications	cUL listed, CE, UL listed	
2.20.	Standards	EN 55022 class A, FCC part 15 class A	
2.21.	Ambient air temperature for operation	-5...45 °C	
2.22.	Relative humidity	5...95 %	
2.23.	Operating altitude	0...10000 ft	
2.24.	Ambient air temperature for storage	-25...65 °C	
2.25.	Storage Relative Humidity	5...95 %	
2.26.	Storage altitude	0...15240 m	
3.	**COMMAND CENTER | Rack Fire Suppression –**		**1 Lot**
3.1.	**Extinguishing Generator**		
3.1.1.	Fire Suppression Technology	Condensed Aerosol	
3.1.2.	Method of Fire Suppression	Chemical Reaction inhibiting flame free radicals on a molecular level from interacting with Oxygen without reducing oxygen levels	
3.1.3.	Activation Method	Electrical, Thermal	
3.1.4.	Weight (Gross)	1,370g (excluding bracket)	
3.1.5.	Mass of FPC compound	100 g	
3.1.6.	Operational Discharge Time	5 - 10 seconds	
3.1.7.	Dimensions	84mm x 155 mm	
3.1.8.	Fire Class	EN 2: A, B, C, F - NFPA 10: A, B, C	
3.1.9.	Certifications	UL, NFPA, ISO	

3.2.	**Protection Panel**		
3.2.1.	Detection Mode	Linear Heat Detection or automatic smoke detectors	
3.2.2.	No. of Outputs	4	
3.2.3.	Overall size	188mm x 132mm x 47mm	
3.2.4.	Construction	1/2mm sheet steel	
3.2.5.	Finish	Epoxy powder coat	
3.2.6.	Colour	Light grey textured	
3.2.7.	Operating voltage	19 to 30 Volts DC	
3.2.8.	Standby current	18 milliamps	
3.2.9.	Maximum current	3 Amps	
3.2.10	Fault monitoring	Detection and actuator circuits (open circuit monitored only)	
3.2.11	Cable entries	20mm knockouts	
3.2.12	Terminal capacity	2.52mm maximum	
3.3.	**Heat Detection Cable**		
3.3.1.	External Diameter	0.138 inch (3.5 mm)	
3.3.2.	Dielectric Withstand	500VDC	
3.3.3.	Conductors	Tin plated copper coated steel	
3.3.4.	Electrical Rating	30VAC (42.4VDC) 10 A	
3.3.5.	Conductor Resistance	Min: 88.1 ohms per 1000m Max: 92.1 ohms max per 1000m	
3.3.6.	Conductor Extrusion	Temperature Sensitive Polymer	
3.3.7.	External Sheath	Color coded polymer / Lead & Cadmium free / UV resistant	
3.3.8.	Tensile Strength	1,700 min (N/mm2)	

3.3.9.	Capacitance	88pF/m	
3.3.10	Inductance	1060nH/m	
3.3.11	Impedance	110 ohms	
3.3.12	Min. Bend Radius	4.0 inch (100 mm)	
4.	**COMMAND CENTER | Video Wall Controller**		**1 Unit**
4.1.	Functional Requirement	• Shall serve as the primary visual display of the Command Center. • Must fit the existing design of the Monitoring Room of the Command Center; • The workstations are the primary video source; • Other video source as a source of video input (cable tv, media player etc.) • Mirroring Functionality for the television at the war room; • Appropriate software for integrating/splitting the images	
4.2.	System structure	Pure hardware FPGA architecture	
4.3.	Start up	<15s	
4.4.	Operating system	No CPU and operating system	
4.5.	Board type	Pure hardware pluggable, hot-swappable structure	
4.6.	Input type	VGA,DVI,HDMI,DP,CVBS,SDI,HDBaseT,IP-Video,Fiber	
4.7.	Input channel	1080P up to 320 channel, 4K up to 160 channel	
4.8.	Output type	VGA, DVI, HDMI, CVBS, SDI,HDBaseT,Fiber	
4.9.	Output channel	1080P up to 320 channels, 4K up to 160 channels	
4.10.	Display mode	Roaming, overlay, zoom in/out, multi-windowing, scene switch, PIP, full screen and combination screen	
4.11.	Input resolution	Single channel 4K: dual link DVI/HDMI/DP	

4.12.	Scene/Signal switching time	Millisecond-level switching	
4.13.	Number of signal copy	More than the number of output ports	
4.14.	Max input/ output resolution	Input : 3840*2160@60Hz Output : 3840*2160@30Hz	
4.15.	Single-screen window	At least 8 windows on each two screens	
4.16.	Hot-swappable	Support	
4.17.	Power supply configuration	N+1 redundant power supply structure	
4.18.	Signal preview	Support	
4.19.	Control structure	Software /Hardware	
4.20.	Maximum scenes	255	
4.21.	Control method	RS232/Network/Touch screen/Keypad and compatible with third party control system	
4.22.	Management mode	B/S, C/S, Mobile	
4.23.	Matrix control	Supports digital /analog matrix linkage control	
4.24.	Safety	Hardware structure, no virus interference	
4.25.	MTBF	50000h	
4.26.	Continuity	365 days, 7x24 hours operation	
4.27.	Operating temperature	- 15~60°C	
4.28.	Storage temperature	-300 ~750 C	
4.29.	Operating humidity	10 to 90% without condensation	
4.30.	Storage humidity	5 ~95% without condensation	
5.		**COMMAND CENTER	Video Wall Monitor**	**8 Units**

5.1.	Screen Size	55"	
5.2.	Panel Technology	IPS	
5.3.	Back Light Type	Direct	
5.4.	Aspect Ratio	16:09	
5.5.	Native Resolution	1,920 x 1,080 (FHD)	
5.6.	Refresh Rate	60Hz	
5.7.	Brightness(Typ., nit)	500	
5.8.	Contrast Ratio	1,000:1	
5.9.	Dynamic CR	500,000:1	
5.10.	Color Gamut	NTSC 72%	
5.11.	Viewing Angle(H x V)	178 x 178	
5.12.	Color Depth	10bit, 1.07Billion colors	
5.13.	Response Time	8 ms (G to G)	
5.14.	Surface Treatment(Haze)	28%	
5.15.	Life time	60,000Hrs (Typ.) / 50,000Hrs (Min.)	
5.16.	Operation Hours (Hours/Day)	24/7	
5.17.	Portrait / Landscape	Yes / Yes	
5.18.	Input	HDMI 2 (HDCP 2.2), DP (HDCP 2.2), DVI-D (HDCP 1.4), Audio In, RS-232C In, RJ45 (LAN), IR In, USB 2.0 Type A	
5.19.	Output	DP Out (Input : HDMI / DVI / DP), Audio Out, RS-232C Out, RJ45 (LAN)	
5.20.	Bezel Color	Black	
5.21.	Bezel Width	B2B : 1.74mm (Panel Bezel to Panel Bezel), 1.3mm(T/L), 0.44mm(B/R)	

		A2A : 2.49mm (Active area to Active area), 1.75mm(T/L), 0.74mm(B/R)	
5.22.	Weight(Head)	18.8 Kg	
5.23.	Packed Weight	31.0 Kg (when individual pallet applied)	
5.24.	Monitor Dimension(W x H x D)	1,212.2 × 683.0 × 86.9 mm	
5.25.	Carton Dimensions(W x H x D) (Box outer size)	1,353 x 855 x 263 mm	
5.26.	Handle	Yes	
5.27.	VESA™ Standard Mount Interface	600 x 400	
5.28.	Internal Memory	8 GB	
5.29.	Sensor	(Temperature Sensor, BLU Sensor, Acceleration(Gyro) Sensor), Local Key Operation	
5.30.	Software Compatibility	webOS 4.1, Embedded CMS (Local Contents Scheduling, Group Manager), USB Plug & Play, Fail Over, Background Image (No Signal Image), Sync Mode (RS-232C Sync, Local Network Sync), Video Tag (4), Play via URL, Rotation (Screen Rotation, External Input Rotation), Gapless Playback, Tile Mode Setting (Max. 15 × 15), Setting Data Cloning, SNMP, ISM Method, Auto Set ID, Status Mailing, Control Manager, 3rd Party Compatibility (Crestron Connected®2)), Power (Smart Energy Saving, PM Mode, Wake on LAN, Network Ready), HDMI-CEC3), SI Server Setting, webRTC, Pro:Idiom, W/B Setting by Grey Scale, Scan Inversion	
5.31.	Operation Temperature	0 °C to 40 °C	
5.32.	Operation Humidity	10% to 80%	
5.33.	Power Supply	AC 100-240V~, 50/60Hz	
5.34.	Power Type	Built-In Power	

5.35.	Typ	200 W	
5.36.	Max.	250 W	
5.37.	BTU (British Thermal Unit)	682 BTU/Hr(Typ.), 853 BTU/Hr(Max)	
5.38.	Smart Enegy Saving	105 W	
5.39.	DPM	0.5W	
5.40.	Power off	0.5 W	
5.41.	Safety	CB / NRTL	
5.42.	EMC	FCC Class "B" / CE / KC	
5.43.	ErP	Yes (Energy Star 8.0 (EU Only))	
5.44.	OSD	English, French, German, Spanish, Italian, Korean , Chinese(Simplified), Chinese(Original), Portuguese(Brazil), Swedish, Finnish, Norwegian, Danish, Japanese, Russian, Portugues(Europe), Dutch, Czech, Greek, Turkish, Arabic	
5.45.	ACCESSORY	Remote Controller(include battery 2ea), Power Cord, RS232C cable, Lan cable, DP cable, IR Receiver, Guide Bracket, Screws, Manual	
5.46.	IP Rating	IP5X tested	
5.47.	Videowall Bracket	• Push in Pop-out slim wall mount bracket • 6 points micro adjustment function • Material :2mm SPCC • • With safe lock system	
6.	**COMMAND CENTER | Workstation**		**5 Units**
6.1.	Functional Description	• Workstations shall serve as the primary source of the video wall. • Workstation shall be capable of running the multiple dashboard solutions. • Workstations shall be capable of display mirroring • One workstation shall be allocated for videowall admin	
6.2.	**CPU Specifications**		**5 Units**
6.2.1.	Form Factor	Tower	
6.2.2.	Processor	Core i7-12700 12C 2.10G 65W	

6.2.3.	GPU	T1000 4GB 4mDP GFX	
6.2.4.	RAM	32GB (2x16GB) DDR5 4800 UDIMM NECC Mem	
6.2.5.	Operating System	Win 11 Pro 64 DG106	
6.2.6.	Adapter	Mini DP-to-HDMI	
6.2.7.	Keyboard	USB	
6.2.8.	Mouse	USB	
6.2.9.	Storage	1TB PCIe 2280 TLC M.2 SSD	
6.2.10	Warranty	3/3/3 Warranty	
6.3.	**Monitor Specifications**		**5 Units**
6.3.1.	Display size	23.8"	
6.3.2.	Display type	IPS	
6.3.3.	Panel active area(inches)	20.75 x 11.67 in	
6.3.4.	Panel active area(cms)	52.7 x 29.65 cm	
6.3.5.	Brightness	300 nits	
6.3.6.	Pixel Pitch	0.275 mm	
6.3.7.	Input connector	1 VGA; 1 HDMI 1.4 (with HDCP support)	
7.	**Desktop UPS**		**5 Units**
7.1.	Functional Description	• UPS shall provide power to the workstations in the event of power power for protection against power surges of ICT equipment.	

7.2.	Technical Specification	• Branded and Brand New
		• At least 650VA voltage rating
		• Transfer time: Typical 2--6ms, 1 Oms max
		• Input
		  o Voltage range: 162-290VAC, Single phase
		  o Frequency range: 50Hz/60Hz automatic identification
		• Output
		  o Voltage tolerance (Batt. Mode): Simulated sine wave at nominal voltage ±10%	

		○ Frequency range (Batt. Mode): 50Hz/60Hz automatic identification - System Features ○ Indicators: ■ AC Mode: LED lighting ■ Battery Mode: LED lighting ■ Fault Solid: LED lighting ○ Protection: ■ Discharge ■ Overload ■ Overcharge protection ■ Fuse Protection: YES ○ At least two (2) years warranty on parts and service ○ Brand should be at least twenty (20) years on the market	
8.	**Workstation Chairs**		**4 Units**
8.1.	Specification	- High-back Mesh Office Chair 360° swivel - Chrome plated star-base	
9.	**COMMAND CENTER | Core Switch**		**2 Units**
9.1.	No. of Ports	Switch shall have 48 nos. full PoE+ (12 mGig ports up to 10G, 36 ports up to 1G) and additional 4 nos. 1/10G SFP+ uplinks ports.	
9.2.	Hot Swap Power Supply	Switch should support internal hot-swappable redundant power supply and fans from day 1. Switch should support full 48 ports of 30W, 1440W PoE power budget in total.	
9.3.	Switch throughput	Switch shall have minimum 392 Gbps of switching fabric and 291.66 Mpps of forwarding rate.	
9.4.	Stacking Capability	Switch should have dedicated slot for modular stacking, in addition to asked uplink ports. Should support for minimum 80 Gbps of stacking throughput with 8 switches in single stack.	
9.5.	POE Support	Switch must support powering connected PoE devices without waiting for IOS to boot up.	
9.6.	POE Support while booting	Switch must support uninterrupted power to connected PoE devices even when the switch is reloading and booting up.	
9.7.	MACSec-128 Support	Switch must support MACSec-128 on both access and uplink ports.	

9.8.	RFID Tagging	Switch must have embedded RFID tag which facilitates easy asset/inventory management using commercial RFID readers	
9.9.	System OS Signature verification on boot	During system boots, the system's software signatures should be checked for integrity. System should be capable to understand that system OS are authentic and unmodified, it should have cryptographically signed images to provide assurance that the firmware & BIOS are authentic. Public document must be provided.	
9.10.	Deep Packet inspection on wired ports	Switch must support configuration of application aware classification using deep packet inspection techniques on wired ports	
9.11.	Application visibility support	Switch must support application visibility for custom applications	
9.12.	Application flow analysis and export	Switch must support Full Application flow analysis and export	
9.13.	Compliance to Safety requirements of Information Technology Equipment	Switch shall conform to UL 60950-1/62368-1, CAN/CSA-C22.2 No. 60950-1/62368-1, EN 60950-1/62368-1, IEC 60950-1/62368-1, AS/NZS 60950.1, AS/NZS 62368.1 for Safety requirements of Information Technology Equipment.	
9.14.	Compliance to Standards for EMC (Electro Magnetic Compatibility) requirements	Switch shall conform to 47 CFR Part 15, CISPR 32 Class A, CNS 13438, EN 55032 Class A, EN61000-3-2, EN61000-3-3, ICES-003 Class A, KN 32, TCVN 7189 Class A, V-3 Class A, CISPR 35, EN 55035, KN 35, and TCVN 7317 Standards for EMC (Electro Magnetic Compatibility) requirements.	
9.15.	Listed as Gartner Leader Quadrant for Wired and Wireless	OEM should be listed in Gartner Leader Quadrant for Wired and Wireless LAN Infrastructure from last 3 years before releasing this ITB.	
10.	**COMMAND CENTER	Wireless LAN Controller**		**2 Units**
10.1.	Deployment flexibility feature	The Controller shall support deployment flexibility without compromising any features	
10.2.	Supported access points per single VM instance	The controller shall support 3K access points or more per single VM instance; 32K clients per single VM instance.	

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10.3.	Controller HW resource requirement	The controller shall have optimal VM HW resource requirement and shall be fully supported with 2 vCPU, 8GB Memory 8GB Disk space	
10.4.	Hot software patching for both controller and AP	The controller shall support hot WLC software patching and hot AP software patching for fixing bugs	
10.5.	Staggered AP upgrading	The Controller shall support APs to be upgraded in a staggered manner, while still being connected to the same controller.	
10.6.	Sync of Redundant controller	The redundant Controller shall sync Access Point and Client Status, including DHCP IP lease status	
10.7.	Support for PSK keys	The controller shall support multiple PSK keys	
10.8.	Encryption support for control plane	The system shall support control plane encryption on both IPv4 and IPv6	
10.9.	Detection and containment of Rogue access points	The controller shall be able to detect employee device connection to Rogue Access Point and contain it automatically	
10.10.	Support of new application signatures	The controller shall support new application signatures without upgrading controller software	
10.11.	System OS Signature verification on boot	During system boots, the system's software signatures should be checked for integrity. System should capable to understand that system OS are authentic and unmodified, it should have cryptographically signed images to provide assurance that the firmware & BIOS are authentic. Public document must be provided.	
10.12.	Compliance to Safety requirements of Information Technology Equipment	Controller shall conform to UL/CSA 60950-1, IEC/EN 60950-1, AS/NZS 60950.1, and CAN/CSA-C22.2 No. 60950-1 for Safety requirements of Information Technology Equipment.	
10.13.	Compliance to Standards for EMC (Electro Magnetic Compatibility) requirements	Controller shall conform to FCC 47CFR15, AS/NZS CISPR 22, CISPR 22, EN55022/EN55032 (EMI-1), ICES-003, VCCI, KN 32 (EMI-2), CNS-13438, EN61000-3-2, EN61000-3-3, IEC/EN61000-4-2, IEC/EN61000-4-3, IEC/EN61000-4-4, IEC/EN61000-4-5, IEC/EN61000-4-6, IEC/EN61000-4-8, IEC/EN61000-4-11, K35,	

		EN 300 386, EN55022, EN55024/CISPR 24, EN50082-1/EN61000-6-1 Standards for EMC (Electro Magnetic Compatibility) requirements.	
10.14.	Uniform OS to core, distribution, access switches	Wireless LAN Controller shall have the same OS as the campus core, distribution, and access switches.	
10.15.	Listed as Gartner Leader Quadrant for Wired and Wireless	OEM should be listed in Gartner Leader Quadrant for Wired and Wireless LAN Infrastructure from last 3 years before releasing this ITB.	
11.	**COMMAND CENTER | Wireless Access Point**		**2 units**
11.1.	WIFI6 throughput	Access Point shall support WiFi6 with up to 5.38 Gbps throughput	
11.2.	Support for MU-MIMO	Access Point shall support 4x4 MU-MIMO with four spatial streams on both 2.4 GHz and 5 GHz radio interfaces	
11.3.	5-Ghz serving mode	Access Point shall support dual 5-GHz client serving mode	
11.4.	DRAM	Access Point shall contain 2GB or higher-sized DRAM for capacity and scalability	
11.5.	POE powered	Access Point shall be able to power up using PoE (.af)	
11.6.	Support for Application visibility	Access Point shall support application visibility and control	
11.7.	Encrypted traffic visibility	Access Point shall support encrypted traffic visibility	
11.8.	Support for BLE5 radio	Access Point shall support integrated BLE5 radio	
11.9.	Support for USB 2.0	Access Point shall support USB 2.0 @ 4.5W	
11.10.	Mounting bracket inclusion	Access Point shall ship with metal-based mounting bracket for durability and reliability.	
11.11.	IoT container hosting	Access Point shall be able to offer IoT container hosting	
11.12.	Support for Offchannel RRM	Access Point shall support Offchannel RRM using dedicated radio without compromising client serving radios	

11.13.	Able to leverage Apple and Samsung analytics	Access Point shall be able to leverage partnerships for Apple and Samsung Analytics	
11.14.	Uniform OS to core, distribution, access switches	Access Point shall have the same OS as the campus core, distribution, and access switches.	
11.15.	Listed as Gartner Leader Quadrant for Wired and Wireless	OEM should be listed in Gartner Leader Quadrant for Wired and Wireless LAN Infrastructure from last 3 years before releasing this ITB.	
12.	**COMMAND CENTER | Perimeter Firewall**		**1 unit**
12.1.	Appliance based services	The appliance-based security platform should provide Firewall, Application Visibility and Control, Advance Malware Protection and IPS functionality in a single appliance from day one.	
12.2.	Support for Active-Passive mode	The proposed solution should be capable to do Active-Passive mode.	
12.3.	No. of Ports	The appliance should have at least 8 * 1G RJ45 Gigabit ports	
12.4.	Support for Open Architecture	Proposed Firewall should not be proprietary ASIC based in nature & should be open architecture based on multi-core cpus to protect & scale against dynamic latest security threats.	
12.5.	Required throughput	Firewall should support 880 Mps of NGFW (FW, AVC and IPS) throughput.	
12.6.	Concurrent sessions supported	Firewall should support at least 100,000 concurrent sessions with application visibility turned on	
12.7.	New connections supported	Firewall should support at least 6,000 new connections per second with application visibility turned on	
12.8.	Support for Access-rules for IPv4, IP v6	Firewall should support creating access-rules with IPv4 & IPv6 objects, user/groups, application, geolocation, url, zones, vlan, etc.	
12.9.	Support for multiple Nat functionalities	Firewall should support Nat66 (IPv6-to-IPv6), Nat 64 (IPv6-to-IPv4) & Nat46 (IPv4-to-IPv6) functionality	

12.10.	Trending capability for traffic and performance	Should have the capability of passively gathering information about virtual machine traffic, network hosts and their activities, such as operating system, services, open ports, client applications, and vulnerabilities, to assist with multiple activities, such as intrusion event data correlation, elimination of false positives, and policy compliance.	
12.11.	IDS/IPS tuning	Should be capable of dynamically tuning IDS/IPS sensors (e.g., selecting rules, configuring policies, updating policies, etc.) with minimal human intervention.	
12.12.	Automatic inspection for non-standard ports	Should be capable of automatically providing the appropriate inspections and protections for traffic sent over non-standard communications ports.	
12.13.	Support for end point quarantine integration	Should support the capability to quarantine end point by integrating with other security solution like Network Admission Control	
12.14.	Support for NBA Capability	Solution should support full-featured NBA capability to detect threats emerging from inside the network. This includes the ability to establish "normal" traffic baselines through flow analysis techniques (e.g., NetFlow) and the ability to detect deviations from normal baselines.	
12.15.	IP reputation feed provision	The solution must provide IP reputation feed that comprised of several regularly updated collections of poor reputation of IP addresses determined by the proposed security vendor	
12.16.	DNP3 and IEC60873 detectors	The solution should have application detectors for DNP3 and IEC 60870.	
12.17.	Preprocessor for Modbus and DNP3	The solution should provide preprocessors for the Modbus and Distributed Network Protocol (DNP3) SCADA protocols that you can configure.	
12.18.	Anomaly detection, decoding for DNP3 traffic	The DNP3 preprocessor should be able to detect anomalies in DNP3 traffic and decode the DNP3 protocol for processing by the rules engine. It should be able to validate the checksums contained in DNP3 link layer frames.	
12.19.	Support for SHA-256 malware detection	Should support the capability of providing network-based detection of malware by checking the disposition of unknown files using SHA-256 file-hash or signature as they	

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		transit the network and capability to do dynamic analysis	
12.20.	Web-based interface	The management platform must be accessible via a web-based interface and ideally with no need for additional client software	
12.21.	Branch set management	The management platform must be able to manage the branch set of Firewalls as well.	
13.	**COMMAND CENTER | Consolidation Server**		**1 unit**
13.1.	Processor	single processor 4th Gen Xeon Scalable CPU with at least 2.9Ghz, 8C, 22.5MB Cache, DDR5-4800	
13.2.	Memory	16 GB RAM with support up to at least 4TB	
13.3.	Storage	3x 2.4TB 12G SAS 10K RPM	
13.4.	Disk Controller	RAID 0, 1, 10, 5 or 50	
13.5.	Network ports	dual port 10Gb RJ45	
13.6.	Power Supply	Must have Dual Redundant 1200W Titanium Power Supply	
13.7.	Hypervisor	Virtualization Software	
13.8.	Windows Server 2022	Standard CAL 16 Core License Pack + 10 CALS (For EC SCADA Interface Output)	
13.9.	Microsoft SQL Server	Standard Edition - 1 server (For EC SCADA Interface Output)	
13.10.	Microsoft SQL Server CAL	Standard Edition - 10 Client Access License (For EC SCADA Interface Output)	
13.11.	Management	Must include a SAAS-based infrastructure management solution that supports 3rd party x 86 servers	
13.12.	Warranty	Onsite and Remote services (60 months)	
14.	**EC Side | Access Switch**		**1 unit**
14.1.	No. of Ports	Switch shall have 24 nos. 10/100/1000M PoE+ ports, 1 and additional 4 nos. 1/10G SFP+ uplinks ports.	

14.2.	Hot Swap Power Supply	Switch should support internal hot-swappable redundant power supply and fans from day 1. Switch should support full 24 ports of 30W, 740W PoE power budget in total.	
14.3.	Switch throughput	Switch shall have minimum 128 Gbps of switching fabric and 95.23 Mpps of forwarding rate.	
14.4.	Stacking Capability	Switch should have dedicated slot for modular stacking, in addition to asked uplink ports. Should support for minimum 80 Gbps of stacking throughput with 8 switches in single stack.	
14.5.	POE Support	Switch must support powering connected PoE devices without waiting for IOS to boot up.	
14.6.	POE Support while booting	Switch must support uninterrupted power to connected PoE devices even when the switch is reloading and booting up.	
14.7.	MACSec-128 Support	Switch must support MACSec-128 on both access and uplink ports.	
14.8.	RFID Tagging	Switch must have embedded RFID tag which facilitates easy asset/inventory management using commercial RFID readers	
14.9.	System OS Signature verification on boot	During system boots, the system's software signatures should be checked for integrity. System should capable to understand that system OS are authentic and unmodified, it should have cryptographically signed images to provide assurance that the firmware & BIOS are authentic. Public document must be provided.	
14.10.	Deep Packet inspection on wired ports	Switch must support configuration of application aware classification using deep packet inspection techniques on wired ports	
14.11.	Application visibility support	Switch must support application visibility for custom applications	
14.12.	Application flow analysis and export	Switch must support Full Application flow analysis and export	
14.13.	Compliance to Safety requirements of Information	Switch shall conform to UL 60950-1/62368-1, CAN/CSA-C22.2 No. 60950-1/62368-1, EN 60950-1/62368-1, IEC 60950-1/62368-1, AS/NZS 60950.1, AS/NZS 62368.1 for	

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	Technology Equipment	Safety requirements of Information Technology Equipment.	
14.14.	Compliance to Standards for EMC (Electro Magnetic Compatibility) requirements	Switch shall conform to 47 CFR Part 15, CISPR 32 Class A, CNS 13438, EN 55032 Class A, EN61000-3-2, EN61000-3-3, ICES-003 Class A, KN 32, TCVN 7189 Class A, V-3 Class A, CISPR 35, EN 55035, KN 35, and TCVN 7317 Standards for EMC (Electro Magnetic Compatibility) requirements.	
14.15.	Listed as Gartner Leader Quadrant for Wired and Wireless	OEM should be listed in Gartner Leader Quadrant for Wired and Wireless LAN Infrastructure from last 3 years before releasing this ITB.	
15.	**EC Side | Perimeter Firewall**		**1 unit**
15.1.	Appliance based services	The appliance-based security platform should provide Firewall, Application Visibility and Control, Advance Malware Protection and IPS functionality in a single appliance from day one.	
15.2.	Support for Active-Passive mode	The proposed solution should be capable to do Active-Passive mode.	
15.3.	No. of Ports	The appliance should have at least 8 * 1G RJ45 Gigabit ports	
15.4.	Support for Open Architecture	Proposed Firewall should not be proprietary ASIC based in nature & should be open architecture based on multi-core CPUs to protect & scale against dynamic latest security threats.	
15.5.	Required throughput	Firewall should support 880 Mps of NGFW (FW, AVC and IPS) throughput.	
15.6.	Concurrent sessions supported	Firewall should support at least 100,000 concurrent sessions with application visibility turned on	
15.7.	New connections supported	Firewall should support at least 6,000 new connections per second with application visibility turned on	
15.8.	Support for Access-rules for IPv4, IP v6	Firewall should support creating access-rules with IPv4 & IPv6 objects, user/groups, application, geolocation, url, zones, vlan, etc	
15.9.	Support for multiple Nat functionalities	Firewall should support Nat66 (IPv6-to-IPv6), Nat 64 (IPv6-to-IPv4) & Nat46 (IPv4-to-IPv6) functionality	

15.10.	DNP3 and Trending capability for traffic and performance [illegible] LINP3 [illegible]	Should have the capability of passively gathering information about virtual machine traffic, network hosts and their activities, such as operating system, services, open ports, client applications, and vulnerabilities; to assist with multiple activities, such as intrusion event data correlation, elimination of false positives, and policy compliance. [illegible]	
15.11.	IDS/IPS tuning detection, decoding for DNP3 traffic	Should be capable of dynamically tuning IDS/IPS sensors (e.g. selecting rules, configuring policies, updating policies, etc.) with minimal human intervention. [illegible] checksums [illegible] in DNP3 [illegible] layer	
15.12.	Automatic inspection for non-standard ports	Should be capable of automatically providing the appropriate inspections and protections for traffic sent over non-standard communications ports.	
15.13.	Support for end point quarantine integration	Should support the capability to quarantine end point by integrating with other security solution like Network Admission Control	
15.14.	Support for NBA Capability	Solution should support full-featured NBA capability to detect threats emerging from inside the network. This includes the ability to establish "normal" traffic baselines through flow analysis techniques (e.g., NetFlow) and the ability to detect deviations from normal baselines.	
15.15.	IP reputation feed provision	The solution must provide IP reputation feed that comprised of several regularly updated collections of poor reputation of IP addresses determined by the proposed security vendor	
15.16.	DNP3 and IEC60873 detectors	The solution should have application detectors for DNP3 and IEC 60870.	
15.17.	Preprocessor for Modbus and DNP3	The solution should provide preprocessors for the Modbus and Distributed Network Protocol (DNP3) SCADA protocols that you can configure.	
15.18.	Anomaly detection, decoding for DNP3 traffic	The DNP3 preprocessor should be able to detect anomalies in DNP3 traffic and decode the DNP3 protocol for processing by the rules engine. It should be able to validate the checksums contained in DNP3 link layer frames.	
15.19.	Support for SHA-256 malware detection	Should support the capability of providing network-based detection of malware by checking the disposition of unknown files using SHA-256 file-hash or signature as they	

		transit the network and capability to do dynamic analysis	
15.20.	Web-based interface	The management platform must be accessible via a web-based interface and ideally with no need for additional client software	
15.21.	Branch set management	The management platform must be able to manage the branch set of Firewalls as well.	
16.	**EC Side | Branch Server**		**1 unit**
16.1.	Processor	single processor 4th Gen Xeon Scalable CPU with at least 2.9Ghz, 8C, 22.5MB Cache, DDR5-4800	
16.2.	Memory	16 GB RAM with support up to at least 4TB	
16.3.	Storage	3x 2.4TB 12G SAS 10K RPM	
16.4.	Disk Controller	RAID 0, 1, 10, 5 or 50	
16.5.	Network ports	dual port 10Gb RJ45	
16.6.	Power Supply	Must have Dual Redundant 1200W Titanium Power Supply	
16.7.	Hypervisor	Virtualization Software	
16.8.	Windows Server 2022	Standard CAL 16 Core License Pack + 10 CALS (For EC SCADA Interface Output)	
16.9.	Microsoft SQL Server	Standard Edition - 1 server. (For EC SCADA Interface Output)	
16.10.	Microsoft SQL Server - CAL	Standard Edition - 5 Client Access License (For EC SCADA Interface Output)	
16.11.	Management	Must include a SAAS based infrastructure management solution that supports 3rd party x86 servers	
16.12.	Warranty	Onsite and Remote services (60 months)	
17.	**Civil Works**		**1 lot**
17.1.	Scope of Work	• Mobilization, demobilization and power interruption. • Supply and installation/laying of electrical roughing-ins; • Supply and installation of conduit, pipes and cable trays;	

		• Supply and installation of electrical lightings, fixtures and accessories; • Supply and installation of electrical switches and its accessories; • Supply and installation of receptacle outlets and its accessories; • Supply and installation of enclosures, panel boards and circuit breakers; • Supply and installation of electrical wires/cables, connectors, insulators and groundings; • Supply and installation of outside electrical system including distribution transformer, wires/cables, concrete pole and accessories (if needed); • Supply and installation of air conditioner unit, cables/wires, groundings, rough-ins, insulator, connectors, fittings, Nema 3R Enclosures and accessories;	
17.2.	Installation Details	• War room and Command Center shall be separated by a 12mm thick tempered glass wall and swing/sliding glass door of double sided smart-tint tempered glass for quick viewing with complete fittings and accessories • Ceiling shall be metal framed and clad with 9mm thick gypsum board panel and finished with flat latex ceiling paint. • Existing windows shall be enclosed and clad with padded wall fabric to reduce intrusion of noise from outside. • All cables and electrical pipes shall be on falseworks or embedded on walls, ceilings and flooring. • The ceiling frame will be 0.6mm (6mm x 19mm x 50mm) for the double furring, 0.4mm (x 25.4mm x 25.4mm) for the wall angle and 0.8mm (x11 mmx37mm) for the carrying channel • The drywall frame will be 0.6mm (x33mmx75mm) for the metal track and 0.6mm (x7mmx33mmx7 4mm) for the metal stud • All civil works for improvement, modification and restoration shall cover the basic components of command center which includes the war room/data center partition, the workstations and the server room/equipment area.	
17.3.	Installation Requirements	• Site Survey - prior to placing any cable pathways or cable, the contractor shall survey the site to determine job conditions will not impose any obstructions that would interfere with the safe and satisfactory placement of the	

		cables. The arrangements to remove any obstructions with the Project Manager need to be determined at that time.
		• Physical Installation - all components of the SCS should be installed and mounted by an Authorized Installer verified by the manufacturer of the structured cabling components.
		• Cable Pathways
		  o Pathways shall be designed and installed to meet applicable local and national building and electrical codes or regulations;
		  o Pathways shall not have exposed sharp edges that may come into contact with telecommunications cables; and
		  o Shall be properly grounded to the Telecoms Grounding.
		• Cable Tie Wraps
		  o Tie wraps shall be used at appropriate intervals to secure cable and to provide strain relief at termination points. These wraps shall not be over tightened to the point of deforming or crimping the cable sheath; and NOTE: Tie wraps shall not be used on patch/equipment cords.
		  o Hook and loop cable managers should be used in the closet where configuration of cables and terminations may be frequent.
		• Administration and Documentation
		  o Horizontal cables shall be labeled at each end; and
		  o Should adhere to the TIA/EIA-606 administrative standard for the telecommunications infrastructure of buildings for the labeling of all cables, termination hardware, splices, pathways and spaces.
		  o Drawings - Three (3) copies of as-built drawings and soft copy shall be supplied by the contractor showing the locations of identifiers for all endpoints.
		• Grounding
		  o All telecoms grounding/earthing and bonding shall be done to applicable codes and regulations;
		  o All telecoms grounding shall follow the new ANSI/TIA-607-C telecoms grounding standard; and
		  o All telecoms grounding shall not be connected to any electrical	

		grounding and lightning arrester systems.
		• Fire Protection
		   o Properly installed building-approved firestop systems shall be installed to prevent or retard the spread of fire, smoke, water, and gases through the building. This requirement applies to openings designed for telecommunications use that may or may not be penetrated by cables, wires, or raceways; and
		   o Fire stops shall be done to applicable building code.
		• Workmanship
		   o All work shall be done in a workman-like fashion of the highest standard in the telecommunications industry for 1years and installed by personnel who have been verified by the manufacturer of SCS as authorized installers;
		   o All equipment and materials are to be installed in a neat and secure manner, while cables are to be properly dressed; and
		   o Workers must clean any debris and trash at the close of each workday.	

18.	**Electrical Specifications**		**1 lot**
18.1.	Panel Boards	24 Branches Distribution Board, 300AF, 225AT Main CB, Bolt-On Center Main, 25KAIC, 3 Pole, 240 Volts, 60Hz with Grounding Lugs Branches: (2-60AT, 12- 20AT, 10- 30AT, 2 Pole, 60Hz, 240Volts)	
18.2.	Lighting	2300 Lumens, LED Panel Light, 40W Max	
18.3.	Receptacles	Duplex convenience outlet with ground, 240 volts, 60HZ. universal	
18.4.	ACUs Circuit Breaker Enclosure	30AT, 100AF, 2Pole, 240Volts, 60Hz in NEMA 3R Enclosure	
18.5.	Conduit Pipe	Polyvinyl chloride (PVC)	
18.6.	Switches	240Volts, 60HZ	
18.7.	Cables/Wires	100mm2 , 22 mm2 (Gnd), 5.5 mm2 , 3.5 mm2 , THHN/THWN, 90 degrees C	
19.	**Convenience Air Conditioning Units Functional Requirements**		**2 units**

19.1.	Functional Requirement	• 2HP Split Type Air Conditioner is comprised of two separate units, an outdoor unit and an indoor unit (Floor, Wall or Ceiling mounted design) • The split-type air conditioning system will remove heat and provide optimal cooling effect to a given size of room that remains relatively constant despite changes in external weather conditions or internal heat loads. • Likewise, it has a cooling capacity corresponding to the space/floor area that needs cooling. These shall operate quietly.	
19.2.	Technical Requirement	• System: Evaporator and Condenser • Cooling Capacity: 18,000 BTU/h • Energy Efficiency Ratio (EER): 11.50 kJ/hr-W • Maximum Sound Level: 45dB • Power Supply: Philippine Standard • Phase: Single Phase • Frequency: Philippine Standard	
20.	**Door Access Control**		**1 lot**
20.1.	Functional Requirement	• Must perform identification authentication and authorization of users; • Must be able to be temporarily unlocked during certain time periods without an access card; • Must be able to create several custom access levels; • Must be able to run custom reports based on certain parameters; and • Must have a lock down mode which disables all users from accessing one, few or all entrances	
20.2.	Technical Requirement	• Electric Bolt for Fully Frameless Glass Door or its equivalent • Resettable emergency door release that is used with an access control system • Emergency Key Switch (Main Door) • Door Release Button w/ Back Box • UPS Access Control Power Supply 12V, 3A with Back-up Battery • Capable of IP camera integration • Access Card Reader or its equivalent • At least two (2) years warranty on parts and service • Access Card 50 • Includes necessary cabling • At least two (2) years warranty on workmanship	

21.	**CCTV Surveillance System**		
21.1.	Functional Requirement	• Must be able to operate in a 24-hour basis of the video recording of all CCTV system;	
21.2.	Technical Requirement - Camera	• Camera Type: 2MP Dome Type Network Camera • Illumination • Color: 0.005 Lux • BW: Lux (IR LED on) • Image frame rate: Support 60fps @1920 x 1080 • Image Compression: H.265+ • IR Visibility: Up to 30m • Network Protocol: Support at least TCP/IP, ICMP, HTTP, HTTPS, FTP, SNMP • Protection Rating: IP67, IK10 • Network Interface: 1x 10/100Base-T RJ45 • Power Supply: 12 voe PoE (IEEE 802. 3af) Compliant • WDR: 120db • Application Programming Interface (API): Support ONVIF Profile S/G • Features: Face Detection and able to detect motion and will alarm once tampered, alarm when disconnected to network, IP address conflict, unauthorized log in, error in HOD and when Full.	8 units
21.3.	Technical Requirement – 8 CH Network Video Recorder (NVR)	• Number of Channel: 8 Channels • Video Compression: Support H.265+ • Supported Resolution: Up to 4K (3840 X 2160) • HDD Capacity: Up to 8TB capacity of each HOD • USB Port: At least 1x USB 2.0 and 1x USB 3.0 • Incoming Bandwidth: 160Mbps or better • Network Interface: 1 x RJ-45 10/100/1000 Mbps • POE: 16Port, RJ-45 10/100 Mbps Ethernet interface • Protocol Support: Support HTTPS, TCP/IP, DHCP, DNS, NTP, SMTP, UpnP • Power Supply: 100 to 240 VAC, 50/60 Hz • Weight: Manufacturer's standard • At least two (2) years warranty on parts and service • 8TB Hard Disk Drive (HOD) • Interface: SATA 6Gbps	1 Unit

		• Capacity: 8TB • Camera Supported: Up to 64 • Transfer Rate: At least 210MB/s • Cache: At least 256MB • MTBF: At least 1,000,000hrs • At least two (2) years warranty on parts and service	
22.	**Structured Cabling**		1 lot

22.1.	Functional Requirement	• SCS shall be able to provide connectivity to the following:
		  o Workstations;
		  o CCTV System;
		  o Door Access Control;
		  o Video Wall;
		  o Wireless Access Points WAPs; and Other network equipment.
		• Estimated Breakdown of Nodes
		  o Data 8
		  o Wireless Access Point 2
		  o Surveillance 4
		  o Access Control 2	

22.2.	Technical Requirement	• Cable Manager
		  o The Horizontal Cable Management shall be mounted above and below each patch panel:
		  o Have 1, 2 or 4 rack mount space (RMS) versions available.
		  o Be available in both 4" or 6" Deep Versions
		  o Have a cover to conceal Equipment Patch Cords
		  o Have finger radius holes that allow for quick opening and closing of doors at a single point
		• Copper Cable
		  o All Category 6 (CAT6) UTP cable shall conform to the following minimum performance standards:
		  o Provides significant headroom above all TIA and ISO/IEC CAT6transmission performance specifications
		  o Have a round cable CMR jacket with a nominal cable outside diameter (OD) up to 0.25inches
		  o Have a construction comprised of 4-pairs of 23 AWG solid bare copper conductors
		  o Utilize a center isolation member to maintain pair geometry for optimal performance
		  o Have a rip cord installed under the jacket for jacket removal
		  o Have reverse sequential measurement markings on jacket
		• Patch Panel
		  o All termination panels shall facilitate cross-connection and inter-	

| | | | connection using modular patch cords and shall conform to EIA standard, 19- inch relay rack mounting requirements:
○ Be made of flame retardant thermoplastic available in 24-port configurations
○ Exceed CAT6 connecting hardware specifications for all pair combinations up to 250 MHz
○ Allow termination with a standard termination tool
○ Be backwards compatible to allow lower performing categories of cables or connecting hardware to operate to their full capacity
○ Support industry standards for T568A or T568B wiring options on each individual outlet
○ Display category performance markings on front of panel
• Information Outlet (IO)
○ All CAT6 Information outlets (10) designed for termination of 4-pair balanced twisted-pair CAT6 copper cables must possess the following characteristics at the minimum:
○ Exceed CAT6 connecting hardware performance specifications
○ Allow termination with a standard tool
○ Be backwards compatible to allow lower performing categories of cables or connecting hardware
○ Support industry standards for T568A or T568B wiring options on each individual outlet
○ Can be installed from either front or rear of faceplate
○ Have colored icons provided for port identification
○ Be UL listed
• Faceplate
○ Offers pressure-release designation label covers which eliminate the need for a probe-pic or screwdriver when installing faceplate labels
○ Includes pressure-release designation label covers for quick, tool-less removal
○ Flexible mounting tab on outlets allows installation from front or rear of faceplate
○ Horizontal faceplates include designation label(s), clear label covers, and color-matching screw covers
○ Must be available in 1,2,3,4 ports configuration
• Patch Cords
○ All CAT6 patch cords shall conform to the flowing minimum performance | |

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		standards:
		○ High performance CAT6 cable for optimal flexibility and transmission performance
		○ Be backwards compatible with lower performing categories
		○ Be equipped with identical modular 8-position plugs on both ends, wired straight through with standards compliant wiring
		○ Utilize patented metallic isolator shields pairs inside plug for optimum performance and a 360° crimp for providing excellent plug-to-cable strain relief without causing pair deformation
		○ Obtain the required performance without use of printed circuit board components
		○ Incorporate internal stranded cordage isolator within a round, flame-retardant jacket to provide extended flex life and maintain ideal pair geometry
		○ Have a boot that features an ultra slim design for high density applications and snag free operation.
		○ Use modular plugs which exceed FCC CFR 47 part. 68 . subpart F and IEC 60603-7 specifications, have contact materials of copper alloy with contact plating of 50 micro inches gold or equivalent
		○ Be available in standard lengths with custom lengths available upon request
		○ Offer multiple cable colors (with ultra slim boots for high density applications) in standard colors for proper circuit identification
		○ Roughing-ins
		○ Includes all PVC conduits and all other necessary accessories

23.	**NEA Integrated Dashboard (Software) Solution – Pilot Phase Functional Requirements**		1 lot
23.1.	Financial	The financial component shall provide information on the financial health and performance of the ECs, including but not limited to the following metrics: a) Leverage • Debt Service Coverage Ratio (DSCR) • Debt Ratio b) Liquidity • Quick Ratio	

|				
			• Working Capital Ratio c) Efficiency • Payments to Power Suppliers • Payments to Genco/Transco • Payments to NEA • Payments to Banks/Other Financing Institutions (Internal Silo Software) • Collection Efficiency (current to current) • Collection Efficiency-Average d) Financial Results of Operations	
23.2.	Technical		The technical component of the NEA Dashboard shall provide information on the reliability and efficiency of the EC power distribution system, including, but not limited to timely visibility on the following performance metrics: a) Power Reliability • SAIFI (System Average Interruption Frequency Index) SAIFI =Total No. of Sustained Customer Power Interruptions within a Given Period /Total No. of Customers Served within the Same Period • SAIDI (System Average Interruption Duration Index) SAIDI=Total Duration of Sustained Customer Power Interruptions within a Given Period/ Total No. of Customers Served within the Same Period • CAIDI (Consumer Average Interruption Duration Index) CAIDI=Total Duration of Sustained Customer Power Interruptions within a Given Period/ Total No. of Customer Interruptions within the Same Period b) System Efficiency • System Loss=(Input Energy-Output Energy)/Input Energy x 100% • Power Factor=Working Power/Apparent Power	
23.3.	Operational		The operational component of the Dashboard shall provide NEA management with a day-to-day view of ECs' operational status including power situations and extended power disruptions and other events and/or alerts including external/environmental events with impact on EC operational status. EC GIS location maps shall be geographically mapped against environmental and other external conditions, including, where available, national	

		and private electric utility operational status data, weather conditions and other current local and national events with possible impact on EC operations. Examples of events or status alerts of particular interest would be multiple EC power outages, natural calamities (floods, earthquakes, landslides) as well as fires and military action in EC areas of operation.	

23.4.	Institutional	In contrast to the financial and technical aspects of the Dashboard, the institutional component shall graphically represent the institutional health status of individual ECs and an assessment of the performance ratings of their respective management teams based on the following key performance indicators:
		
		a) Human Resource: Leadership and Management
		   • Good Governance – EC management performance ratings
		   • Capacity Building – EC employee training program assessments
		b) Stakeholders – Member-Consumers.
		   • Customer Services/ Satisfaction
		   • EC Member Participation in EC activities
		c) Formation of Member-Consumer-Owners Organization
		d) Action on Consumer Complaints/Requests
		e) Sanitation of EC Master list
		f) Customer Satisfaction Survey	

23.5.	Electrification/ Projects	This fifth aspect of the NEA Dashboard should help NEA management track the level of Consumer Connections and in particular EC performance with respect to accomplishments versus set targets of their respective Sitio Electrification Program (SEP) and/or the Barangay Line Enhancement Program (BLEP)	
24.	**OTHER KEY REQUIREMENTS/ SPECIFICATIONS**		
24.1.	DDCC software development and production environment	Must be available on one platform and able to integrate/interface with existing and future systems of NEA and the ECs.	
24.2.	Key software and hardware components	Must be of reputable brand and must not have been banned, nor currently banned in any country.	

24.3.	DDCC Working Prototype	A valid design and working prototype of the proposed NEA Integrated Dashboard Solution (software) – Pilot Phase based on Functional Requirements outlined in Sec. 22 G. of this document must be presented to NEA by the winning bidder within 30 calendar days from receipt of NTP.	
24.4.	Solutions architecture/ design capability to handle other data extraction requirements of NEA and the ECs	The proposed solutions architecture/ design and NEA Integrated Dashboard Solution – Software, Pilot Phase, must have the flexibility and scalability to handle various data extraction requirements of NEA (internal operating units/ departments) and data from all 121 ECs (technical, financial & other databases) for the deployment of the NEA Integrated Dashboard Solution beyond the pilot phase.	

Section VII. Drawings

EXHIBIT A – NEA INTEGRATED DASHBOARD

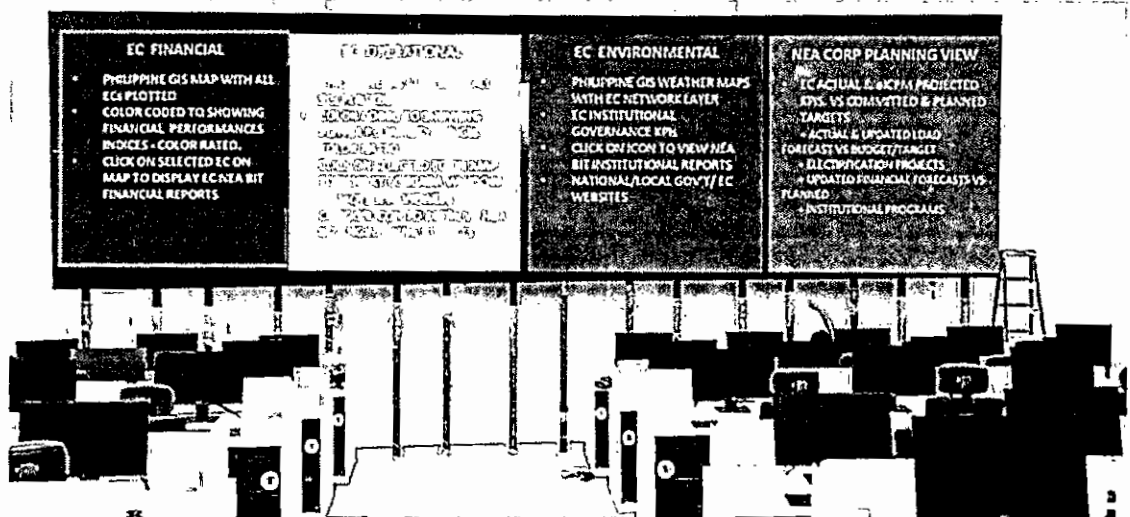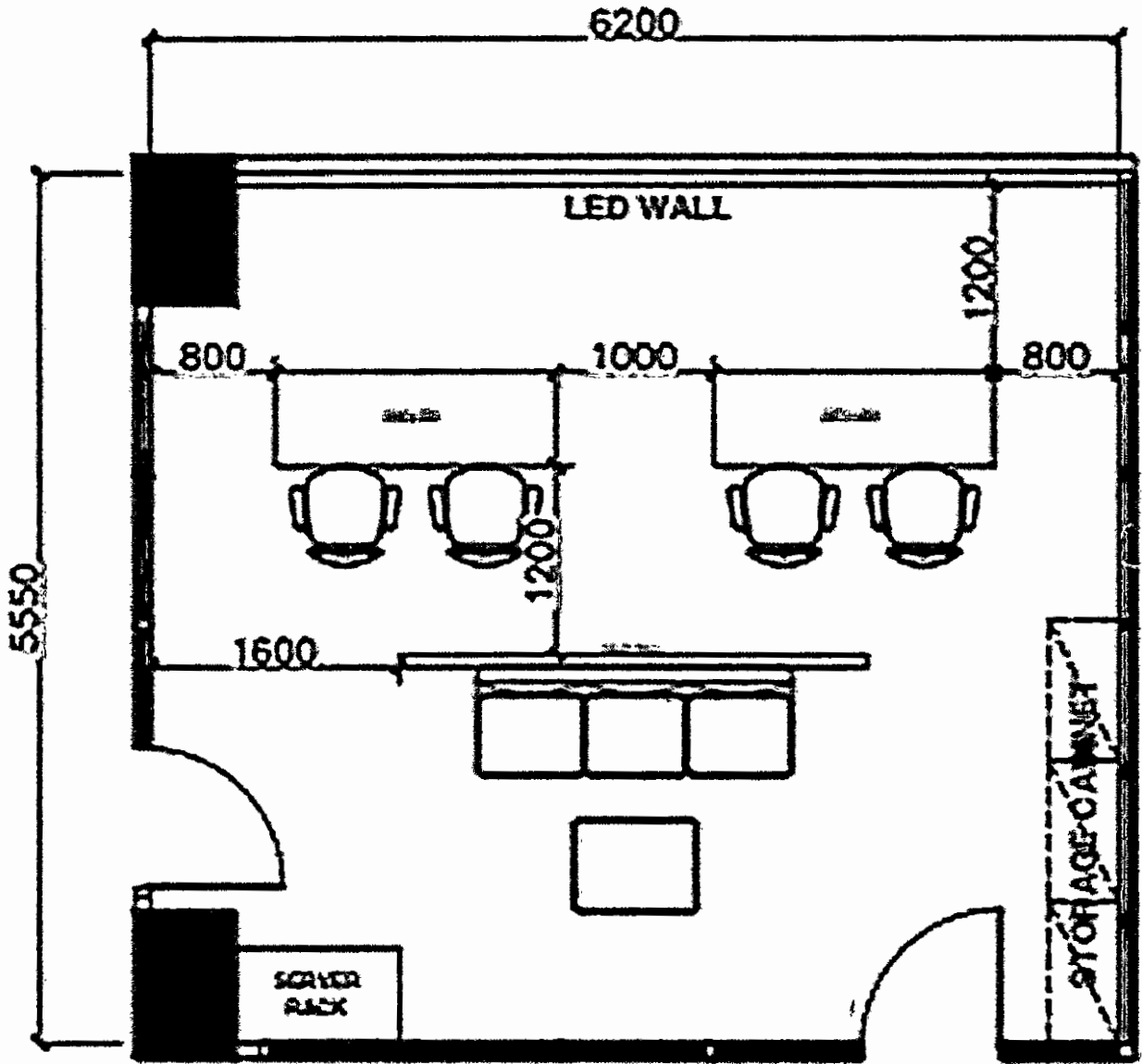EXHIBIT A 1
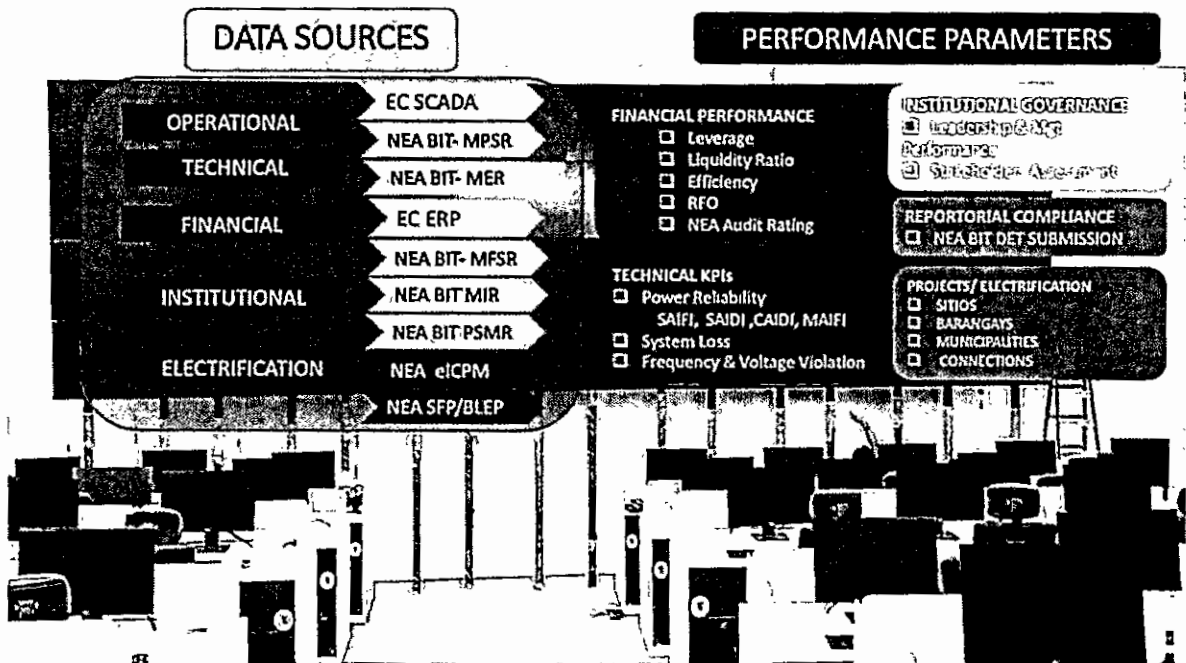
NEA Dashboard
Performance Windows

EXHIBIT B – NEA DDCC PROPOSED ROOM LAYOUT

OPTION 2

PROPOSED FLOOR PLAN

Section VIII. Checklist of Technical and Financial Documents

Checklist of Technical and Financial Documents

I. TECHNICAL COMPONENT ENVELOPE

Class "A" Documents

Legal Documents

☐ (a) Valid PhilGEPS Registration Certificate (Platinum Membership) (all pages) in accordance with Section 8.5.2 of the IRR;

Technical Documents

☐ (b) Statement of the prospective bidder of all its ongoing government and private contracts, including contracts awarded but not yet started, if any, whether similar or not similar in nature and complexity to the contract to be bid; **and**

☐ (c) Statement of the bidder's Single Largest Completed Contract (SLCC) similar to the contract to be bid, except under conditions provided under the rules; **and**

☐ (d) Original copy of Bid Security. If in the form of a Surety Bond, submit also a certification issued by the Insurance Commission **or** original copy of Notarized Bid Securing Declaration; **and**

☐ (e) Original duly signed Omnibus Sworn Statement (OSS) **and** if applicable, Original Notarized Secretary's Certificate in case of a corporation, partnership, or cooperative; or Original Special Power of Attorney of all members of the joint venture giving full power and authority to its officer to sign the OSS and do acts to represent the Bidder.

Financial Documents

☐ (f) The prospective bidder's computation of Net Financial Contracting Capacity (NFCC).

Class "B" Documents

☐ (g) If applicable, duly signed joint venture agreement (JVA) in accordance with RA No. 4566 and its IRR in case the joint venture is already in existence **or** duly notarized statements from all the potential joint venture partners stating that they will enter into and abide by the provisions of the JVA in the instance that the bid is successful.

II. FINANCIAL COMPONENT ENVELOPE

☐ (h) Original of duly signed and accomplished Financial Bid Form; **and**

Other documentary requirements under RA No. 9184

☐ (i) Original of duly signed Bid Prices in the Bill of Quantities; **and**
☐ (j) Duly accomplished Detailed Estimates Form, including a summary sheet indicating the unit prices of construction materials, labor rates, and equipment rentals used in coming up with the Bid; **and**
☐ (k) Cash Flow by Quarter.

Republic of the Philippines

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