

**GOVERNMENT OF THE REPUBLIC
OF GHANA**



Republic of Ghana

**Ministry of Communication, Digital Technology and
Innovations**

INTERNATIONAL COMPETITIVE BIDDING

**Revised Request for Bids Goods –
Two-envelope Bidding Process with Rated
Criteria**

**NATIONAL DATA CENTER REFRESH AND
UPGARDE**

Specific Procurement Notice

Revised Request for Bids Goods

(Two-Envelope Bidding Process)

Country: Republic of Ghana

Name of Project: Ghana Digital Accelerated Project

Contract Title: National Data Center Refresh and Upgrade

Credit No.: IDA 70960-GH

RFB Reference No.: GDAP/Comp2.1.1 - GH-MOCDTI-509838-GO-RFB

Date of Issue.: 12th June 2026

1. The Government of the Republic of Ghana has received financing from the World Bank toward the cost of the Ghana Digital Acceleration Project (GDAP), and intends to apply part of the proceeds toward payments under the contract for the NATIONAL DATA CENTER REFRESH AND UPGRADE. “For this contract, the Borrower shall process the payments using the Direct Payment disbursement method, as defined in the World Bank’s Disbursement Guidelines for Investment Project Financing, except for those payments, which the contract provides to be made through letter of credit.”
2. The Ministry of Communication, Digital Technology and Innovations (MoCDTI) now invites sealed Bids from eligible Bidders for the following.

No.	Description	Bid Security
1	National Data Center Refresh and Upgrade	US\$200,000.00 for Bank Guarantee or US\$600,000.00 for Insurance Bond

3. Bidding will be conducted through international competitive procurement using a Request for Bids (RFB) as specified in the World Bank’s “Procurement Regulations for IPF Borrowers” 7th Edition, September 2025 (“Procurement Regulations”), and is open to all eligible Bidders as defined in the Procurement Regulations.
4. Bids will be evaluated in accordance with the evaluation process set out in the bidding documents. The following weightings shall apply for Rated Criteria (including technical and non-price factors): **80%** and for Bid cost: **20%**
5. Interested eligible Bidders may obtain further information from the address below and inspect the bidding document during office hours 0900 to 1700 at the address given below.

6. The bidding document in English may be purchased by interested eligible Bidders upon the submission of a written application to the address below and upon payment of a nonrefundable fee of **GH¢2,000.00**. The method of payment will be cash or bank draft in the name of the Ministry of Communication, Digital Technology and Innovations. The document will be sent by either email, courier or pickup. Cost of courier service to be borne by prospective bidder.
7. Bids must be delivered to the address below or before **10:00GMT, 13th August 2026**. Electronic Bidding **will not** be permitted. **Late Bids will be rejected**. The outer Bid envelopes marked “ORIGINAL BID”, and the inner envelopes marked “TECHNICAL PART” will be publicly opened in the presence of the Bidders’ designated representatives and anyone who chooses to attend, at the address below on **10:00GMT, 13th August 2026**. All envelopes marked “SECOND ENVELOPE: FINANCIAL PART” shall remain unopened and will be held in safe custody of the Purchaser until the second public opening.
8. All Bids must be accompanied by a **Bid Security** in the amount of **US\$200,000.00** for Bank Guarantee or **US\$600,000.00** for Insurance Bond.
9. Attention is drawn to the Procurement Regulations requiring the Borrower to disclose information on the successful bidder’s beneficial ownership, as part of the Contract Award Notice, using the Beneficial Ownership Disclosure Form as included in the bidding document.
10. The address(es) referred to above is (are):

Address for Download and/or Purchase of Bidding Documents	Address for Submission of Bids
The Chief Director Attn: The Project Coordinator: Ghana Digital Acceleration Project (GDAP) Project Rooms 39 Fifth Floor, Ministry of Communication, Digital Technology and Innovations Office Complex Abdul Diouf Street, near Kofi Annan ICT Centre of Excellence P.O. Box M.38, Ministries, Accra Ghana Digital Address: GA-079-0539 To Email: pcu.gdap@moc.gov.gh URL.: https://moc.gov.gh/tenders-awards/	The Chief Director Attn: The Project Coordinator: Ghana Digital Acceleration Project (GDAP) Six Floor, Conference Room Ministry of Communication, Digital Technology and Innovations Office Complex Abdul Diouf Street, near Kofi Annan ICT Centre of Excellence P.O. Box M.38, Ministries, Accra Ghana Digital Address: GA-079-0539

Revised Request for Bids Goods

(Two-Envelope Bidding Process)

Procurement of: NATIONAL DATA CENTER REFRESH AND UPGARDE

RFB No: GDAP/Comp2.1.1 - GH-MOCDTI-509838-GO-RFB.

Project: Ghana Digital Accelerated Project

Purchaser: Ministry of Communication, Digital Technology and Innovations

Country: Republic of Ghana

Issued on: Issued on: 12th June 2026

Standard Procurement Document

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PART 1 – Bidding Procedures

Section I - Instructions to Bidders

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Section I - Instructions to Bidders

A. General

1. Scope of Bid

- 1.1 In connection with the Specific Procurement Notice, Request for Bids (RFB), specified **in the Bid Data Sheet (BDS)**, the Purchaser, as specified **in the BDS**, issues this bidding document for the supply of Goods and, if applicable, any Related Services incidental thereto, as specified in Section VII, Schedule of Requirements. The name, identification and number of lots (contracts) of this RFB are specified **in the BDS**.
- 1.2 Throughout this bidding document:
 - (a) the term “in writing” means communicated in written form (e.g. by mail, e-mail, fax, including, if **specified in the BDS**, distributed or received through the electronic-procurement system used by the Purchaser), with proof of receipt;
 - (b) if the context so requires, “singular” means “plural” and vice versa; and
 - (c) “Day” means calendar day, unless otherwise specified as “Business Day”. A Business Day is any day that is an official working day of the Borrower. It excludes the Borrower’s official public holidays.

2. Source of Funds

- 2.1 The Borrower or Recipient (hereinafter called “Borrower”) specified **in the BDS** has applied for or received financing (hereinafter called “funds”) from the International Bank for Reconstruction and Development or the International Development Association (hereinafter called “the Bank”) in an amount specified **in the BDS**, toward the project named **in the BDS**. The Borrower intends to apply a portion of the funds to eligible payments under the contract for which this bidding document is issued.
- 2.2 Payment by the Bank will be made only at the request of the Borrower and upon approval by the

Bank in accordance with the terms and conditions of the Loan (or other financing) Agreement. The Loan (or other financing) Agreement prohibits a withdrawal from the loan account for the purpose of any payment to persons or entities, or for any import of goods, if such payment or import is prohibited by a decision of the United Nations Security Council taken under Chapter VII of the Charter of the United Nations. No party other than the Borrower shall derive any rights from the Loan (or other financing) Agreement or have any claim to the proceeds of the Loan (or other financing).

3. Fraud and Corruption

- 3.1 The Bank requires compliance with the Bank's Anti-Corruption Guidelines and its prevailing sanctions policies and procedures as set forth in the WBG's Sanctions Framework, as set forth in Section VI, Fraud and Corruption.
- 3.2 In further pursuance of this policy, bidders shall permit and shall cause their agents (where declared or not), subcontractors, subconsultants, service providers, suppliers, and personnel, to permit the Bank to inspect all accounts, records and other documents relating to any initial selection process, prequalification process, bid submission, proposal submission, and contract performance (in the case of award), and to have them audited by auditors appointed by the Bank.

4. Eligible Bidders

- 4.1 A Bidder may be a firm that is a private entity, a state-owned enterprise or institution (subject to ITB 4.6), or any combination of such entities in the form of a joint venture (JV) under an existing agreement or with the intent to enter into such an agreement supported by a letter of intent. In the case of a joint venture, all members shall be jointly and severally liable for the execution of the entire Contract in accordance with the Contract terms. The JV shall nominate a Representative who shall have the authority to conduct all business for and on behalf of any and all the members of the JV during the Bidding process and, in the event the JV is awarded the Contract, during contract execution. Unless specified **in the BDS**, there is no limit on the number of members in a JV.

- 4.2 A Bidder shall not have a conflict of interest. Any Bidder found to have a conflict of interest shall be disqualified. A Bidder may be considered to have a conflict of interest for the purpose of this Bidding process, if the Bidder:
- (a) directly or indirectly controls, is controlled by or is under common control with another Bidder; or
 - (b) receives or has received any direct or indirect subsidy from another Bidder; or
 - (c) has the same legal representative as another Bidder; or
 - (d) has a relationship with another Bidder, directly or through common third parties, that puts it in a position to influence the Bid of another Bidder, or influence the decisions of the Purchaser regarding this Bidding process; or
 - (e) or any of its affiliates participated as a consultant in the preparation of the design or technical specifications of the works that are the subject of the Bid; or
 - (f) or any of its affiliates has been hired (or is proposed to be hired) by the Purchaser or Borrower for the Contract implementation; or
 - (g) would be providing goods, works, or non-consulting services resulting from or directly related to consulting services for the preparation or implementation of the project specified in the BDS reference ITB 2.1 (the name of the project), that it provided or were provided by any affiliate that directly or indirectly controls, is controlled by, or is under common control with that firm; or
 - (h) has a close business or family relationship with a professional staff of the Borrower (or of the project implementing agency, or of a recipient of a part of the loan) who: (i) are directly or indirectly involved in the preparation of the bidding document or specifications of the Contract, and/or the

Bid evaluation process of such Contract; or
(ii) would be involved in the implementation or supervision of such Contract unless the conflict stemming from such relationship has been resolved in a manner acceptable to the Bank throughout the Bidding process and execution of the Contract.

- 4.3 A firm that is a Bidder (either individually or as a JV member) shall not participate in more than one Bid, except for permitted alternative Bids. This includes participation as a subcontractor. Such participation shall result in the disqualification of all Bids in which the firm is involved. A firm that is not a Bidder or a JV member, may participate as a subcontractor in more than one Bid.
- 4.4 A Bidder may have the nationality of any country, subject to the restrictions pursuant to ITB 4.8. A Bidder shall be deemed to have the nationality of a country if the Bidder is constituted, incorporated or registered in and operates in conformity with the provisions of the laws of that country, as evidenced by its articles of incorporation (or equivalent documents of constitution or association) and its registration documents, as the case may be. This criterion also shall apply to the determination of the nationality of proposed subcontractors or subconsultants for any part of the Contract including related Services.
- 4.5 A Bidder that has been sanctioned by the Bank, pursuant to the Bank's Anti-Corruption Guidelines, and in accordance with its prevailing sanctions policies and procedures as set forth in the WBG's Sanctions Framework as described in Section VI paragraph 2.2 d. shall be ineligible to be prequalified for, initially selected for, bid for, propose for, or be awarded a Bank-financed contract or benefit from a Bank-financed contract, financially or otherwise, during such period of time as the Bank shall have determined. The list of debarred firms and individuals is available at the electronic address specified in the BDS.
- 4.6 Bidders that are state-owned enterprises or institutions in the Purchaser's Country may be eligible to compete and be awarded a Contract(s)

only if they can establish, in a manner acceptable to the Bank, that they (i) are legally and financially autonomous (ii) operate under commercial law, and (iii) are not under supervision of the Purchaser.

4.7 A Bidder shall not be under suspension from Bidding by the Purchaser as the result of the operation of a Bid-Securing Declaration or Proposal-Securing Declaration.

4.8 Firms and individuals may be ineligible if so indicated in Section V, Eligible Countries, and:

- (a) as a matter of law or official regulations, the Borrower's country prohibits commercial relations with that country, provided that the Bank is satisfied that such exclusion does not preclude effective competition for the supply of goods or the contracting of works or services required; or
- (b) by an act of compliance with a decision of the United Nations Security Council taken under Chapter VII of the Charter of the United Nations, the Borrower's country prohibits any import of goods or contracting of works or services from that country, or any payments to any country, person, or entity in that country.

4.9 A Bidder shall provide such documentary evidence of eligibility satisfactory to the Purchaser, as the Purchaser shall reasonably request.

4.10 A firm that is under a sanction of debarment by the Borrower from being awarded a contract is eligible to participate in this procurement, unless the Bank, at the Borrower's request, is satisfied that the debarment;

- (a) relates to fraud or corruption; and
- (b) followed a judicial or administrative proceeding that afforded the firm adequate due process.

5. Eligible Goods and Related Services

5.1 All the Goods and Related Services to be supplied under the Contract and financed by the Bank may have their origin in any country in accordance with Section V, Eligible Countries.

5.2 For purposes of this ITB, the term "goods" includes commodities, raw material, machinery,

equipment, and industrial plants; and “related services” includes services such as insurance, installation, training, and initial maintenance.

- 5.3 The term “origin” means the country where the goods have been mined, grown, cultivated, produced, manufactured or processed; or, through manufacture, processing, or assembly, another commercially recognized article results that differs substantially in its basic characteristics from its components.

B. Contents of Request for Bids Document

6. Sections of Bidding Document

- 6.1 The bidding document consist of Parts 1, 2, and 3, which include all the sections indicated below, and should be read in conjunction with any addenda issued in accordance with ITB 8.

PART 1 Bidding Procedures

- Section I - Instructions to Bidders (ITB)
- Section II - Bidding Data Sheet (BDS)
- Section III - Evaluation and Qualification Criteria
- Section IV - Bidding Forms
- Section V - Eligible Countries
- Section VI - Fraud and Corruption

PART 2 Supply Requirements

- Section VII - Schedule of Requirements

PART 3 Contract

- Section VIII - General Conditions of Contract
- Section IX - Special Conditions of Contract
- Section X - Contract Forms

- 6.2 The Specific Procurement Notice - Request for Bids (RFB) issued by the Purchaser is not part of this bidding document.
- 6.3 Unless obtained directly from the Purchaser, the Purchaser is not responsible for the completeness of the document, responses to requests for

clarification, the Minutes of the pre-Bid meeting (if any), or addenda to the bidding document in accordance with ITB 8. In case of any contradiction, documents obtained directly from the Purchaser shall prevail.

- 6.4 The Bidder is expected to examine all instructions, forms, terms, and specifications in the bidding document and to furnish with its Bid all information or documentation as is required by the bidding document.

7. Clarification of the Bidding Document

- 7.1 A Bidder requiring any clarification of the bidding document shall contact the Purchaser in writing at the Purchaser's address specified **in the BDS**. The Purchaser will respond in writing to any request for clarification, provided that such request is received prior to the deadline for submission of Bids within a period specified **in the BDS**. The Purchaser shall forward copies of its response to all Bidders who have acquired the bidding document in accordance with ITB 6.3, including a description of the inquiry but without identifying its source. If so specified **in the BDS**, the Purchaser shall also promptly publish its response at the web page identified **in the BDS**. Should the clarification result in changes to the essential elements of the bidding document, the Purchaser shall amend the bidding document following the procedure under ITB 8 and ITB 22.2.

8. Amendment of Bidding Document

- 8.1 At any time prior to the deadline for submission of Bids, the Purchaser may amend the bidding document by issuing addenda.
- 8.2 Any addendum issued shall be part of the bidding document and shall be communicated in writing to all who have obtained the bidding document from the Purchaser in accordance with ITB 6.3. The Purchaser shall also promptly publish the addendum on the Purchaser's web page in accordance with ITB 7.1.
- 8.3 To give prospective Bidders reasonable time in which to take an addendum into account in preparing their Bids, the Purchaser may, at its

discretion, extend the deadline for the submission of Bids, pursuant to ITB 22.2.

C. Preparation of Bids

9. Cost of Bidding

- 9.1 The Bidder shall bear all costs associated with the preparation and submission of its Bid, and the Purchaser shall not be responsible or liable for those costs, regardless of the conduct or outcome of the Bidding process.

10. Language of Bid

- 10.1 The Bid, as well as all correspondence and documents relating to the Bid exchanged by the Bidder and the Purchaser, shall be written in the language specified **in the BDS**. Supporting documents and printed literature that are part of the Bid may be in another language provided they are accompanied by an accurate translation of the relevant passages into the language specified **in the BDS**, in which case, for purposes of interpretation of the Bid, such translation shall govern.

11. Documents comprising Bid

- 11.1 The Bid shall comprise two Parts, namely the Technical Part and the Financial Part. These two Parts shall be submitted simultaneously in two separate sealed envelopes (two-envelope Bidding process). One envelope shall contain only information relating to the Technical Part and the other, only information relating to the Financial Part. These two envelopes shall be enclosed in a separate sealed outer envelope marked “ORIGINAL BID”.
- 11.2 The **Technical Part** shall contain the following:
- (a) **Letter of Bid - Technical Part:** prepared in accordance with ITB 12;
 - (b) **Bid Security or Bid-Securing Declaration:** in accordance with ITB 19.1;
 - (c) **Alternative Bid - Technical Part:** if permissible in accordance with ITB 13, the Technical Part of any Alternative Bid;
 - (d) **Authorization:** written confirmation authorizing the signatory of the Bid to

commit the Bidder, in accordance with ITB 20.3;

- (e) **Bidder's Eligibility:** documentary evidence in accordance with ITB 17 establishing the Bidder's eligibility to Bid;
 - (f) **Qualifications:** documentary evidence in accordance with ITB 17 establishing the Bidder's qualifications to perform the Contract if its Bid is accepted;
 - (g) **Eligibility of Goods and Related Services:** documentary evidence in accordance with ITB 16, establishing the eligibility of the Goods and Related Services to be supplied by the Bidder;
 - (h) **Conformity:** documentary evidence in accordance with ITB 16, that the Goods and Related Services conform to the bidding document;
 - (i) any other document **required in the BDS.**
- 11.3 The **Financial Part** envelope shall contain the following:
- (a) **Letter of Bid – Financial Part:** prepared in accordance with ITB 12 and ITB 14;
 - (b) **Price Schedules:** completed prepared in accordance with ITB 12 and ITB 14;
 - (c) **Alternative Bid - Financial Part;** if permissible in accordance with ITB 13, the Financial Part of any Alternative Bid;
 - (d) any other document **required in the BDS.**
- 11.4 The Technical Part shall not include any financial information related to the Bid price. Where material financial information related to the Bid price is contained in the Technical Part the Bid shall be declared non-responsive.
- 11.5 In addition to the requirements under ITB 11.2, Bids submitted by a JV shall include a copy of the Joint Venture Agreement entered into by all members. Alternatively, a letter of intent to execute a Joint Venture Agreement in the event of a successful Bid shall be signed by all members and

submitted with the Bid, together with a copy of the proposed Agreement.

- 11.6 The Bidder shall furnish in the Letter of Bid information on commissions and gratuities, if any, paid or to be paid to agents or any other party relating to this Bid.

12. Letters of Bid

- 12.1. The Bidder shall prepare the Letter of Bid – Technical Part, and Letter of Bid – Financial Part using the relevant forms furnished in Section IV, Bidding Forms. The forms must be completed without any alterations to the text, and no substitutes shall be accepted except as provided under ITB 20.3. All blank spaces shall be filled in with the information requested.

13. Alternative Bids

- 13.1. Unless otherwise **specified in the BDS**, Alternative Bids shall not be considered.

14. Bid prices and Discounts

- 14.1 The prices and discounts quoted by the Bidder in the Letter of Bid - Financial Part and in the Price Schedules shall conform to the requirements specified below.
- 14.2 All lots (contracts) and items must be listed and priced separately in the Price Schedules.
- 14.3 The price to be quoted in the Letter of Bid - Financial Part, in accordance with ITB 12.1 shall be the total price of the Bid, excluding any discounts offered.
- 14.4 The Bidder shall quote any discounts and indicate the methodology for their application in the Letter of Bid - Financial Part, in accordance with ITB 12.1.
- 14.5 Prices quoted by the Bidder shall be fixed during the Bidder's performance of the Contract and not subject to variation on any account, unless otherwise specified **in the BDS**. A Bid submitted with an adjustable price quotation shall be treated as nonresponsive and shall be rejected, pursuant to ITB 31. However, if in accordance with the BDS, prices quoted by the Bidder shall be subject to adjustment during the performance of the Contract, a Bid submitted with a fixed price

quotation shall not be rejected, but the price adjustment shall be treated as zero.

- 14.6 If so specified in ITB 1.1, Bids are being invited for individual lots (contracts) or for any combination of lots (packages). Unless otherwise specified **in the BDS**, prices quoted shall correspond to 100% of the items specified for each lot and to 100% of the quantities specified for each item of a lot. Bidders wishing to offer discounts for the award of more than one Contract shall specify in their Bid the price reductions applicable to each package, or alternatively, to individual Contracts within the package. **However, discounts that are conditional on the award of more than one lot will not be considered for bid evaluation purpose.**
- 14.7 The terms EXW, CIP, and other similar terms shall be governed by the rules prescribed in the current edition of Incoterms, published by the International Chamber of Commerce, as specified **in the BDS.**
- 14.8 Prices shall be quoted as specified in each Price Schedule included in Section IV, Bidding Forms. The disaggregation of price components is required solely for the purpose of facilitating the comparison of Bids by the Purchaser. This shall not in any way limit the Purchaser's right to contract on any of the terms offered. In quoting prices, the Bidder shall be free to use transportation through carriers registered in any eligible country, in accordance with Section V, Eligible Countries. Similarly, the Bidder may obtain insurance services from any eligible country in accordance with Section V, Eligible Countries. Prices shall be entered in the following manner:
- (a) For Goods manufactured in the Purchaser's Country:
 - (i) the price of the Goods quoted EXW (ex-works, ex-factory, ex warehouse, ex showroom, or off-the-shelf, as applicable), including all customs duties and sales and other taxes already paid or payable on the

components and raw material used in the manufacture or assembly of the Goods;

- (ii) any Purchaser's Country sales tax and other taxes which will be payable on the Goods if the Contract is awarded to the Bidder; and
 - (iii) the price for inland transportation, insurance, and other local services required to convey the Goods to their final destination (Project Site) specified **in the BDS.**
- (b) For Goods manufactured outside the Purchaser's Country, to be imported:
 - (i) the price of the Goods, quoted CIP named place of destination, in the Purchaser's Country, as specified **in the BDS;**
 - (ii) the price for inland transportation, insurance, and other local services required to convey the Goods from the named place of destination to their final destination (Project Site) specified **in the BDS;**
- (c) For Goods manufactured outside the Purchaser's Country, already imported:
 - (i) the price of the Goods, including the original import value of the Goods; plus any mark-up (or rebate); plus any other related local cost, and custom duties and other import taxes already paid or to be paid on the Goods already imported.
 - (ii) the custom duties and other import taxes already paid (need to be supported with documentary evidence) or to be paid on the Goods already imported;
 - (iii) the price of the Goods, obtained as the difference between (i) and (ii) above;
 - (iv) any Purchaser's Country sales and other taxes which will be payable on

the Goods if the Contract is awarded to the Bidder; and

- (v) the price for inland transportation, insurance, and other local services required to convey the Goods to their final destination (Project Site) specified **in the BDS**.
- (d) for Related Services, other than inland transportation and other services required to convey the Goods to their final destination, whenever such Related Services are specified in the Schedule of Requirements:
 - (i) the price of each item comprising the Related Services (inclusive of any applicable taxes).

15. Currencies of Bid and Payment

- 15.1 The currency(ies) of the Bid and the currency(ies) of payments shall be the same. The Bidder shall quote in the currency of the Purchaser's Country the portion of the Bid price that corresponds to expenditures incurred in the currency of the Purchaser's country, unless otherwise specified **in the BDS**.
- 15.2 The Bidder may express the Bid price in any currency. If the Bidder wishes to be paid in a combination of amounts in different currencies, it may quote its price accordingly but shall use no more than three foreign currencies in addition to the currency of the Purchaser's Country.

16. Documents Establishing the Eligibility and Conformity of the Goods and Related Services

- 16.1 To establish the eligibility of the Goods and Related Services in accordance with ITB 5, Bidders shall complete the country of origin declarations in the Price Schedule Forms, included in Section IV, Bidding Forms.
- 16.2 To establish the conformity of the Goods and Related Services to the bidding document, the Bidder shall furnish as part of its Bid the documentary evidence that the Goods conform to the technical specifications and standards specified in Section VII, Schedule of Requirements.
- 16.3 The documentary evidence may be in the form of literature, drawings or data, and shall consist of a

detailed item by item description of the essential technical and performance characteristics of the Goods and Related Services, demonstrating substantial responsiveness of the Goods and Related Services to the technical specification, and if applicable, a statement of deviations and exceptions to the provisions of the Section VII, Schedule of Requirements.

16.4 The Bidder shall also furnish a list giving full particulars, including available sources and current prices of spare parts, special tools, etc., necessary for the proper and continuing functioning of the Goods during the period specified **in the BDS** following commencement of the use of the goods by the Purchaser.

16.5 Standards for workmanship, process, material, and equipment, as well as references to brand names or catalogue numbers specified by the Purchaser in the Schedule of Requirements, are intended to be descriptive only and not restrictive. The Bidder may offer other standards of quality, brand names, and/or catalogue numbers, provided that it demonstrates, to the Purchaser's satisfaction, that the substitutions ensure substantial equivalence or are superior to those specified in the Section VII, Schedule of Requirements.

17. Documents Establishing the Eligibility and Qualifications of the Bidder

17.1 To establish Bidder's eligibility in accordance with ITB 4, Bidders shall complete the Letter of Bid – Technical Part, included in Section IV, Bidding Forms.

17.2 The documentary evidence of the Bidder's qualifications to perform the Contract, if its Bid is accepted, shall establish to the Purchaser's satisfaction:

- (a) that, if required **in the BDS**, a Bidder that does not manufacture or produce the Goods it offers to supply shall submit the Manufacturer's Authorization using the form included in Section IV, Bidding Forms to demonstrate that it has been duly authorized by the manufacturer or producer of the Goods

to supply these Goods in the Purchaser's Country;

- (b) that, if required **in the BDS**, in case of a Bidder not doing business within the Purchaser's Country, the Bidder is or will be (if awarded the Contract) represented by an Agent in the country equipped and able to carry out the Supplier's maintenance, repair and spare parts-stocking obligations prescribed in the Conditions of Contract and/or Technical Specifications; and
- (c) that the Bidder meets each of the qualification criterion specified in Section III, Evaluation and Qualification Criteria.

18. Period of Validity of Bids

- 18.1. Bids shall remain valid until the date **specified in the BDS** or any extended date if amended by the Purchaser in accordance with ITB 8. A Bid that is not valid until the date **specified in the BDS**, or any extended date if amended by the Purchaser in accordance with ITB 8, shall be rejected by the Purchaser as nonresponsive.
- 18.2. In exceptional circumstances, prior to the expiry of the Bid validity, the Purchaser may request Bidders to extend the period of validity of their Bids. The request and the responses shall be made in writing. If a Bid Security is requested (in accordance with ITB 19), it shall also be extended for a corresponding period. A Bidder may refuse the request without forfeiting its Bid Security. A Bidder granting the request shall not be required or permitted to modify its Bid, except as provided in ITB 18.3.
- 18.3. If the award is delayed by a period exceeding fifty-six (56) days beyond the expiry of the initial Bid validity, the Contract price shall be determined as follows:
 - (a) In the case of fixed price contracts, the Contract price shall be the Bid price adjusted by the factor **specified in the BDS**.
 - (b) In the case of adjustable price contracts, no adjustment shall be made.
 - (c) In any case, Bid evaluation shall be based on the Bid price without taking into

consideration the applicable correction from those indicated above.

19. Bid Security

- 19.1. The Bidder shall furnish, as part of the Technical Part of its Bid, either a Bid-Securing Declaration or a Bid Security, as specified **in the BDS**, in original form and, in the case of a Bid security, in the amount and currency specified **in the BDS**.
- 19.2. A Bid Securing Declaration shall use the form included in Section IV, Bidding Forms.
- 19.3. If a Bid Security is specified pursuant to ITB 19.1, the Bid security shall be a demand guarantee in any of the following forms at the Bidder's option:
 - (a) an unconditional guarantee issued by a bank or non-bank financial institution (such as an insurance, bonding or surety company);
 - (b) an irrevocable letter of credit;
 - (c) a cashier's or certified check; or
 - (d) another security **specified in the BDS**,from a reputable source from an eligible country. If an unconditional guarantee is issued by a non-bank financial institution located outside the Purchaser's Country the issuing non-bank financial institution shall have a correspondent financial institution located in the Purchaser's Country to make it enforceable unless the Purchaser has agreed in writing, prior to Bid submission, that a correspondent financial institution is not required. In the case of a bank guarantee, the Bid security shall be submitted either using the Bid Security Form included in Section IV, Bidding Forms, or in another substantially similar format approved by the Purchaser prior to Bid submission. The Bid security shall be valid for twenty-eight (28) days beyond the original date of expiry of the Bid validity, or beyond any extended date if requested under ITB 18.2.
- 19.4. If a Bid Security is specified pursuant to ITB 19.1, any Bid not accompanied by a substantially responsive Bid Security shall be rejected by the Purchaser as non-responsive.

- 19.5. If a Bid Security is specified pursuant to ITB 19.1, the Bid Security of unsuccessful Bidders shall be returned as promptly as possible upon the successful Bidder's signing the contract and furnishing the Performance Security pursuant to ITB 49.
- 19.6. The Bid Security of the successful Bidder shall be returned as promptly as possible once the successful Bidder has signed the Contract and furnished the required performance security.
- 19.7. The Bid Security may be forfeited:
- (a) if a Bidder withdraws its Bid prior to the expiry date of Bid validity specified by the Bidder on the Letter of Bid or any extended date provided by the Bidder ; or
 - (b) if the successful Bidder fails to:
 - (i) sign the Contract in accordance with ITB 48; or
 - (ii) furnish a performance security in accordance with ITB 49.
- 19.8. The Bid Security or Bid-Securing Declaration of a JV must be in the name of the JV that submits the Bid. If the JV has not been legally constituted into a legally enforceable JV at the time of Bidding, the Bid security or Bid-Securing Declaration shall be in the names of all future members as named in the letter of intent referred to in ITB 4.1 and ITB 11.5.
- 19.9. If a Bid security is **not required in the BDS**, pursuant to ITB 19.1, and
- (a) if a Bidder withdraws its Bid during the period of Bid validity specified by the Bidder on the Letter of Bid, or any extended date provided by the Bidder, or
 - (b) if the successful Bidder fails to: sign the Contract in accordance with ITB 48; or furnish a performance security in accordance with ITB 49;
- the Borrower may, **if provided for in the BDS**, declare the Bidder ineligible to be awarded a

contract by the Purchaser for a period of time **as stated in the BDS**.

20. Format and Signing of Bid

- 20.1 The Bidder shall prepare the Bid, in accordance with ITB 11 and ITB 21.
- 20.2 Bidders shall mark as “CONFIDENTIAL” information in their Bids which is confidential to their business. This may include proprietary information, trade secrets, or commercial or financially sensitive information.
- 20.3 The original and all copies of the Bid shall be typed or written in indelible ink and shall be signed by a person duly authorized to sign on behalf of the Bidder. This authorization shall consist of a written confirmation **as specified in the BDS** and shall be attached to the Bid. The name and position held by each person signing the authorization must be typed or printed below the signature. All pages of the Bid where entries or amendments have been made shall be signed or initialed by the person signing the Bid.
- 20.4 In case the Bidder is a JV, the Bid shall be signed by an authorized representative of the JV on behalf of the JV, and so as to be legally binding on all the members as evidenced by a power of attorney signed by their legally authorized representatives.
- 20.5 Any inter-lineation, erasures, or overwriting shall be valid only if they are signed or initialed by the person signing the Bid.

D. Submission of Bids

21. Sealing and Marking of Bids

- 21.1 The Bidder shall deliver the Bid in two separate, sealed **envelopes** (the Technical Part and the Financial Part). These two envelopes shall be enclosed in a sealed outer envelope marked “ORIGINAL BID”.
- 21.2 In addition, the Bidder shall submit copies of the Bid in the number specified **in the BDS**. Copies of the Technical Part shall be placed in a separate sealed envelope marked “COPIES: TECHNICAL PART”. Copies of the Financial Part shall be placed in a separate sealed envelope marked “COPIES: FINANCIAL PART”. The Bidder shall place both of these envelopes in a separate, sealed outer envelope

marked “BID COPIES”. In the event of any discrepancy between the original and the copies, the original shall prevail. If alternative Bids are permitted in accordance with ITB 13, the alternative Bids shall be submitted as follows: the original of the alternative Bid Technical Part shall be placed in a sealed envelope marked “ALTERNATIVE BID – TECHNICAL PART” and the Financial Part shall be placed in a sealed envelope marked “ALTERNATIVE BID – FINANCIAL PART” and these two separate sealed envelopes then enclosed within a sealed outer envelope marked “ALTERNATIVE BID – ORIGINAL”, the copies of the alternative Bid will be placed in separate sealed envelopes marked “ALTERNATIVE BID – COPIES OF TECHNICAL PART”, and “ALTERNATIVE BID – COPIES OF FINANCIAL PART” and enclosed in a separate sealed outer envelope marked “ALTERNATIVE BID - COPIES”.

- 21.3 The envelopes marked “ORIGINAL BID” and “BID COPIES” (and, if appropriate, a third envelope marked “ALTERNATIVE BID”) shall be enclosed in a separate sealed outer envelope for submission to the Purchaser.
- 21.4 All inner and outer envelopes, shall:
- (a) bear the name and address of the Bidder;
 - (b) be addressed to the Purchaser in accordance with ITB 22.1;
 - (c) bear the specific identification of this Bidding process indicated in ITB 1.1; and
 - (d) bear a warning not to open before the time and date for Bid opening.
- 21.5 If all envelopes are not sealed and marked as required, the Purchaser will assume no responsibility for the misplacement or premature opening of the Bid.

22. Deadline for Submission of Bids

- 22.1. Bids must be received by the Purchaser at the address and no later than the date and time specified **in the BDS**. When so specified **in the BDS**, Bidders shall have the option of submitting their Bids electronically. Bidders submitting Bids

electronically shall follow the electronic Bid submission procedures specified **in the BDS**.

- 22.2. The Purchaser may, at its discretion, extend the deadline for the submission of Bids by amending the bidding document in accordance with ITB 8, in which case all rights and obligations of the Purchaser and Bidders previously subject to the deadline shall thereafter be subject to the deadline as extended.

23. Late Bids

- 23.1. The Purchaser shall not consider any Bid that arrives after the deadline for submission of Bids, in accordance with ITB 22. Any Bid received by the Purchaser after the deadline for submission of Bids shall be declared late, rejected, and returned unopened to the Bidder.

24. Withdrawal, Substitution, and Modification of Bids

- 24.1. A Bidder may withdraw, substitute, or modify its Bid after it has been submitted by sending a written notice, duly signed by an authorized representative, and shall include a copy of the authorization (the power of attorney) in accordance with ITB 20.3, (except that withdrawal notices do not require copies). The corresponding substitution or modification of the Bid must accompany the respective written notice. All notices must be:
- (a) prepared and submitted in accordance with ITB 20 and ITB 21 (except that withdrawal notices do not require copies), and in addition, the respective envelopes shall be clearly marked “WITHDRAWAL,” “SUBSTITUTION,” or “MODIFICATION;” and
 - (b) received by the Purchaser prior to the deadline prescribed for submission of Bids, in accordance with ITB 22.
- 24.2. Bids requested to be withdrawn in accordance with ITB 24.1 shall be returned unopened to the Bidders.
- 24.3. No Bid may be withdrawn, substituted, or modified in the interval between the deadline for submission of Bids and the expiration of the period of Bid validity specified by the Bidder on the Letter of Bid -Technical Part and repeated in

the Letter of Bid - Financial Part, or any extension thereof.

E. Public Opening of Technical Parts of Bids

25. Public Opening of Technical Parts of Bids

- 25.1. Except as in the cases specified in ITB 23 and ITB 24.2, the Purchaser shall, at this Bid opening, publicly open and read out, in accordance with this ITB, all bids received by the deadline at the date, time and place specified **in the BDS** in the presence of Bidders' designated representatives and anyone who chooses to attend. Any specific electronic Bid opening procedures required if electronic Bidding is permitted in accordance with ITB 22.1, shall be as specified **in the BDS**.
- 25.2. First, the written notice of withdrawal in the envelopes marked "WITHDRAWAL" shall be opened and read out and the envelope with the corresponding Bid shall not be opened, but returned to the Bidder. If the withdrawal envelope does not contain a copy of the "power of attorney" confirming the signature as a person duly authorized to sign on behalf of the Bidder, the corresponding Bid will be opened. No Bid withdrawal shall be permitted unless the corresponding withdrawal notice contains a valid authorization to request the withdrawal and is read out at Bid opening.
- 25.3. Next, envelopes marked "SUBSTITUTION" shall be opened and read out and exchanged with the corresponding Bid being substituted, and the substituted Bid shall not be opened, but returned to the Bidder. No Bid substitution shall be permitted unless the corresponding substitution notice contains a valid authorization to request the substitution and is read out at Bid opening.
- 25.4. Next, envelopes marked "MODIFICATION" shall be opened and read out with the corresponding Bid. No Bid modification shall be permitted unless the corresponding modification notice contains a valid authorization to request the modification and is read out at Bid opening. Only Bids that are opened and read out at Bid opening shall be considered further.

- 25.5. Next, all other envelopes marked “TECHNICAL PART” shall be opened one at a time. All envelopes marked “FINANCIAL PART” shall remain sealed, and kept by the Purchaser in safe custody until they are opened, at a later public opening, following the evaluation of the Technical Part of the Bids. On opening the envelopes marked “TECHNICAL PART” the Purchaser shall read out: the name of the Bidder and whether there is a modification; and Alternative Bid the presence or absence of a Bid Security, if required and any other details as the Purchaser may consider appropriate.
- 25.6. Only Technical Parts of Bids and Alternative Bid - Technical Parts that are read out at Bid opening shall be considered further in the evaluation. The Letter of Bid – Technical Part and the separate sealed envelope marked “FINANCIAL PART” are to be initialed by representatives of the Purchaser attending Bid opening in the manner specified **in the BDS.**
- 25.7. At the Bid opening the Purchaser shall neither discuss the merits of any Bid nor reject any Bid (except for late Bids, in accordance with ITB 23.1).
- 25.8. Following the opening of the Technical Parts of the Bid the Purchaser shall prepare a record that shall include, as a minimum:
- (a) the name of the Bidder and whether there is a withdrawal, substitution, or modification;
 - (b) the presence or absence of a duly sealed envelope marked “FINANCIAL PART”;
 - (c) the presence or absence of a Bid Security or Bid-Securing Declaration; and
 - (d) if applicable, any Alternative Bid - Technical Part;
- 25.9. The Bidders’ representatives who are present shall be requested to sign the record. The omission of a Bidder’s signature on the record shall not invalidate the contents and effect of the record. A copy of the record shall be distributed to all Bidders.

F. Evaluation of Bids - General Provisions

26. Confidentiality

- 26.1 Information relating to the evaluation of the Technical Part shall not be disclosed to Bidders or any other persons not officially concerned with the Bidding process until the notification of evaluation of the Technical Part in accordance with ITB 33. Information relating to the evaluation of Financial Part, the evaluation of combined Technical Part and Financial Part, and recommendation of contract award shall not be disclosed to Bidders or any other persons not officially concerned with the RFB process until the Notification of Intention to Award the Contract is transmitted to Bidders in accordance with ITB 43.
- 26.2 Any effort by a Bidder to influence the Purchaser in the evaluation or contract award decisions may result in the rejection of its Bid.
- 26.3 Notwithstanding ITB 26.2, from the time of Bid opening to the time of Contract Award, if any Bidder wishes to contact the Purchaser on any matter related to the Bidding process, it should do so in writing.

27. Clarification of Bids

- 27.1 To assist in the examination, evaluation, comparison of the Bids, and qualification of the Bidders, the Purchaser may, at its discretion, ask any Bidder for a clarification of its Bid. Any clarification submitted by a Bidder in respect to its Bid and that is not in response to a request by the Purchaser shall not be considered. The Purchaser's request for clarification and the response shall be in writing. No change, including any voluntary increase or decrease, in the prices or substance of the Bid shall be sought, offered, or permitted, except to confirm the correction of arithmetic errors discovered by the Purchaser in the Evaluation of the Bids, in accordance with ITB 35.
- 27.2 If a Bidder does not provide clarifications of its Bid by the date and time set in the Purchaser's request for clarification, its Bid may be rejected.

28. Deviations, Reservations, and Omissions

- 28.1 During the evaluation of Bids, the following definitions apply:

- (a) “Deviation” is a departure from the requirements specified in the bidding document;
 - (b) “Reservation” is the setting of limiting conditions or withholding from complete acceptance of the requirements specified in the bidding document; and
- 28.2 “Omission” is the failure to submit part or all of the information or documentation required in the bidding document.
- 29. Nonconformities, Errors and Omissions**
 - 29.1 Provided that a Bid is substantially responsive, the Purchaser may waive any nonconformities in the Bid.
 - 29.2 Provided that a Bid is substantially responsive, the Purchaser may request that the Bidder submit the necessary information or documentation, within a reasonable period of time, to rectify nonmaterial nonconformities or omissions in the Bid related to documentation requirements. Such omission shall not be related to any aspect of the price of the Bid. Failure of the Bidder to comply with the request may result in the rejection of its Bid.

G. Evaluation of Technical Parts of Bids

- 30. Evaluation of Technical Parts**
 - 30.1 In evaluating the Technical Parts of each Bid, the Purchaser shall use the criteria and methodologies listed in ITB 31, ITB 32, the BDS, if applicable, and Section III, Evaluation and Qualification Criteria. No other evaluation criteria or methodologies shall be permitted.
- 31. Determination of Responsiveness**
 - 31.1 The Purchaser’s determination of a Bid’s responsiveness is to be based on the contents of the Bid itself, as defined in ITB 11. A substantially responsive Bid is one that meets the requirements of the bidding document without material deviation, reservation, or omission. A material deviation, reservation, or omission is one that:
 - (a) if accepted, would:

- (i) affect in any substantial way the scope, quality, or performance of the Goods and Related Services specified in the Contract; or
 - (ii) limit in any substantial way, inconsistent with the bidding document, the Purchaser's rights or the Bidder's obligations under the Contract; or
- (b) if rectified, would unfairly affect the competitive position of other Bidders presenting substantially responsive Bids.

31.2 The Purchaser shall examine the technical aspects of the Bid submitted in accordance with ITB 16 and ITB 17, in particular, to confirm that all requirements of Section VII, Schedule of Requirements have been met without any material deviation or reservation, or omission.

31.3 If a Bid is not substantially responsive to the requirements of bidding document, it shall be rejected by the Purchaser and may not subsequently be made responsive by correction of the material deviation, reservation, or omission.

32. Qualification of the Bidders and Detailed Evaluation of the Technical Part

32.1 The Purchaser shall determine, to its satisfaction, whether all eligible Bidders, whose Bids have been determined to be substantially responsive to the bidding document, meet the Qualification Criteria specified in Section III, Evaluation and Qualification Criteria.

32.2 The determination shall be based upon an examination of the documentary evidence of the Bidder's qualifications submitted by the Bidder, pursuant to ITB 17. The determination shall not take into consideration the qualifications of other firms such as the Bidder's subsidiaries, parent entities, affiliates, subcontractors (other than specialized subcontractors if permitted in the bidding document), or any other firm different from the Bidder.

32.3 Prior to Contract award, the Purchaser will verify that the successful Bidder (including each member of a JV) is not disqualified by the Bank due to noncompliance with contractual SEA/SH

prevention and response obligations. The Purchaser will conduct the same verification for each subcontractor proposed by the successful Bidder. If any proposed subcontractor does not meet the requirement, the Purchaser will require the Bidder to propose a replacement subcontractor.

- 32.4 Only substantially responsive bids submitted by eligible and qualified bidders shall proceed to the detailed technical evaluation to assess adequacy of the Technical Part followed by evaluation applying technical factors/subfactors and corresponding scores and weightings as specified in the BDS.

H. Notification of Evaluation of Technical Parts and Public Opening of Financial Parts of Bids

33. Notification of Evaluation of Technical Parts and Public Opening of Financial Parts

- 33.1 Following the completion of the evaluation of the Technical Parts of the Bids, and the Bank has issued its no objection (if applicable), the Purchaser shall notify in writing those Bidders who have failed to meet the Qualification Criteria and/or whose Bids were considered non-responsive to the requirements in the bidding document, advising them of the following information:

- (a) the grounds on which their Technical Part of Bid failed to meet the requirements of the bidding document;
- (b) their envelope marked “FINANCIAL PART” will be returned to them unopened after the completion of the bid evaluation process and the signing of the Contract;
- (c) notify them of the date, time and location of the public opening of the envelopes marked “FINANCIAL PART”.

- 33.2 The Purchaser shall, simultaneously, notify in writing those Bidders whose Technical Parts have been evaluated as substantially responsive to the bidding document and met the Qualification Criteria, advising them of the following information:

- (a) their Bid has been evaluated as substantially responsive to the bidding

document and met the Qualification Criteria; and

- (b) their envelope marked “FINANCIAL PART” will be opened at the public opening of Financial Parts;
- (c) notify them of the date, time and location of the public opening of the envelopes marked “FINANCIAL PART”.

- 33.3 The opening date shall be not less than ten (10) Business Days from the date of notification of the results of the technical evaluation, specified in ITB 33.1 and 33.2. However, if the Purchaser receives a complaint on the results of the technical evaluation within the ten (10) Business Days, the opening date shall be subject to ITB 50.1. The Financial Part of the Bid shall be opened publicly in the presence of Bidders’ designated representatives and anyone who chooses to attend.
- 33.4 At this public opening the Financial Parts will be opened by the Purchaser in the presence of Bidders, or their designated representatives and anyone else who chooses to attend. Bidders who met the Qualification Criteria and whose Bids were evaluated as substantially responsive will have their envelopes marked “FINANCIAL PART” opened at the second public opening. Each of these envelopes marked “FINANCIAL PART” shall be inspected to confirm that they have remained sealed and unopened. These envelopes shall then be opened by the Purchaser. The Purchaser shall read out the names of each Bidder, the technical score and the total Bid prices, per lot (contract) if applicable, including any discounts and Alternative Bid - Financial Part, and any other details as the Purchaser may consider appropriate.
- 33.5 Only envelopes of Financial Part of Bids, Financial Parts of Alternative Bids and discounts that are opened and read out at Bid opening shall be considered further for evaluation. The Letter of Bid - Financial Part and the Price Schedules are to be initialed by a representative of the Purchaser attending the Bid opening in the manner specified **in the BDS**.

- 33.6 The Purchaser shall neither discuss the merits of any Bid nor reject any envelopes marked “FINANCIAL PART”.
- 33.7 The Purchaser shall prepare a record of the Financial Part of the Bid opening that shall include, as a minimum:
- (a) the name of the Bidder whose Financial Part was opened;
 - (b) the Bid price, per lot (contract) if applicable, including any discounts,
 - (c) if applicable, any Alternative Bid - Financial Part.
- 33.8 The Bidders whose envelopes marked ‘FINANCIAL PART’ have been opened or their representatives who are present shall be requested to sign the record. The omission of a Bidder’s signature on the record shall not invalidate the contents and effect of the record. A copy of the record shall be distributed to all Bidders.

I. Evaluation of Financial Parts of Bids

34. Evaluation of Financial Parts

- 34.1 Provided that a Bid is substantially responsive, the Purchaser shall rectify quantifiable nonmaterial nonconformities related to the Bid Price. To this effect, the Bid Price shall be adjusted, for comparison purposes only, to reflect the price of a missing or non-conforming item or component, by adding the average price of the item or component quoted by substantially responsive Bidders. If the price of the item or component cannot be derived from the price of other substantially responsive Bids, the Purchaser shall use its best estimate.
- 34.2 To evaluate the Financial Part of each Bid, the Purchaser shall consider the following:
- (a) evaluation will be done for Items or Lots (contracts), as specified **in the BDS**; and the Bid Price as quoted in accordance with ITB 14;
 - (b) price adjustment for correction of arithmetic errors in accordance with ITB 35.1;

- (c) price adjustment due to discounts offered in accordance with ITB 14.4;
 - (d) converting the amount resulting from applying (a) to (c) above, if relevant, to a single currency in accordance with ITB 36;
 - (e) price adjustment due to quantifiable nonmaterial nonconformities in accordance with ITB 34.1; and
 - (f) the additional evaluation factors specified in Section III, Evaluation and Qualification Criteria.
- 34.3 The estimated effect of the price adjustment provisions of the Conditions of Contract, applied over the period of execution of the Contract, shall not be taken into account in Bid evaluation.
- 34.4 If this bidding document allows Bidders to quote separate prices for different lots (contracts), each lot will be evaluated separately to determine the Most Advantageous Bid using the methodology specified in Section III, Evaluation and Qualification Criteria. **Discounts that are conditional on the award of more than one lot or slice shall not be considered for Bid evaluation.**
- 34.5 The Purchaser's evaluation of a Bid will exclude and not take into account:
- (a) in the case of Goods manufactured in the Purchaser's Country, sales and other similar taxes, which will be payable on the goods if a contract is awarded to the Bidder;
 - (b) in the case of Goods manufactured outside the Purchaser's Country, already imported or to be imported, customs duties and other import taxes levied on the imported Good, sales and other similar taxes, which will be payable on the Goods if the contract is awarded to the Bidder;
 - (c) any allowance for price adjustment during the period of execution of the contract, if provided in the Bid.
- 34.6 The Purchaser's evaluation of a Bid may require the consideration of other factors, in addition to the Bid price quoted in accordance with ITB 14.

These factors may be related to the characteristics, performance, and terms and conditions of purchase of the Goods and Related Services. The effect of the factors selected, if any, shall be expressed in monetary terms to facilitate comparison of Bids, unless otherwise specified **in the BDS** from amongst those set out in Section III, Evaluation and Qualification Criteria. The criteria and methodologies to be used shall be as specified in ITB 34.2 (f).

35. Correction of Arithmetic Errors

35.1 In evaluating the Financial Part of each Bid, the Purchaser shall correct arithmetic errors on the following basis:

- (a) if there is a discrepancy between the unit price and the line item total that is obtained by multiplying the unit price by the quantity, the unit price shall prevail and the line item total shall be corrected, unless in the opinion of the Purchaser there is an obvious misplacement of the decimal point in the unit price, in which case the line item total as quoted shall govern and the unit price shall be corrected;
- (b) if there is an error in a total corresponding to the addition or subtraction of subtotals, the subtotals shall prevail and the total shall be corrected; and
- (c) if there is a discrepancy between words and figures, the amount in words shall prevail, unless the amount expressed in words is related to an arithmetic error, in which case the amount in figures shall prevail subject to (a) and (b) above.

35.2 Bidders shall be requested to accept correction of arithmetic errors. Failure to accept the correction in accordance with ITB 35.1, shall result in the rejection of the Bid.

36. Conversion to Single Currency

36.1 For evaluation and comparison purposes, the currency(ies) of the Bids shall be converted in a single currency as specified **in the BDS**.

- 37. Margin of Preference** 37.1 Unless otherwise specified **in the BDS**, a margin of preference shall not apply.
- 38. Comparison of Financial Parts** 38.1 The Purchaser shall compare the evaluated costs of the Bids to determine the Bid that has the lowest evaluated cost. The comparison shall be on the basis of CIP (place of final destination) prices for imported goods and EXW prices, plus cost of inland transportation and insurance to place of destination, for goods manufactured within the Borrower's country, together with prices for any required installation, training, commissioning and other services. The evaluation of prices shall not take into account custom duties and other taxes levied on imported goods quoted CIP and sales and similar taxes levied in connection with the sale or delivery of goods.
- 39. Abnormally Low Bids** 39.1 An Abnormally Low Bid is one where the Bid price, in combination with other elements of the Bid, appears so low that it raises material concerns with the Purchaser as to the capability of the Bidder to perform the Contract for the offered Bid Price.
- 39.2 In the event of identification of a potentially Abnormally Low Bid, the Purchaser shall seek written clarification from the Bidder, including a detailed price analyses of its Bid price in relation to the subject matter of the contract, scope, delivery schedule, allocation of risks and responsibilities and any other requirements of the bidding document.
- 39.3 After evaluation of the price analyses, in the event that the Purchaser determines that the Bidder has failed to demonstrate its capability to perform the contract for the offered Bid price, the Purchaser shall reject the Bid.

J. Evaluation of Combined Technical and Financial Parts, Most Advantageous Bid and Notification of Intention to Award

- 40. Evaluation of combined Technical and Financial Parts** 40.1 The Purchaser's evaluation of responsive Bids will take into account technical factors, in addition to cost factors in accordance with Section III

Evaluation and Qualification Criteria. The weight to be assigned for the Technical factors and cost is specified **in the BDS**. The Purchaser will rank the Bids based on the evaluated Bid score (B).

- 40.2 The Purchaser will determine the Most Advantageous Bid. The Most Advantageous Bid is the Bid of the Bidder that meets the Qualification Criteria and whose Bid has been determined to be substantially responsive to the Bidding document and is the Bid with the highest combined technical and financial score.

41. Purchaser's Right to Accept Any Bid, and to Reject Any or All Bids

- 41.1 The Purchaser reserves the right to accept or reject any Bid, and to annul the Bidding process and reject all Bids at any time prior to Contract Award, without thereby incurring any liability to Bidders. In case of annulment, all Bids submitted and specifically, Bid securities, shall be promptly returned to the Bidders.

42. Standstill Period

- 42.1 The Contract shall not be awarded earlier than the expiry of the Standstill Period. The Standstill Period shall be ten (10) Business Days unless extended in accordance with ITB 47. The Standstill Period commences the day after the date the Purchaser has transmitted to each Bidder the Notification of Intention to Award the Contract. Where only one Bid is submitted, or if this contract is in response to an emergency situation recognized by the Bank, the Standstill Period shall not apply.

43. Notification of Intention to Award

- 43.1 The Purchaser shall send to each Bidder (that has not already been notified that it has been unsuccessful) the Notification of Intention to Award the Contract to the successful Bidder. The Notification of Intention to Award shall contain, at a minimum, the following information:
- (a) the name and address of the Bidder submitting the successful Bid;
 - (b) the Contract price of the successful Bid;
 - (c) the total combined score of the successful Bidder;

- (d) the names of all Bidders who submitted Bids, and their Bid prices as readout, and as evaluated and technical scores;
- (e) a statement of the reason(s) the Bid (of the unsuccessful Bidder to whom the notification is addressed) was unsuccessful;
- (f) the expiry date of the Standstill Period;
- (g) instructions on how to request a debriefing and/or submit a complaint during the standstill period.

K. Award of Contract

44. Award Criteria

- 44.1 Subject to ITB 41, the Purchaser shall award the Contract to the successful Bidder. This is the Bidder whose Bid has been determined to be the Most Advantageous Bid as specified in ITB 40.

45. Purchaser's Right to Vary Quantities at Time of Award

- 45.1 At the time the Contract is awarded, the Purchaser reserves the right to increase or decrease the quantity of Goods and Related Services originally specified in Section VII, Schedule of Requirements, provided this does not exceed the percentages **specified in the BDS**, and without any change in the unit prices or other terms and conditions of the Bid and the bidding document.

46. Notification of Award

- 46.1 Prior to the date of expiry of the Bid validity and upon expiry of the Standstill Period, specified in ITB 42.1 or any extension thereof, and upon satisfactorily addressing any complaint that has been filed within the Standstill Period, the Purchaser shall notify the successful Bidder, in writing, that its Bid has been accepted. The notification of award (hereinafter and in the Contract Forms called the "Letter of Acceptance") shall specify the sum that the Purchaser will pay the Supplier in consideration of the execution of the Contract (hereinafter and in the Conditions of Contract and Contract Forms called "the Contract Price").
- 46.2 Within ten (10) Business Days after the date of transmission of the Letter of Acceptance, the Purchaser shall publish the Contract Award

Notice which shall contain, at a minimum, the following information:

- (a) name and address of the Purchaser;
- (b) name and reference number of the contract being awarded, and the selection method used;
- (c) names of all Bidders that submitted Bids, and their Bid prices as read out at Bid opening, and as evaluated;
- (d) names of all Bidders whose Bids were rejected either as nonresponsive or as not meeting qualification criteria, or were not evaluated, with the reasons therefor;
- (e) the name of the successful Bidder, the final total contract price, the contract duration and a summary of its scope; and
- (f) successful Bidder's Beneficial Ownership Disclosure Form.

46.3 The Contract Award Notice shall be published on the Purchaser's website with free access if available, or in at least one newspaper of national circulation in the Purchaser's Country, or in the official gazette.

46.4 Until a formal Contract is prepared and executed, the Letter of Acceptance shall constitute a binding Contract.

47. Debriefing by the Purchaser

47.1 On receipt of the Purchaser's Notification of Intention to Award referred to in ITB 43.1, an unsuccessful Bidder has three (3) Business Days to make a written request to the Purchaser for a debriefing. The Purchaser shall provide a debriefing to all unsuccessful Bidders whose request is received within this deadline.

47.2 Where a request for debriefing is received within the deadline, the Purchaser shall provide a debriefing within five (5) Business Days, unless the Purchaser decides, for justifiable reasons, to provide the debriefing outside this timeframe. In that case, the standstill period shall automatically be extended until five (5) Business Days after such debriefing is provided. If more than one debriefing is so delayed, the standstill period

shall not end earlier than five (5) Business Days after the last debriefing takes place. The Purchaser shall promptly inform, by the quickest means available, all Bidders of the extended standstill period

- 47.3 Where a request for debriefing is received by the Purchaser later than the three (3) Business Day deadline, the Purchaser should provide the debriefing as soon as practicable, and normally no later than fifteen (15) Business Days from the date of publication of Public Notice of Award of contract. Requests for debriefing received outside the three (3) day deadline shall not lead to extension of the standstill period.
- 47.4 Debriefings of unsuccessful Bidders may be done in writing or verbally. The Bidders shall bear their own costs of attending such a debriefing meeting.

48. Signing of Contract

- 48.1 The Purchaser shall send to the successful Bidder the Letter of Acceptance including the Contract Agreement, and a request to submit the Beneficial Ownership Disclosure Form providing additional information on its beneficial ownership. The Beneficial Ownership Disclosure Form shall be submitted within eight (8) Business Days of receiving this request.
- 48.2 The successful Bidder shall sign, date and return to the Purchaser, the Contract Agreement within twenty-eight (28) days of its receipt.
- 48.3 Notwithstanding ITB 48.2 above, in case signing of the Contract Agreement is prevented by any export restrictions attributable to the Purchaser, to the country of the Purchaser, or to the use of the products/goods, systems or services to be supplied, where such export restrictions arise from trade regulations from a country supplying those products/goods, systems or services, the Bidder shall not be bound by its Bid, always provided however, that the Bidder can demonstrate to the satisfaction of the Purchaser and of the Bank that signing of the Contract Agreement has not been prevented by any lack of diligence on the part of the Bidder in completing any formalities, including applying for permits, authorizations and licenses

necessary for the export of the products/goods, systems or services under the terms of the Contract.

49. Performance Security

- 49.1 Within twenty-eight (28) days of the receipt of the Letter of Acceptance from the Purchaser, the successful Bidder, if required, shall furnish the Performance Security in accordance with the GCC 18 using for that purpose the Performance Security Form included in Section X, Contract Forms, or another Form acceptable to the Purchaser. If the Performance Security furnished by the successful Bidder is in the form of a bond, it shall be issued by a bonding or insurance company that has been determined by the successful Bidder to be acceptable to the Purchaser. A foreign institution providing a bond shall have a correspondent financial institution located in the Purchaser's Country, unless the Purchaser has agreed in writing that a correspondent financial institution is not required.
- 49.2 Failure of the successful Bidder to submit the above-mentioned Performance Security or sign the Contract shall constitute sufficient grounds for the annulment of the award and forfeiture of the Bid Security. In that event the Purchaser may award the Contract to the Bidder offering the Most Advantageous Bid.

50. Procurement Related Complaint

- 50.1 The procedures for making a Procurement-related Complaint are as specified in the BDS.

Section II - Bid Data Sheet (BDS)

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

ITB Reference	A. General
ITB 1.1	The reference number of the Request for Bids (RFB) is : GDAP/Comp2.1.1 - GH-MOC DTI-509838-GO-RFB. The Purchaser is: Government of the Republic of Ghana represented by Ministry of Communication, Digital Technology and Innovations The name of the RFB is: National Data Center Refresh and Upgrade The number and identification of lots (contracts) comprising this RFB is: One (1) Lot
ITB 1.2(a)	Electronic-Procurement System The Purchaser shall use the following electronic-procurement system to manage this Bidding process: Not Applicable The electronic-procurement system shall be used to manage the following aspects of the Bidding process: Not Applicable
ITB 2.1	The Borrower is: Government of the Republic of Ghana represented by Ministry of Communication, Digital Technology and Innovations. Loan or Financing Agreement amount: US\$100 Million The name of the Project is: Ghana Digital Accelerated Project (GDAP)
ITB 4.1	Maximum number of members in the Joint Venture (JV) shall be: Three (3)
ITB 4.5	A list of debarred firms and individuals is available on the Bank's external website: http://www.worldbank.org/debarr .
	B. Contents of Bidding Document
ITB 7.1	For <u>Clarification of Bid purposes</u> only, the Purchaser's address is: The Chief Director

	Attention: Project Coordinator Ministry of Communication, Digital Technology and Innovation GDAP Project Fifth Floor, Rooms 38/39 Ministry of Communications Building Diouf Street, Ridge, Accra, Ghana Digital Address: GA-079-0539 Electronic mail address: pcu.gdap@moc.gov.gh; Requests for clarification should be received by the Employer no later than: 21 calendar days prior to bid submission deadline. Web page: www.moc.gov.gh;
	C. Preparation of Bids
ITB 10.1	The language of the Bid is: English. All correspondence exchange shall be in English language. Language for translation of supporting documents and printed literature is English
ITB 11.2 (i) & 11.3 (d)	The Bidder shall submit the following additional documents in its Bid: Code of Conduct for Supplier's Personnel (ES) The Proposer shall submit its Code of Conduct that will apply to the Supplier's Personnel (as defined in GCC Clause 1.1) employed in the execution of the Contract at the Project Site/s to ensure compliance with the Supplier's Environmental and/or Social obligations under the Contract, as applicable. The Proposer shall use for this purpose the Code of Conduct form provided in Section IV. No substantial modifications shall be made to this form, except that the Proposer may introduce additional requirements, including as necessary to take into account specific Contract issues/risks. Management Strategies and Implementation Plans (MSIP) to manage the (ES) risks The Bidder shall submit Management Strategies and Implementation Plans (MSIPs) to manage the key Environmental, Social, Health and Safety risks associated with the supply, delivery, installation, replacement, dismantling,

	testing, commissioning, training and maintenance activities under the Contract. In addition to the general MSIPs required under this bidding document, the Bidder shall prepare site-specific MSIP annexes for the Accra and Kumasi Data Centres, considering the live-operational nature of both facilities, the sensitive institutional settings within which the facilities are located, and the site-specific ESS issues identified during the ESS site screening. The site-specific MSIPs shall clearly distinguish measures applicable to the Accra Data Centre and the Kumasi Data Centre. At a minimum, the Bidder shall submit MSIPs covering the following: • Site-Specific Contractor Environmental and Social Management Plan (C-ESMP) • Occupational Health, Safety and Labour Management Plan • Permit-to-Work and Lock-Out/Tag-Out Plan • Business Continuity and Live Data Centre Works Plan • E-waste, Battery and Hazardous Waste Management Plan • General Waste and Housekeeping Management Plan • Pollution Prevention and Hazardous Materials Management Plan • Fire Safety and Emergency Preparedness Plan • Resource Efficiency, Energy Performance and Climate Resilience Plan • Traffic, Access, Delivery and Pedestrian Safety Plan • Site Logistics, Staging and Material Movement Plan • Raised Floor, Floor Protection and Hidden Services Plan • Elevator Retrofit and Heavy Equipment Movement Method Statement • Drainage, Water Ingress and Flood/Stormwater Management Plan • Vegetation, Pest and Reptile Control Plan, particularly for the Kumasi Data Centre • Stakeholder Engagement and Communication Addendum • SEA/SH/GBV Prevention and Worker Code of Conduct Plan • Security, Visitor Control and Restricted Area Access Plan • ESHS Implementation, Monitoring and Reporting Plan The final site-specific MSIPs and method statements shall be submitted by the successful Supplier for review and clearance by the Purchaser prior to mobilisation and before any physical installation, dismantling, replacement, intrusive inspection, raised-floor works, electrical isolation, UPS/battery handling, fire system interface, cooling system interface, elevator retrofit, heavy equipment movement, e-waste removal or other site activity with potential Environmental, Social, Health and Safety implications.
ITB 13.1	Alternative Bids (Technical and Financial Parts) shall not be considered.

ITB 14.5	The prices quoted by the Bidder shall not be subject to adjustment during the performance of the Contract.
ITB 14.6	Prices quoted for the contract shall correspond at least to 100% percent of the items specified in the contract.
ITB 14.7	The Incoterms edition is: 2020 Prices for Goods supplied from outside the Purchaser's country shall be quoted on a DDP (Project Site) basis , including all transportation, insurance, import clearance, duties, taxes, and associated costs in the Purchaser's country.
ITB 14.8 (a)(iii), (b)(ii) and (c)(v)	Destination (Project Site): National Data Center (Primary in Accra and Secondary in Kumasi)
ITB 14.8 (b)(i)	Place of Destination: Primary Data Center in Accra and Secondary Data Center in Kumasi Place of destination as per Incoterms used
ITB 15.1	The Bidder is required to quote in the currency of the Purchaser's Country. the portion of the Bid price that corresponds to expenditures incurred in that currency.
ITB 16.4	Period of time the Goods are expected to be functioning (for the purpose of spare parts): six (6) years
ITB 17.2 (a)	Manufacturer's authorization is required .
ITB 17.2 (b)	After sales service is: required
ITB 18.1	The Bid shall be valid until: 11th December 2026
ITB 18.3 (a)	The Bid price shall be adjusted by the following factor(s): Not Applicable
ITB 19.1	A Bid Security shall be required. US\$200,000.00 in Bank Guarantee format or US\$600,000.00 for Insurance Bond, and shall be valid until 11th January 2027 . A Bid-Securing Declaration shall not be required.
ITB 19.3 (d)	Other types of acceptable securities: Not Applicable
ITB 19.9	If the Bidder performs any of the actions prescribed in subparagraphs ITB 19.9 (a) or (b), the Borrower will declare the Bidder ineligible to be

	awarded contracts by the Purchaser for a period of years starting from the date the Bidder performs any of the actions. Not Applicable
ITB 20.3	The written confirmation of authorization to sign on behalf of the Bidder shall consist of: A Signed Power of Attorney
	D. Submission of Bids
ITB 21.2	In addition to the original of the Bid, the number of copies is: One original and Four (4) hard copies plus a searchable pdf file on a USB flash memory drive
ITB 22.1	For <u>Bid submission purposes</u> only, the Purchaser's address is: The Chief Director Attention: Project Coordinator Ministry of Communication, Digital Technology and Innovations GDAP Project Conference Room 6th Floor Ministry of Communication, Digital Technology and Innovations Building, Abdul Diouf Street, Ridge, Accra Ghana Digital Address: GA-079-0539 The deadline for Proposal submission is: Date: 13th August 2026 Time: 10:00 GMT. Bidders shall not have the option of submitting their Bids electronically. The electronic bidding submission procedures shall be: Not Applicable
	E. Public Opening of Technical Parts of Bids
ITB 25.1	The Bid opening shall take place at: Street Address: Ministry of Communication, Digital Technology and Innovation Building, Abdul Diouf Street, near Kofi Annan ICTCenter for Excellence 6th Floor, Conference Room

	Accra Ghana Date: 13th August 2026 Time: 10:00 GMT The electronic Bid opening procedures shall be: Not Applicable																		
ITB 25.6	The Letter of Bid - Technical Part and the sealed envelope marked “Second Envelope - Financial Part” shall be initialed by three (3) representatives of the Purchaser conducting Bid opening. Each Bid shall be initialed by all representatives and shall be numbered																		
G. Evaluation of Technical Parts of Bids																			
ITB 32.4	The weighting to be given for Rated Criteria (including technical and non-price factors) is: 80% The technical factors (and sub factors if any), which for purposes of this document carry the same meaning as Rated Criteria, and the corresponding scores out of 100% are: <table border="1"> <thead> <tr> <th>Category</th><th>Weight %</th></tr> </thead> <tbody> <tr> <td>Relevant Vendor Experience</td><td>10</td></tr> <tr> <td>Proposed Technical Solution</td><td>35</td></tr> <tr> <td>Technical Equipment Specifications</td><td>15</td></tr> <tr> <td>Project Approach & Methodology</td><td>10</td></tr> <tr> <td>Qualification & Experience of Key Staff</td><td>15</td></tr> <tr> <td>Operations & Maintenance</td><td>10</td></tr> <tr> <td>Training and Capacity Building</td><td>5</td></tr> <tr> <td>Total</td><td>100</td></tr> </tbody> </table>	Category	Weight %	Relevant Vendor Experience	10	Proposed Technical Solution	35	Technical Equipment Specifications	15	Project Approach & Methodology	10	Qualification & Experience of Key Staff	15	Operations & Maintenance	10	Training and Capacity Building	5	Total	100
Category	Weight %																		
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Project Approach & Methodology	10																		
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Operations & Maintenance	10																		
Training and Capacity Building	5																		
Total	100																		
The number of points to be assigned to each of the Key Staff positions shall be determined considering the following three sub-criteria and relevant percentage weights. <table border="1"> <thead> <tr> <th>Sub-criteria</th><th>% Weight</th></tr> </thead> <tbody> <tr> <td>1) General qualification (general education, training, and member of a professional body)</td><td>20%</td></tr> <tr> <td>2) Adequacy for the Assignment (relevant training, and total working experience in years in the sector/ Similar Assignments)</td><td>70%</td></tr> <tr> <td>3) Relevant experience in the region (working conditions, fluency in local language and similar environment)</td><td>10%</td></tr> </tbody> </table> The minimum Technical score (St) required to pass is: 80%		Sub-criteria	% Weight	1) General qualification (general education, training, and member of a professional body)	20%	2) Adequacy for the Assignment (relevant training, and total working experience in years in the sector/ Similar Assignments)	70%	3) Relevant experience in the region (working conditions, fluency in local language and similar environment)	10%										
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H. Notification of Evaluation of Technical Parts and Public Opening of Financial Parts of Bids	
ITB 33.5	The Letter of Bid – Financial Part and the Price Schedules shall be initialed by Three (3) representatives of the Purchaser conducting Bid opening. Each Financial Part of Bid shall be initialed by all representatives and shall be numbered, any modification to the unit or total price shall be initialed by the Representative of the Purchaser.
	I. Evaluation of Financial Part of Bids
ITB 34.2(a)	Evaluation will be done for all items in the <i>contracts</i> <i>“Bids will be evaluated for each item, and the Contract will comprise the item(s) awarded to the successful Bidder”.</i>
ITB 34.6	The adjustments shall be determined using the following criteria, from amongst those set out in Section III, Evaluation and Qualification Criteria: (a) Deviation in Delivery schedule: No (b) Deviation in payment schedule: No (c) the cost of major replacement component, mandatory spare parts, and service: No (d) the availability in the Purchaser’s Country of spare parts and after-sales services for the equipment offered in the Bid: No (e) Life cycle costs: the costs during the life of the goods or equipment: No (f) the performance and productivity of the equipment offered: No
ITB 36.1	The currency that shall be used for Bid evaluation and comparison purposes to convert at the selling exchange rate all Bid prices expressed in various currencies into a single currency is: Not Applicable The source of exchange rate shall be: Not Applicable The date for the exchange rate shall be Not Applicable Bid prices shall be quoted entirely in Purchaser’s currency, i.e. Ghana Cedis.
ITB 37.1	A margin of domestic preference shall not apply.
ITB 38.1	The Purchaser shall compare the evaluated costs of the Bids to determine the Bid that has the lowest evaluated cost. The comparison shall be on the

	basis of DDP, In addition to shipping costs, the seller is obligated to arrange for import clearance, tax payment, and import duty. The evaluation of prices shall take into account custom duties and other taxes levied on imported goods quoted DDP and sales and similar taxes levied in connection with the sale or delivery of goods.
J. Evaluation of Combined Technical and Financial Parts and Most Advantageous Bid	
ITB 40.1	The weight to be given for cost is: 20%
	J. Award of Contract
ITB 45.1	The maximum percentage by which quantities may be increased is: 20% The maximum percentage by which quantities may be decreased is: 20%
ITB 50.1	The procedures for making a Procurement-related Complaint are detailed in the “Procurement Regulations for IPF Borrowers (Annex III).” If a Bidder wishes to make a Procurement-related Complaint, the Bidder should submit its complaint following these procedures, in writing (by the quickest means available, that is either by email or fax), to: For the attention: Chief Director Address: Ministry of Communication, Digital Technology and Innovations GDAP Project 5th Floor, Room 38 Ministry of Communication, Digital Technology and Innovations Building Abdul Diouf Street, Ridge, Accra-Ghana Digital Address: GA-079-0539 Email address: pcu.gdap@moc.gov.gh; A copy of the complaint can be sent for the Bank’s information and monitoring to: pprocurementcomplaints@worldbank.org In summary, a Procurement-related Complaint may challenge any of the following: 1. the terms of the Bidding Documents; 2. the Purchaser’s decision to exclude a Bidder from the procurement process prior to the award of contract; and 3. the Purchaser’s decision to award the contract.

Section III - Evaluation and Qualification Criteria

This Section contains the criteria that the Purchaser shall use to evaluate Bids and qualify the Bidders. No other factors, methods or criteria shall be used other than specified in this bidding document.

TECHNICAL PART

1. Qualification

Qualification Criteria (ITB 32.1)

The Purchaser shall assess each Bid against the following Qualification Criteria. Requirements not included in the text below shall not be used in the evaluation of the Bidder's qualifications.

- (a) **Financial Capability:** The Bidder shall submit audited financial statements or, if not required by the law of the Bidder's country, other financial statements acceptable to the Purchaser, for the last **five (5)** years prior to bid submission deadline, demonstrating the current soundness of the Bidder's financial position. For a joint venture, this requirement shall be met by each member.
- (b) **Specific Experience:** The Bidder shall demonstrate that it has successfully completed at least **two (2)** contracts within the last **five (5)** years prior to bid submission deadline, each with a value of at least **US\$8 million** that has been successfully and substantially completed and that are similar in nature and complexity to the Goods and Related Services under the Contract. For a joint venture, this requirement may be met by all members combined.
- (c) **Documentary Evidence:** The Bidder shall furnish documentary evidence to demonstrate that the Goods it offers meet the following usage requirement: As specified in Part II of the Supply Requirements.
- (d) **Manufacturing experience and Technical Capacity:** For the items under the Contract that the bidder is a manufacturer, the Bidder shall furnish documentary evidence to demonstrate that:
 - (i) it has manufactured goods of similar nature and complexity for at least Ten (10) years, prior to the bid submission deadline; and
 - (ii) its annual production capacity of goods of similar nature and complexity for each of the last **five (5)** years prior to the bid submission deadline, is at least **ten (10)** times the quantities specified under the contract.
- (e) **Manufacturer's authorization:** A Bidder who does not manufacture an item/s where a manufacturer authorization is required in accordance with BDS ITB 17.2 (a), the Bidder shall provide evidence of being duly authorized by a manufacturer (Manufacturer's Authorization Form, Section IV, Bidding Forms), meeting the criteria in (d) (i) and (ii) above, to supply the Goods;
- (f) A bidder who does not manufacture an item/s where a manufacturer authorization is not required in accordance with BDS ITB 17.2 (a), the bidder shall submit documentation on, its status as a supplier, to the satisfaction of the Purchaser

At the time of Contract Award, the Bidder (including each subcontractor proposed by the Bidder) shall not be subject to disqualification by the Bank for non-compliance with SEA/ SH obligations.

2. Technical Evaluation (ITB 32.4)

Assessment of adequacy of Technical Part with the requirements as provided for in **Part 2 – Supply Requirements** of this document.

The Rated Criteria (including technical and non-price factors, and sub factors if any), to be evaluated, and the scores to be given to each factor and sub factor are specified in the BDS ITB 32.4.

Technical Part Scoring Methodology

Score (of the total score for the factor/subfactor as applicable)	Description	Remarks
0	Required feature is absent; no relevant information to demonstrate how the requirement is met	Absent
1	Required feature present with deficiencies such as insufficient or information that lacks clarity	Poor
2	Sufficient information to demonstrate how the requirement will be met	Fair
3	Sufficient information to demonstrate that the requirement will be marginally exceeded	Good
4	Sufficient information that significantly exceeds the requirement/bid contributes to significant value addition	Excellent

Item No.	TECHNICAL & COMMERCIAL EVALUATION CRITERIA		Points		
			Importance Weighting (1-3)	Rating (0-4)	Sub-total
1	Relevant Vendor Experience (10%)	Evaluation criteria			
		General experience in large-scale ICT and Telecom Infrastructure	2		
		Specific experience delivering Data Centre upgrade/expansion projects	3		
		Specific experience in delivering Network Modernization (Core, DCN, Spine-Leaf) and Integration	2		
		Experience in Cloud / AI Infrastructure deployment	2		
		Experience in Government or large-scale public sector projects	1		
2	Proposed Technical Solution (35%)	Evaluation criteria			
		Overall Proposed Solution Architecture (End-to-End Integration)	3		
		Data Centre Facility Upgrade Design (Power, Cooling, DCIM, Security)	3		
		Proposed Solution for the Facility Refresh (Accra and Kumasi)	3		
		Network Architecture (Spine-Leaf, High Availability, Scalability) - Accra and Kumasi	3		
		AI Cloud Platform Architecture (Compute, Storage, AI Network)	3		
		Storage Architecture for AI Workloads (Performance, Scalability)	3		
		Security Architecture (Network, AI, Data Protection, Zero Trust readiness)	3		
		Proposed Solution for the environmental and Monitoring	2		
		Integration with Existing Infrastructure (Accra & Kumasi DCs)	3		
		Business Continuity & Redundancy Design (2N, N+1, Failover)	3		
		Energy Efficiency & Sustainability Approach	3		
		Compliance with International Standards (ISO, IDCA, Tier standards)	3		
3	Technical Equipment Specifications (15%)	Evaluation criteria			
		Accra Data Center Facility Refresh Equipment	3		
		Kumasi Data Center Facility Refresh Equipment	2		
		Accra Data Center EOX Network Equipment	3		
		Kumasi Data Center EOX Network Equipment	2		
		Accra Data Center Facility Upgrade Equipment	2		
		AI Cloud Infrastructure Equipment	3		
4	Project Approach & Methodology (10%)	Evaluation criteria			
		Proposed Implementation Methodology (Survey → Design → Delivery → Commissioning)	2		
		Detailed Workplan and Delivery Timeline	1		

		Migration & Transition Strategy (EOX replacement without downtime)	2		
		Risk Management Plan	1		
		Testing, Commissioning & Quality Assurance Plan	1		
		Environmental & Safety Compliance Approach	2		
		Documentation	1		
5	Qualification & Experience of Key Staff (15%)	Evaluation criteria			
		Project Manager / Lead (Large-scale DC or Cloud projects)	2		
		Data Centre Infrastructure Specialist (Power, Cooling, DCIM)	2		
		Network Solution Architect (Spine-Leaf, DCN, AI Network)	2		
		Cloud / AI Infrastructure Specialist	2		
		Network Security Specialist	2		
		Quality Assurance Specialist	2		
		Environmental, Social, Health and Safety (ESHS) Specialist	2		
		Resident Engineers (Certifications: CCIE, HCIE, etc.)	1		
6	Operations & Maintenance (10%)	Evaluation criteria			
		Overall Operations & Maintenance Strategy (3-year support)	2		
		SLA Compliance (Response time, uptime, TAC support)	2		
		Resident Engineer Support Model	2		
		Monitoring & DCIM Integration for O&M	2		
		Performance Reporting & Analytics Capability	2		
7	Training and Capacity Building (5%)	Evaluation criteria			
		OEM Training Program (Training plan, Hands-on, Lab, Certification)	2		
		Knowledge Transfer to NITA Team	2		
		Availability of Training Facilities / Platforms	1		
	TOTAL		100		0

The score for each sub- factor (i) within a factor (j) will be combined with the scores of sub- factors in *the* same factor as a weighted sum to form the Factor Technical Score using the following formula:

$$S_j = \sum_{i=1}^k t_{ji} * w_{ji}$$

where:

t_{ji} = the technical score for sub- factor “i” in factor “j”,

w_{ji} = the weight of sub- factor “i” in factor “j”,

k = the number of scored sub-factors in factor “j”, and

$$\sum_{i=1}^k w_{ji} = 1$$

The Factor Technical Scores will be combined in a weighted sum to form the total Technical Bid Score using the following formula:

$$T \equiv \sum_{j=1}^n S_j * W_j$$

where:

S_j = the Factor Technical Score of factor “j”,

W_j = the weight of factor “j” as specified **in the BDS**,

n = the number of Factors, and

$$\sum_{j=1}^n W_j = 1$$

FINANCIAL PART

1. Margin of Preference (ITB 37) – Not Applicable

If the Bidding Data Sheet so specifies, the Purchaser will grant a margin of preference to goods manufactured in the Purchaser's country for the purpose of Bid comparison, in accordance with the procedures outlined in subsequent paragraphs.

Substantially responsive Bids will be classified in one of three groups, as follows:

- (a) **Group A:** Bids offering goods manufactured in the Purchaser's Country, for which (i) labor, raw materials, and components from within the Purchaser's Country account for more than thirty (30) percent of the EXW price; and (ii) the production facility in which they will be manufactured or assembled has been engaged in manufacturing or assembling such goods at least since the date of Bid submission.
- (b) **Group B:** All other Bids offering Goods manufactured in the Purchaser's Country.
- (c) **Group C:** Bids offering Goods manufactured outside the Purchaser's Country that have been already imported or that will be imported.

To facilitate this classification by the Purchaser, the Bidder shall complete whichever version of the Price Schedule furnished in the bidding document is appropriate provided, however, that the completion of an incorrect version of the Price Schedule by the Bidder shall not result in rejection of its Bid, but merely in the Purchaser's reclassification of the Bid into its appropriate Bid group.

The Purchaser will first review the Bids to confirm the appropriateness of, and to modify as necessary, the Bid group classification to which Bidders assigned their Bids in preparing their Bid Forms and Price Schedules.

Following the combined evaluation procedure described below, the Bids in each group will then be compared to determine the Most Advantageous Bid in that group. The Most Advantageous Bid from each group shall then be compared with each other and if as a result of this comparison a Bid from Group A or Group B is the Most Advantageous, it shall be selected for the award.

If as a result of the preceding comparison, a Bid from Group C is the Most Advantageous Bid, all Bids from Group C shall be further compared with the Most Advantageous Bid from Group A after adding to the evaluated price of goods offered in each Bid from Group C, for the purpose of this further comparison only, an amount equal to 15% (fifteen percent) of the respective CIP Bid price for goods to be imported and already imported goods. Both prices shall include unconditional discounts and be corrected for arithmetical errors. If the Bid from Group A is the Most Advantageous, it shall be selected for award. If not, the Most Advantageous Bid from Group C shall be selected.

2. Evaluation Criteria (ITB 34.6)

The Purchaser shall use the criteria and methodologies listed in this Section to evaluate the Financial Part.

The Purchaser's evaluation of the Financial Part may take into account, in addition to the Bid Price, one or more of the following factors as **specified in BDS ITB 34.6**, using the following criteria and methodologies.

- (a) Delivery schedule. (As per Incoterms specified in the BDS)

The Goods specified in the List of Goods are required to be delivered within the acceptable time range (after the earliest and before the final date, both dates inclusive) specified in Section VII, Schedule of Requirements. No credit will be given to deliveries before the earliest date, and Bids offering delivery after the final date shall be treated as nonresponsive.

- (b) Deviation in payment schedule. **Not Applicable**
- (c) Cost of major replacement components, mandatory spare parts, and service. **Not Applicable**
- (d) Availability in the Purchaser's Country of spare parts and after sales services for equipment offered in the Bid.

An adjustment equal to the cost to the Purchaser of establishing the minimum service facilities and parts inventories if quoted separately, shall be added to the Bid price, for evaluation purposes only.

- (e) Life Cycle Cost. **Not Applicable**
- (f) Performance and productivity of the equipment. **Not Applicable.**
- (g) Specific additional criteria. **Not Applicable**

Combined Evaluation

The Purchaser will evaluate and compare the Bids that have been determined to be substantially responsive.

The Purchaser's evaluation of responsive Bids will take into account technical factors, in addition to cost factors.

An Evaluated Bid Score (B) will be calculated for each responsive Bid using the following formula (for comparison in percentages), which permits a comprehensive assessment of the Bid price and the technical merits of each Bid:

$$B \equiv \frac{C_{low}}{C} * X * 100 + \frac{T}{T_{high}} * (1 - X) * 100$$

where

C = Evaluated Bid Price

C_{low} = the lowest of all Evaluated Bid Prices among responsive Bids

T = the total Technical Score awarded to the Bid

T_{high} = the Technical Score achieved by the Bid that was scored best among all responsive Bids

X = weight for the Cost as specified in the BDS

The Bid with the best evaluated Bid Score (B) among responsive Bids shall be the Most Advantageous Bid provided the Bidder is qualified to perform the Contract.

Multiple Contracts (ITB 34.4). Not Applicable

Alternative Bids (ITB 13.1). Not Applicable

Section IV - Bidding Forms

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Letter of Bid – Technical Part

INSTRUCTIONS TO BIDDERS: DELETE THIS BOX ONCE YOU HAVE COMPLETED THE DOCUMENT

Place this Letter of Bid in the first envelope “TECHNICAL PART”.

The Bidder must prepare the Letter of Bid on stationery with its letterhead clearly showing the Bidder’s complete name and business address.

Note: All italicized text in black font is to help Bidders in preparing this form and Bidders shall delete it from the final document.

Date of this Bid submission: *[insert date (as day, month and year) of Bid submission]*

RFB No.: *[insert number of Bidding process]*

Request for Bid No.: *[insert identification]*

Alternative No.: *[insert identification No if this is a Bid for an alternative]*

To: *[insert complete name of Purchaser]*

We, the undersigned Bidder, hereby submit our Bid, in two parts, namely:

- (a) the Technical Part, and
- (b) the Financial Part.

In submitting our Bid we make the following declarations:

- (a) **No reservations:** We have examined and have no reservations to the bidding document, including addenda issued in accordance with Instructions to Bidders (ITB 8);
- (b) **Eligibility:** We meet the eligibility requirements and have no conflict of interest in accordance with ITB 4;
- (c) **Bid/Proposal-Securing Declaration:** We have not been suspended nor declared ineligible by the Purchaser based on execution of a Bid Securing Declaration or Proposal Securing Declaration in the Purchaser’s country in accordance with ITB 4.7;
- (d) **Sexual Exploitation and Abuse (SEA) and/or Sexual Harassment (SH):** *[select the appropriate option from (i) to (iii) below and delete the others. In case of JV members and/or subcontractors, indicate the status of disqualification by the Bank of each JV member and/or subcontractor].*

We, including any of our subcontractors:

- (i) *[have not been subject to disqualification by the Bank for non-compliance with SEA/ SH obligations.]*
- (ii) *[are subject to disqualification by the Bank for non-compliance with SEA/ SH obligations.]*

- (iii) [had been subject to disqualification by the Bank for non-compliance with SEA/SH obligations, and were removed from the disqualification list. An arbitral award on the disqualification case has been made in our favor.]
- (e) **Conformity:** We offer to supply in conformity with the bidding document and in accordance with the Delivery Schedules specified in the Schedule of Requirements the following Goods: *[insert a brief description of the Goods and Related Services]*;
- (f) **Bid Validity:** Our Bid shall be valid until *[insert day, month and year in accordance with ITB 18.1]*, and it shall remain binding upon us and may be accepted at any time before the expiration of that period;
- (g) **Performance Security:** If our Bid is accepted, we commit to obtain a performance security in accordance with the bidding document;
- (h) **One Bid per Bidder:** We are not submitting any other Bid(s) as an individual Bidder, and we are not participating in any other bid(s) as a Joint Venture member or as a subcontractor, and meet the requirements of ITB 4.3, other than Alternative Bids submitted in accordance with ITB 13;
- (i) **Suspension and Debarment:** We, along with any of our subcontractors, suppliers, consultants, manufacturers, or service providers for any part of the contract, are not subject to, and not controlled by any entity or individual that is subject to, a temporary suspension or a debarment imposed by the World Bank Group or a debarment imposed by the World Bank Group in accordance with the Agreement for Mutual Enforcement of Debarment Decisions between the World Bank and other development banks. Further, we are not ineligible under the Purchaser's country laws or official regulations or pursuant to a decision of the United Nations Security Council;
- (j) **State-owned enterprise or institution:** *[select the appropriate option and delete the other] [We are not a state-owned enterprise or institution] / [We are a state-owned enterprise or institution but meet the requirements of ITB 4.6];*
- (k) **Binding Contract:** We understand that this Bid, together with your written acceptance thereof included in your Letter of Acceptance, shall constitute a binding contract between us, until a formal contract is prepared and executed;
- (l) **Not Bound to Accept:** We understand that you are not bound to accept the lowest evaluated cost Bid, the Most Advantageous Bid or any other Bid that you may receive; and
- (m) **Fraud and Corruption:** We hereby certify that we have taken steps to ensure that no person acting for us, or on our behalf, engages in any type of Fraud and Corruption.

Name of the Bidder: **[insert complete name of Bidder]*

Name of the person duly authorized to sign the Bid on behalf of the Bidder: *** [insert complete name of person duly authorized to sign the Bid]*

Title of the person signing the Bid: *[insert complete title of the person signing the Bid]*

Signature of the person named above: *[insert signature of person whose name and capacity are shown above]*

Date signed *[insert date of signing]* **day of** *[insert month]*, *[insert year]*

*: In the case of the Bid submitted by a Joint Venture specify the name of the Joint Venture as Bidder.

**: Person signing the Bid shall have the power of attorney given by the Bidder. The power of attorney shall be attached with the Bid Schedules.

Technical Part

The technical bid shall include all relevant information required to evaluate the technical Part in accordance with the requirements.

To establish the conformity of the Goods and Related Services to the RFB document, the Bidder shall furnish the documentary evidence that the Goods conform to the technical specifications and standards, including any essential technical and performance characteristics specified in Section VII, Schedule of Requirements. Any required functional guarantees shall also be provided. The attached forms/format may support the Bidder to organize information required to present its technical bid.

The documentary evidence may be in the form of literature, drawings or data, and shall consist of a detailed item by item description of the essential technical and performance characteristics of the Goods and Related Services, demonstrating substantial responsiveness of the Goods and Related Services to the technical specification, and if applicable, a statement of deviations and exceptions to the provisions of the Section VII, Schedule of Requirements.

In the interest of timely bid evaluation and contract award, Bidders are encouraged not to overload the supporting materials with documents that do not directly address the Purchaser's requirements.

The Bidder shall also furnish a list giving full particulars, including available sources and current prices of spare parts, special tools, etc., necessary for the proper and continuing functioning of the Goods during the period specified in the BDS following commencement of the use of the goods by the Purchaser.

Standards for workmanship, process, material, and equipment, as well as references to brand names or catalogue numbers specified by the Purchaser in the Schedule of Requirements, are intended to be descriptive only and not restrictive. The Bidder may offer other standards of quality, brand names, and/or catalogue numbers, provided that it demonstrates, to the Purchaser's satisfaction, that the substitutions ensure substantial equivalence or are superior to those specified in the Section VII, Schedule of Requirements.

If the contract has been assessed to present potential or actual cyber security risks, the technical bid must include proposed cyber security risks management plan.

If there are assessed supply chain risks, the technical bid must include proposed supply chain risk management plan.

The Manufacture's Authorizations shall be included in accordance with ITB BDS 17.2 (a) and the attached Manufacturer's Authorization form.

Technical Bid Checklist

Technical. Requirement No. _	Technical Requirement: <i>[insert: description of requirement]</i>
Bidder’s technical bid/ compliance:	
Bidder’s cross references to supporting information in the Technical Bid:	

Functional Guarantees

(to be used as applicable)

The Bidder shall copy in the left column of the table below; the identification of each functional guarantee required in the Specification and in the right column, provides the corresponding value for each functional guarantee of the proposed Goods.

Required Functional Guarantee	Value of Functional Guarantee of the Goods
1.	
2.	
3.	
...	

Manufacturer's Authorization

*[The Bidder shall require the Manufacturer to fill in this Form in accordance with the instructions indicated. This letter of authorization should be on the letterhead of the Manufacturer and should be signed by a person with the proper authority to sign documents that are binding on the Manufacturer. The Bidder shall include it in its Bid, if so indicated in the **BDS**.]*

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

RFB No.: *[insert number of RFB process]*

Alternative No.: *[insert identification No if this is a Bid for an alternative]*

To: *[insert complete name of Purchaser]*

WHEREAS

We *[insert complete name of Manufacturer]*, who are official manufacturers of *[insert type of goods manufactured]*, having factories at *[insert full address of Manufacturer's factories]*, do hereby authorize *[insert complete name of Bidder]* to submit a Bid the purpose of which is to provide the following Goods, manufactured by us *[insert name and or brief description of the Goods]*, and to subsequently negotiate and sign the Contract.

We hereby extend our full guarantee and warranty in accordance with Clause 28 of the General Conditions of Contract, with respect to the Goods offered by the above firm.

We confirm that we do not engage or employ forced labor or persons subject to trafficking or child labor, in accordance with Clause 14 of the General Conditions of Contract.

Signed: *[insert signature(s) of authorized representative(s) of the Manufacturer]*

Name: *[insert complete name(s) of authorized representative(s) of the Manufacturer]*

Title: *[insert title]*

Dated on _____ day of _____, _____ *[insert date of signing]*

Bidder Information Form

[The Bidder shall fill in this Form in accordance with the instructions indicated below. No alterations to its format shall be permitted and no substitutions shall be accepted.]

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

RFB No.: *[insert number of Bidding process]*

Alternative No.: *[insert identification No if this is a Bid for an alternative]*

Page _____ of _____ pages

1. Bidder's Name <i>[insert Bidder's legal name]</i>
2. In case of JV, legal name of each member : <i>[insert legal name of each member in JV]</i>
3. Bidder's actual or intended country of registration: <i>[insert actual or intended country of registration]</i>
4. Bidder's year of registration: <i>[insert Bidder's year of registration]</i>
5. Bidder's Address in country of registration: <i>[insert Bidder's legal address in country of registration]</i>
6. Bidder's Authorized Representative Information Name: <i>[insert Authorized Representative's name]</i> Address: <i>[insert Authorized Representative's Address]</i> Telephone/Fax numbers: <i>[insert Authorized Representative's telephone/fax numbers]</i> Email Address: <i>[insert Authorized Representative's email address]</i>
7. Attached are copies of original documents of <i>[check the box(es) of the attached original documents]</i> ☐ Articles of Incorporation (or equivalent documents of constitution or association), and/or documents of registration of the legal entity named above, in accordance with ITB 4.4. ☐ In case of JV, letter of intent to form JV or JV agreement, in accordance with ITB 4.1. ☐ In case of state-owned enterprise or institution, in accordance with ITB 4.6 documents establishing: • Legal and financial autonomy • Operation under commercial law • Establishing that the Bidder is not under the supervision of the Purchaser

8. Included are the organizational chart, a list of Board of Directors, and the beneficial ownership. The successful Bidder shall provide additional information on beneficial ownership, using the Beneficial Ownership Disclosure Form.

Bidder's JV Members Information Form

[The Bidder shall fill in this Form in accordance with the instructions indicated below. The following table shall be filled in for the Bidder and for each member of a Joint Venture]].

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

RFB No.: *[insert number of RFB process]*

Alternative No.: *[insert identification No if this is a Bid for an alternative]*

Page _____ of _____ pages

1. Bidder's Name: <i>[insert Bidder's legal name]</i>
2. Bidder's JV Member's name: <i>[insert JV's Member legal name]</i>
3. Bidder's JV Member's country of registration: <i>[insert JV's Member country of registration]</i>
4. Bidder's JV Member's year of registration: <i>[insert JV's Member year of registration]</i>
5. Bidder's JV Member's legal address in country of registration: <i>[insert JV's Member legal address in country of registration]</i>
6. Bidder's JV Member's authorized representative information Name: <i>[insert name of JV's Member authorized representative]</i> Address: <i>[insert address of JV's Member authorized representative]</i> Telephone/Fax numbers: <i>[insert telephone/fax numbers of JV's Member authorized representative]</i> Email Address: <i>[insert email address of JV's Member authorized representative]</i>
7. Attached are copies of original documents of <i>[check the box(es) of the attached original documents]</i> ☐ Articles of Incorporation (or equivalent documents of constitution or association), and/or registration documents of the legal entity named above, in accordance with ITB 4.4. ☐ In case of a state-owned enterprise or institution, documents establishing legal and financial autonomy, operation in accordance with commercial law, and that they are not under the supervision of the Purchaser, in accordance with ITB 4.6.
8. Included are the organizational chart, a list of Board of Directors, and the beneficial ownership. The successful Bidder shall provide additional information on beneficial ownership for each JV member using the Beneficial Ownership Disclosure Form.

Sexual Exploitation and Abuse (SEA) and/or Sexual Harassment Performance Declaration

[The following table shall be filled in by the Bidder, each member of a Joint Venture and each subcontractor proposed by the Bidder]

Bidder's Name: *[insert full name]*

Date: *[insert day, month, year]*

Joint Venture Member's or Subcontractor's Name: *[insert full name]*

RFB No. and title: *[insert RFB number and title]*

Page *[insert page number]* of *[insert total number]* pages

SEA and/or SH Declaration in accordance with Section III, Qualification Criteria, and Requirements
We: ☐ (a) have not been subject to disqualification by the Bank for non-compliance with SEA/ SH obligations ☐ (b) are subject to disqualification by the Bank for non-compliance with SEA/ SH obligations ☐ (c) had been subject to disqualification by the Bank for non-compliance with SEA/ SH obligations, and were removed from the disqualification list. An arbitral award on the disqualification case has been made in our favor.
<i>[If (c) above is applicable, attach evidence of an arbitral award reversing the findings on the issues underlying the disqualification.]</i>

Code of Conduct for Service Provider’s Personnel Form (ES)

Note to the Bidder:

The minimum content of the Code of Conduct form as set out by the Employer shall not be substantially modified. However, the Bidder may add requirements as appropriate, including to take into account Contract-specific issues/risks.

The Bidder shall initial and submit the Code of Conduct form as part of its bid.

Note to the Employer:

The following minimum requirements shall not be modified. The Employer may add additional requirements to address identified issues, informed by relevant environmental and social assessment.

Delete this Box prior to issuance of the bidding documents.

CODE OF CONDUCT FOR SERVICE PROVIDER’S PERSONNEL

We are the Service Provider, [enter name of Service Provider]. We have signed a contract with [enter name of Employer] for [enter description of the Services]. The Services will be carried out at [enter the locations in the Employer’s country where the Services are required, as applicable]. Our contract requires us to implement measures to address environmental and social risks [Note to Employer: depending on the nature of the contract and assessed risks, this may be replaced with social risks], related to the Services.

This Code of Conduct is part of our measures to deal with environmental and social risks [Note to Employer: depending on the nature of the contract and assessed risks, this may be replaced with social risks] related to the Services.

All personnel that we utilize in the execution of the Services, including the staff, labor and other employees of us and each Subcontractor, and any other personnel assisting us in the execution of the Services, are referred to as Service Provider’s Personnel.

This Code of Conduct identifies the behavior that we require from the Service Provider’s Personnel employed for the execution of the Services at the locations in the Employer’s country where the Services are provided.

Our workplace is an environment where unsafe, offensive, abusive or violent behavior will not be tolerated and where all persons should feel comfortable raising issues or concerns without fear of retaliation.

REQUIRED CONDUCT

Service Provider's Personnel employed for the execution of the Services at the locations in the Employer's country where the Services are provided shall:

1. carry out his/her duties competently and diligently;
2. comply with this Code of Conduct and all applicable laws, regulations and other requirements, including requirements to protect the health, safety and well-being of other Service Provider's Personnel and any other person;
3. maintain a safe working environment including by:
 - a. ensuring that workplaces, machinery, equipment and processes under each person's control are safe and without risk to health;
 - b. wearing required personal protective equipment;
 - c. using appropriate measures relating to chemical, physical and biological substances and agents; and
 - d. following applicable emergency operating procedures.
4. follow site-specific Occupational health & safety (OHS) plans, participate in toolbox talks, and report work situations that he/she believes are not safe or healthy and remove himself/herself from a work situation which he/she reasonably believes presents an imminent and serious danger to his/her life or health;
5. treat other people with respect, and not discriminate against specific groups such as women, people with disabilities, migrant workers or children;
6. not engage in any form of sexual harassment including unwelcome sexual advances, requests for sexual favors, and other verbal or physical conduct of a sexual nature with other Service Provider's or Employer's Personnel;
7. not engage in Sexual Exploitation, which means any actual or attempted abuse of position of vulnerability, differential power or trust, for sexual purposes, including, but not limited to, profiting monetarily, socially or politically from the sexual exploitation of another;
8. not engage in any form of gender-based violence (GBV), which includes physical, sexual, psychological, or economic harm or threats thereof, directed at an individual based on their gender or disproportionately affecting individuals of a particular gender
9. not engage in Sexual Abuse, which means the actual or threatened physical intrusion of a sexual nature, whether by force or under unequal or coercive conditions;
10. not engage in any form of sexual activity with individuals under the age of 18, except in case of pre-existing marriage;
11. complete relevant training courses that will be provided related to the environmental and social aspects of the Contract, including on health and safety matters, and Sexual Exploitation and Abuse, and Sexual Harassment (SH);
12. adhere to waste management protocols, ensure safe disposal of e-waste, conserve energy and resources, and prevent pollution;
13. respect local customs, traditions, and norms when engaging with communities;
14. report violations of this Code of Conduct; and
15. not retaliate against any person who reports violations of this Code of Conduct, whether to us or the Employer, or who makes use of applicable grievance

mechanism for Service Provider’s Personnel or the project’s Grievance Redress Mechanism.

RAISING CONCERNS

If any person observes behavior that he/she believes may represent a violation of this Code of Conduct, or that otherwise concerns him/her, he/she should raise the issue promptly. This can be done in either of the following ways:

1. Contact [*enter name of the individual, with relevant experience, designated by the Service provider to handle these matters*] in writing at this address [] or by telephone at [] or in person at []; or
2. Call [] to reach the Service Provider’s hotline (*if any*) and leave a message.

The person’s identity will be kept confidential, unless reporting of allegations is mandated by the country law. Anonymous complaints or allegations may also be submitted and will be given all due and appropriate consideration. We take seriously all reports of possible misconduct and will investigate and take appropriate action. We will provide warm referrals to service providers that may help support the person who experienced the alleged incident, as appropriate.

There will be no retaliation against any person who raises a concern in good faith about any behavior prohibited by this Code of Conduct. Such retaliation would be a violation of this Code of Conduct.

CONSEQUENCES OF VIOLATING THE CODE OF CONDUCT

Any violation of this Code of Conduct by the Service Provider’s Personnel may result in serious consequences, up to and including termination and possible referral to legal authorities.

FOR SERVICE PROVIDER’S PERSONNEL:

I have received a copy of this Code of Conduct written in a language that I comprehend. I understand that if I have any questions about this Code of Conduct, I can contact [*enter name of Service Provider’s contact person(s) with relevant experience*] requesting an explanation.

Name of Service Provider’s Personnel: [insert name]

Signature:

Date: (day month year): _____

Countersignature of authorized representative of the Service Provider:

Signature: _____

Date: (day month year): _____

ATTACHMENT 1: Behaviors constituting SEA and behaviors constituting SH, and GBV

ATTACHMENT 1 TO THE CODE OF CONDUCT FORM**BEHAVIORS CONSTITUTING SEXUAL EXPLOITATION AND ABUSE (SEA)
AND BEHAVIORS CONSTITUTING SEXUAL HARASSMENT (SH)**

The following non-exhaustive list is intended to illustrate types of prohibited behaviors.

1. Examples of sexual exploitation and abuse include, but are not limited to:
 - A Service Provider's Personnel tells a member of the community that he/she can get them jobs related to the work site (e.g. cooking and cleaning) in exchange for sex.
 - A Service Provider's Personnel that is connecting electricity input to households says that he can connect women headed households to the grid in exchange for sex.
 - A Service Provider's Personnel rapes, or otherwise sexually assaults a member of the community.
 - A Service Provider's Personnel denies a person access to the locations where the Services are executed unless he/she performs a sexual favor.
 - A Service Provider's Personnel tells a person applying for employment under the Contract that he/she will only hire him/her if he/she has sex with him/her.
2. Examples of sexual harassment in a work context
 - A Service Provider's Personnel comment on the appearance of another Service Provider's Personnel (either positive or negative) and sexual desirability.
 - When a Service Provider's Personnel complains about comments made by another Service Provider's Personnel on his/her appearance, the other Service Provider's Personnel comment that he/she is "asking for it" because of how he/she dresses.
 - Unwelcome touching of a Service Provider's Personnel or Employer's Personnel by another Service Provider's Personnel.
 - A Service Provider's Personnel tells another Service Provider's Personnel that he/she will get him/her a salary raise, or promotion if he/she sends him/her naked photographs of himself/herself.

(3) Examples of Gender-Based Violence (GBV) in a work context

- Physical violence such as hitting, slapping, choking, or using weapons against an individual based on their gender.
- Sexual violence including coercion, attempted rape, or rape.
- Psychological or emotional abuse, including intimidation, humiliation, threats, or controlling behaviors aimed at restricting an individual's autonomy.
- Economic abuse, such as withholding wages, denying access to resources, or controlling financial decisions as a means of power.
- Any harmful practice or threat thereof that disproportionately affects individuals of a particular gender, including forced labour or denial of employment opportunities/professional promotions

Form of Bid Security

(Bank Guarantee)

[The bank shall fill in this Bank Guarantee Form in accordance with the instructions indicated.]

[Guarantor letterhead or SWIFT identifier code]

Beneficiary: *[Purchaser to insert its name and address]*

RFB No.: *[Purchaser to insert reference number for the Request for Bids]*

Alternative No.: *[Insert identification No if this is a Bid for an alternative]*

Date: *[Insert date of issue]*

BID GUARANTEE No.: *[Insert guarantee reference number]*

Guarantor: *[Insert name and address of place of issue, unless indicated in the letterhead]*

We have been informed that _____ *[insert name of the Bidder, which in the case of a joint venture shall be the name of the joint venture (whether legally constituted or prospective) or the names of all members thereof]* (hereinafter called "the Applicant") has submitted or will submit to the Beneficiary its Bid (hereinafter called "the Bid") for the execution of _____ under Request for Bids No. _____ ("the RFB").

Furthermore, we understand that, according to the Beneficiary's conditions, Bids must be supported by a Bid guarantee.

At the request of the Applicant, we, as Guarantor, hereby irrevocably undertake to pay the Beneficiary any sum or sums not exceeding in total an amount of _____ (_____) upon receipt by us of the Beneficiary's complying demand, supported by the Beneficiary's statement, whether in the demand itself or a separate signed document accompanying or identifying the demand, stating that either the Applicant:

- (a) has withdrawn its Bid prior to the Bid validity expiry date set forth in the Applicant's Letter of Bid, or any extended date provided by the Applicant; or
- (b) having been notified of the acceptance of its Bid by the Beneficiary prior to the expiry date of the Bid validity or any extension thereof provided by the Applicant has failed to:
 - (i) sign the contract agreement, or
 - (ii) furnish the performance security, in accordance with the Instructions to Bidders ("ITB") of the Beneficiary's bidding document.

This guarantee will expire: (a) if the Applicant is the successful Bidder, upon our receipt of copies of the Contract agreement signed by the Applicant and the performance security issued to the Beneficiary in relation to such Contract agreement; or (b) if the Applicant is not the successful Bidder, upon the earlier of (i) our receipt of a copy of the Beneficiary's notification to the Applicant of the results of the Bidding process; or (ii) twenty-eight days after the expiry date of the Bid validity.

Consequently, any demand for payment under this guarantee must be received by us at the office indicated above on or before that date.

This guarantee is subject to the Uniform Rules for Demand Guarantees (URDG) 2010 Revision, ICC Publication No. 758.

[Signature(s)]

Note: All italicized text is for use in preparing this form and shall be deleted from the final product.

Form of Bid Security (Bid Bond)

[The Surety shall fill in this Bid Bond Form in accordance with the instructions indicated.]

BOND NO. _____

BY THIS BOND *[name of Bidder]* as Principal (hereinafter called “the Principal”), and *[name, legal title, and address of surety]*, **authorized to transact business in** *[name of country of Purchaser]*, as Surety (hereinafter called “the Surety”), are held and firmly bound unto *[name of Purchaser]* as Obligee (hereinafter called “the Purchaser”) in the sum of *[amount of Bond]*¹ *[amount in words]*, for the payment of which sum, well and truly to be made, we, the said Principal and Surety, bind ourselves, our successors and assigns, jointly and severally, firmly by these presents.

WHEREAS the Principal has submitted or will submit a written Bid to the Purchaser dated the ____ day of _____, 20__, for the supply of *[name of Contract]* (hereinafter called the “Bid”).

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION is such that if the Principal:

- (a) withdraws its Bid prior to the Bid validity expiry date set forth in the Principal’s Letter of Bid, or any extended date provided by the Principal; or
- (b) having been notified of the acceptance of its Bid by the Purchaser prior to the expiry date of the Bid validity or any extension thereto provided by the Applicant has failed to: (i) execute the Contract agreement; or (ii) furnish the Performance Security, in accordance with the Instructions to Bidders (“ITB”) of the Purchaser’s bidding document.

then the Surety undertakes to immediately pay to the Purchaser up to the above amount upon receipt of the Purchaser’s first written demand, without the Purchaser having to substantiate its demand, provided that in its demand the Purchaser shall state that the demand arises from the occurrence of any of the above events, specifying which event(s) has occurred.

The Surety hereby agrees that its obligation will remain in full force and effect up to and including the date 28 days after the date of expiry of the Bid validity set forth in the Principal’s Letter of Bid or any extension thereto provided by the Principal.

¹ The amount of the Bond shall be denominated in the currency of the Purchaser’s country or the equivalent amount in a freely convertible currency.

IN TESTIMONY WHEREOF, the Principal and the Surety have caused these presents to be executed in their respective names this ____ day of _____ 20__.

Principal: _____ Surety: _____

Apply Corporate Seal (where appropriate)

(Signature)
(Printed name and title)

(Signature)
(Printed name and title)

Form of Bid-Securing Declaration – Not Applicable

[The Bidder shall fill in this Form in accordance with the instructions indicated.]

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

RFB No.: *[number of RFB process]*

Alternative No.: *[insert identification No if this is a Bid for an alternative]*

To: *[complete name of Purchaser]*

We, the undersigned, declare that:

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

We accept that we will automatically be suspended from being eligible for Bidding or submitting proposals in any contract with the Purchaser for the period of time specified in Section II – Bid Data Sheet if we are in breach of our obligation(s) under the Bid conditions, because we:

- (a) have withdrawn our Bid prior to the expiry date of the Bid validity specified in the Letter of Bid or any extended date provided by us; or
- (b) having been notified of the acceptance of our Bid by the Purchaser prior to the expiry date of the Bid validity in the Letter of Bid or any extended date provided by us, (i) fail or refuse to sign the Contract; or (ii) fail or refuse to furnish the Performance Security, if required, in accordance with the ITB.

We understand this Bid Securing Declaration shall expire if we are not the successful Bidder, upon the earlier of (i) our receipt of your notification to us of the name of the successful Bidder; or (ii) twenty-eight days after the expiry date of the Bid validity.

Name of the Bidder* _____

Name of the person duly authorized to sign the Bid on behalf of the Bidder** _____

Title of the person signing the Bid _____

Signature of the person named above _____

Date signed _____ day of _____, _____

*: In the case of the Bid submitted by joint venture specify the name of the Joint Venture as Bidder

**.: Person signing the Bid shall have the power of attorney given by the Bidder attached to the Bid
[Note: In case of a Joint Venture, the Bid-Securing Declaration must be in the name of all members to the Joint Venture that submits the Bid.]

Letter of Bid - Financial Part

INSTRUCTIONS TO BIDDERS: DELETE THIS BOX ONCE YOU HAVE COMPLETED THE DOCUMENT

Place this Letter of Bid - Financial Part in the second envelope marked “FINANCIAL PART”.

The Bidder must prepare the Letter of Bid - Financial Part on stationery with its letterhead clearly showing the Bidder’s complete name and business address.

Note: All italicized text is to help Bidders in preparing this form.

Date of this Bid submission: [insert date (as day, month and year) of Bid submission]

RFB No.: [insert number of bidding process]

Request for Bid No.: [insert identification]

Alternative No.: [insert identification No if this is a Bid for an alternative]

To: [insert complete name of Purchaser]

We, the undersigned Bidder, hereby submit the second part of our Bid, the Financial Part

In submitting our Financial Part we make the following additional declarations:

(a) **Bid Validity:** Our Bid shall be valid until [insert day, month and year in accordance with ITB 18.1], and it shall remain binding upon us and may be accepted at any time before the expiration of that period;

(b) **Total Price:** The total price of our Bid, excluding any discounts offered in item (c) below is:

In case of only one lot, the total price of the Bid is [insert the total price of the bid in words and figures, indicating the various amounts and the respective currencies];

In case of multiple lots, the total price of each lot is [insert the total price of each lot in words and figures, indicating the various amounts and the respective currencies];

In case of multiple lots, total price of all lots (sum of all lots) [insert the total price of all lots in words and figures, indicating the various amounts and the respective currencies];

(c) **Discounts:** The discounts offered and the methodology for their application are:

(i) The discounts offered are: [Specify in detail each discount offered]

- (ii) The exact method of calculations to determine the net price after application of discounts is shown below: *[Specify in detail the method that shall be used to apply the discounts]*;

- (d) **Commissions, gratuities and fees:** We have paid, or will pay the following commissions, gratuities, or fees with respect to the bidding process or execution of the Contract: *[insert complete name of each Recipient, its full address, the reason for which each commission or gratuity was paid and the amount and currency of each such commission or gratuity]*.

Name of Recipient	Address	Reason	Amount

(If none has been paid or is to be paid, indicate “none.”)

- (e) **Binding Contract:** We understand that this Bid, together with your written acceptance thereof included in your Letter of Acceptance, shall constitute a binding contract between us, until a formal contract is prepared and executed.

Name of the Bidder: **[insert complete name of the Bidder]*

Name of the person duly authorized to sign the Bid on behalf of the Bidder: *** [insert complete name of person duly authorized to sign the Bid]*

Title of the person signing the Bid: *[insert complete title of the person signing the Bid]*

Signature of the person named above: *[insert signature of person whose name and capacity are shown above]*

Date signed *[insert date of signing]* **day of** *[insert month]*, *[insert year]*

*: In the case of the Bid submitted by a Joint Venture specify the name of the Joint Venture as Bidder.

**: Person signing the Bid shall have the power of attorney given by the Bidder. The power of attorney shall be attached with the Bid Schedules.

Price Schedule Forms

*[The Bidder shall fill in these Price Schedule Forms in accordance with the instructions indicated. The list of line items in column 1 of the **Price Schedules** shall coincide with the List of Goods and Related Services specified by the Purchaser in the Schedule of Requirements.]*

Price Schedule: Goods Manufactured Outside the Purchaser's Country, to be Imported

(Group C Bids, goods to be imported) Currencies in accordance with ITB 15							Date: _____ RFB No: _____ Alternative No: _____ Page N° _____ of _____	
1	2	3	4	5	6	7	8	9
Line Item N°	Description of Goods	Country of Origin	Delivery Date as defined by Incoterms	Quantity and physical unit	Unit price DDP <i>[insert place of destination]</i> in accordance with ITB 14.8(b)(i)	DDP Price per line item (Col. 5x6)	Price per line item for inland transportation and other services required in the Purchaser's Country to convey the Goods to their final destination specified in BDS	Total Price per Line item (Col. 7+8)
<i>[insert number of the item]</i>	<i>[insert name of good]</i>	<i>[insert country of origin of the Good]</i>	<i>[insert quoted Delivery Date]</i>	<i>[insert number of units to be supplied and name of the physical unit]</i>	<i>[insert unit price DDP per unit]</i>	<i>[insert total DDP price per line item]</i>	<i>[insert the corresponding price per line item]</i>	<i>[insert total price of the line item]</i>
Total Price								

Name of Bidder *[insert complete name of Bidder]* Signature of Bidder *[signature of person signing the Bid]* Date *[Insert Date]*

Price Schedule: Goods Manufactured Outside the Purchaser's Country, already imported*

(Group C Bids, Goods already imported) Currencies in accordance with ITB 15										Date: _____ RFB No: _____ Alternative No: _____ Page N° _____ of _____	
1	2	3	4	5	6	7	8	9	10	11	12
Line Item N°	Description of Goods	Country of Origin	Delivery Date as defined by Incoterms	Quantity and physical unit	Unit price including Custom Duties and Import Taxes paid, in accordance with ITB 14.8(c)(i)	Custom Duties and Import Taxes paid per unit in accordance with ITB 14.8(c)(ii) , [to be supported by documents]	Unit Price net of custom duties and import taxes, in accordance with ITB 14.8 (c) (iii) (Col. 6 minus Col.7)	Price per line item net of Custom Duties and Import Taxes paid, in accordance with ITB 14.8(c)(i) (Col. 5×8)	Price per line item for inland transportation and other services required in the Purchaser's Country to convey the goods to their final destination, as specified in BDS in accordance with ITB 14.8 (c)(v)	Sales and other taxes paid or payable per item if Contract is awarded (in accordance with ITB 14.8(c)(iv)	Total Price per line item (Col. 9+10)
<i>[insert number of the item]</i>	<i>[insert name of Goods]</i>	<i>[insert country of origin of the Good]</i>	<i>[insert quoted Delivery Date]</i>	<i>[insert number of units to be supplied and name of the physical unit]</i>	<i>[insert unit price per unit]</i>	<i>[insert custom duties and taxes paid per unit]</i>	<i>[insert unit price net of custom duties and import taxes]</i>	<i>[insert price per line item net of custom duties and import taxes]</i>	<i>[insert price per line item for inland transportation and other services required in the Purchaser's Country]</i>	<i>[insert sales and other taxes payable per item if Contract is awarded]</i>	<i>[insert total price per line item]</i>
Total Bid Price											

Name of Bidder *[insert complete name of Bidder]* Signature of Bidder *[signature of person signing the Bid]* Date *[insert date]*

* *[For previously imported Goods, the quoted price shall be distinguishable from the original import value of these Goods declared to customs and shall include any rebate or mark-up of the local agent or representative and all local costs except import duties and taxes, which have been and/or have to be paid by the Purchaser. For clarity the Bidders are asked to quote the price including import duties, and additionally to provide the import duties and the price net of import duties which is the difference of those values.]*

Price Schedule: Goods Manufactured in the Purchaser's Country

Purchaser's Country _____		(Group A and B Bids) Currencies in accordance with ITB 15						Date: _____ RFB No: _____ Alternative No: _____ Page N° _____ of _____	
1	2	3	4	5	6	7	8	9	10
Line Item N°	Description of Goods	Delivery Date as defined by Incoterms	Quantity and physical unit	Unit price EXW	Total EXW price per line item (Col. 4×5)	Price per line item for inland transportation and other services required in the Purchaser's Country to convey the Goods to their final destination	Cost of local labor, raw materials and components from with origin in the Purchaser's Country % of Col. 5	Sales and other taxes payable per line item if Contract is awarded (in accordance with ITB 14.8(a)(ii))	Total Price per line item (Col. 6+7)
<i>[insert number of the item]</i>	<i>[insert name of Good]</i>	<i>[insert quoted Delivery Date]</i>	<i>[insert number of units to be supplied and name of the physical unit]</i>	<i>[insert EXW unit price]</i>	<i>[insert total EXW price per line item]</i>	<i>[insert the corresponding price per line item]</i>	<i>[Insert cost of local labor, raw material and components from within the Purchase's country as a % of the EXW price per line item]</i>	<i>[insert sales and other taxes payable per line item if Contract is awarded]</i>	<i>[insert total price per item]</i>
Total Price									

Name of Bidder *[insert complete name of Bidder]* Signature of Bidder *[signature of person signing the Bid]* Date *[insert date]*

Price and Completion Schedule - Related Services

Currencies in accordance with ITB 15					Date: _____ RFB No: _____ Alternative No: _____ Page N° _____ of _____	
1	2	3	4	5	6	7
Service N°	Description of Services (excludes inland transportation and other services required in the Purchaser's Country to convey the goods to their final destination)	Country of Origin	Delivery Date at place of Final destination	Quantity and physical unit	Unit price	Total Price per Service (Col. 5*6 or estimate)
<i>[insert number of the Service]</i>	<i>[insert name of Services]</i>	<i>[insert country of origin of the Services]</i>	<i>[insert delivery date at place of final destination per Service]</i>	<i>[insert number of units to be supplied and name of the physical unit]</i>	<i>[insert unit price per item]</i>	<i>[insert total price per item]</i>
Total Bid Price						

Name of Bidder *[insert complete name of Bidder]* Signature of Bidder *[signature of person signing the Bid]* Date *[insert date]*

Section V - Eligible Countries

Eligibility for the Provision of Goods, Works and Non Consulting Services in Bank-Financed Procurement

In reference to ITB 4.8 and ITB 5.1, for the information of the Bidders, at the present time firms, goods and services from the following countries are excluded from this Bidding process:

Under ITB 4.8 (a) and ITB 5.1: *[insert a list of the countries following approval by the Bank to apply the restriction or state “none”]*.

Under ITB 4.8(b) and ITB 5.1: *[insert a list of the countries following approval by the Bank to apply the restriction or state “none”]*

Section VI - Fraud and Corruption

(Section VI shall not be modified)

1. Purpose

- 1.1 The Bank's Anti-Corruption Guidelines and this annex apply with respect to procurement under Bank Investment Project Financing operations.

2. Requirements

- 2.1 The Bank requires that Borrowers (including beneficiaries of Bank financing); bidders (applicants/proposers), consultants, contractors and suppliers; any sub-contractors, sub-consultants, service providers or suppliers; any agents (whether declared or not); and any of their personnel, observe the highest standard of ethics during the procurement process, selection and contract execution of Bank-financed contracts, and refrain from Fraud and Corruption.

- 2.2 To this end, the Bank:

- a. Defines, for the purposes of this provision, the terms set forth below as follows:

- i. "corrupt practice" is the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence improperly the actions of another party;
- ii. "fraudulent practice" is any act or omission, including misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain financial or other benefit or to avoid an obligation;
- iii. "collusive practice" is an arrangement between two or more parties designed to achieve an improper purpose, including to influence improperly the actions of another party;
- iv. "coercive practice" is impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party;
- v. "obstructive practice" is:
 - (a) deliberately destroying, falsifying, altering, or concealing of evidence material to the investigation or making false statements to investigators in order to materially impede a Bank investigation into allegations of a corrupt, fraudulent, coercive, or collusive practice; and/or threatening, harassing, or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation; or
 - (b) acts intended to materially impede the exercise of the Bank's inspection and audit rights provided for under paragraph 2.2 e. below.

- b. Rejects a proposal for award if the Bank determines that the firm or individual recommended for award, any of its personnel, or its agents, or its sub-consultants, sub-contractors, service providers, suppliers and/ or their employees, has, directly or indirectly, engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices in competing for the contract in question;
- c. In addition to the legal remedies set out in the relevant Legal Agreement, may take other appropriate actions, including declaring misprocurement, if the Bank determines at any time that representatives of the Borrower or of a recipient of any part of the proceeds of the loan engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices during the procurement process, selection and/or execution of the contract in question, without the Borrower having taken timely and appropriate action satisfactory to the Bank to address such practices when they occur, including by failing to inform the Bank in a timely manner at the time they knew of the practices;
- d. Pursuant to the Bank's Anti-Corruption Guidelines, and in accordance with the Bank's prevailing sanctions policies and procedures, may sanction a firm or individual, either indefinitely or for a stated period of time, including by publicly declaring such firm or individual ineligible (i) to be awarded or otherwise benefit from a Bank-financed contract, financially or in any other manner;¹ (ii) to be a nominated² sub-contractor, consultant, manufacturer or supplier, or service provider of an otherwise eligible firm being awarded a Bank-financed contract; and (iii) to receive the proceeds of any loan made by the Bank or otherwise to participate further in the preparation or implementation of any Bank-financed project;
- e. Requires that a clause be included in bidding/request for proposals documents and in contracts financed by a Bank loan, requiring (i) bidders (applicants/proposers), consultants, contractors, and suppliers, and their sub-contractors, sub-consultants, service providers, suppliers, agents, personnel, permit the Bank to inspect³ all accounts, records and other documents relating to the procurement process, selection and/or contract execution, and to have them audited by auditors appointed by the Bank.

¹ For the avoidance of doubt, a sanctioned party's ineligibility to be awarded a contract shall include, without limitation, (i) applying for pre-qualification, expressing interest in a consultancy, and bidding, either directly or as a nominated sub-contractor, nominated consultant, nominated manufacturer or supplier, or nominated service provider, in respect of such contract, and (ii) entering into an addendum or amendment introducing a material modification to any existing contract.

² A nominated sub-contractor, nominated consultant, nominated manufacturer or supplier, or nominated service provider (different names are used depending on the particular bidding document) is one which has been: (i) included by the bidder in its pre-qualification application or bid because it brings specific and critical experience and know-how that allow the bidder to meet the qualification requirements for the particular bid; or (ii) appointed by the Borrower.

³ Inspections in this context usually are investigative (i.e., forensic) in nature. They involve fact-finding activities undertaken by the Bank or persons appointed by the Bank to address specific matters related to investigations/audits, such as evaluating the veracity of an allegation of possible Fraud and Corruption, through the appropriate mechanisms. Such activity includes but is not limited to: accessing and examining a firm's or individual's financial records and information, and making copies thereof as relevant; accessing and examining any other documents, data and information (whether in hard copy or electronic format) deemed relevant for the investigation/audit, and making copies thereof as relevant; interviewing staff and other relevant individuals; performing physical inspections and site visits; and obtaining third party verification of information.

PART 2 – Supply Requirements

Section VII - Schedule of Requirements

Contents

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Notes for Preparing the Schedule of Requirements

The Schedule of Requirements shall be included in the bidding document by the Purchaser, and shall cover, at a minimum, a description of the goods and services to be supplied and the delivery schedule.

The objective of the Schedule of Requirements is to provide sufficient information to enable Bidders to prepare their Bids efficiently and accurately, in particular, the Price Schedule, for which a form is provided in Section IV. In addition, the Schedule of Requirements, together with the Price Schedule, should serve as a basis in the event of quantity variation at the time of award of contract pursuant to ITB 45.1.

The date or period for delivery should be carefully specified, taking into account (a) the implications of delivery terms stipulated in the Instructions to Bidders pursuant to the *Incoterms* rules (i.e., EXW, or CIP, FOB, FCA terms—that “delivery” takes place when goods are delivered **to the carriers**), and (b) the date prescribed herein from which the Bidder’s delivery obligations start (i.e., notice of award, contract signature, opening or confirmation of the letter of credit).

1. List of Goods and Delivery Schedule

Line Item N°	Description of Goods	Quantity	Physical unit	Final (Project Site) Destination as specified in BDS	Delivery (as per Incoterms) Date		
					Earliest Delivery Date – 24 weeks	Latest Delivery Date – 28 weeks	Bidder's offered Delivery date <i>[to be provided by the Bidder]</i>
<i>[insert item No]</i>	<i>[insert description of Goods]</i>	<i>[insert quantity of item to be supplied]</i>	<i>[insert physical unit for the quantity]</i>	<i>[insert place of Delivery]</i>	<i>[insert the number of days following the date of effectiveness of the Contract]</i>	<i>[insert the number of days following the date of effectiveness of the Contract]</i>	<i>[insert the number of days following the date of effectiveness of the Contract]</i>
1	Data Center Refresh						
1.1	Accra Data Center Facility Refresh						
1.11	One 200 KVA Modular UPS for HVAC (VRLA 10 min backup time@200KVA)	1	pcs	Accra DC			
1.12	One 200 KVA Modular UPS for pump (VRLA 10 min backup time@200KVA)	1	pcs	Accra DC			
1.13	200 KVA Modular UPS for Network (VRLA 10 min backup time@200KVA for each side)	2	pcs	Accra DC			
1.14	200 KVA Modular UPS for F3 room (VRLA 10 min backup time@200KVA for each side)	4	pcs	Accra DC			
1.15	200 KVA Modular UPS for F4 room (VRLA 10 min backup time@200KVA for each side)	4	pcs	Accra DC			
1.16	50KW In-room Precision Air-Condition (PAC) for Power Entrance Room	2	pcs	Accra DC			
1.17	50KW In-room Precision Air-Condition (PAC) for Low-voltage Distribution Room	2	pcs	Accra DC			
1.18	50KW In-room Precision Air-Condition (PAC) for UPS Power Room 1	2	pcs	Accra DC			
1.19	50KW In-room Precision Air-Condition (PAC) for UPS Power Room 2	2	pcs	Accra DC			

1. List of Goods and Delivery Schedule

[illegible]

1. List of Goods and Delivery Schedule

Line Item N°	Description of Goods	Quantity	Physical unit	Final (Project Site) Destination as specified in BDS	Delivery (as per Incoterms) Date		
					Earliest Delivery Date – 24 weeks	Latest Delivery Date – 28 weeks	Bidder's offered Delivery date <i>[to be provided by the Bidder]</i>
<i>[insert item No]</i>	<i>[insert description of Goods]</i>	<i>[insert quantity of item to be supplied]</i>	<i>[insert physical unit for the quantity]</i>	<i>[insert place of Delivery]</i>	<i>[insert the number of days following the date of effectiveness of the Contract]</i>	<i>[insert the number of days following the date of effectiveness of the Contract]</i>	<i>[insert the number of days following the date of effectiveness of the Contract]</i>
2.1	In-row Precision Air-Condition (PAC)	24	pcs	Accra DC			
2.2	IT Rack (1200mm*600mm*2200mm) (Including 8 racks of 16kW per rack to support AI computing, 52 normal IT Racks of 6kW and 8 network Racks of 2kW)	68	pcs	Accra DC			
2.3	Aisle system includes all components	2	Set	Accra DC			
2.4	DCIM system for aisle & F5 Room (Includes all hardware and software)	1	Set	Accra DC			
2.5	Integrate with the existing DCIM system.	1	Set	Accra DC			
2.6	AC power distribution cabinet	4	pcs	Accra DC			
2.7	Monitoring System for F5	1	Set	Accra DC			
2.8	Smart R-PDU	136	pcs	Accra DC			
2.9	Fire extinguishing system & fire alarm& detection system for F5 Room	1	Set	Accra DC			
2.10	UPS input distribution panel	2	pcs	Accra DC			
2.11	UPS output distribution panel	2	pcs	Accra DC			
2.12	300 KVA Modular UPS (VRLA 10 min backup time@300KVA)	2	pcs	Accra DC			
2.13	Fingerprint lock for all racks	1	Set	Accra DC			
2.14	Raise floor	1	Set	Accra DC			
2.15	Lighting system of F5 Room	1	Set	Accra DC			

1. List of Goods and Delivery Schedule

Line Item N°	Description of Goods	Quantity	Physical unit	Final (Project Site) Destination as specified in BDS	Delivery (as per Incoterms) Date		
					Earliest Delivery Date – 24 weeks	Latest Delivery Date – 28 weeks	Bidder's offered Delivery date <i>[to be provided by the Bidder]</i>
<i>[insert item No]</i>	<i>[insert description of Goods]</i>	<i>[insert quantity of item to be supplied]</i>	<i>[insert physical unit for the quantity]</i>	<i>[insert place of Delivery]</i>	<i>[insert the number of days following the date of effectiveness of the Contract]</i>	<i>[insert the number of days following the date of effectiveness of the Contract]</i>	<i>[insert the number of days following the date of effectiveness of the Contract]</i>
2.16	3-year maintenance support for system	1	Set	Accra DC			
2.17	Access control system For F5	1	Set	Accra DC			
2.18	Smart screen 138 inch	2	pcs	Accra DC			
2.19	Smart screen 86 inch	10	pcs	Accra DC			
3.0	<i>Replacement of Accra EOX Network Equipment</i>						
3.1	Core Router	2	pcs	Accra DC			
3.2	IGW Router	2	pcs	Accra DC			
3.3	WAN Router	2	pcs	Accra DC			
3.4	WAN Switch for DC Infrastructure	2	pcs	Accra DC			
3.5	Core Switch for DC Infrastructure	2	pcs	Accra DC			
3.6	Border Leaf Switch for DC Infrastructure	2	pcs	Accra DC			
3.7	Spine Switch for DC Infrastructure	2	pcs	Accra DC			
3.8	Data Center Network Controller Platform	1	pcs	Accra DC			
3.9	Network Analyzer Platform	1	pcs	Accra DC			
3.10	WAN Network Controller Platform	1	pcs	Accra DC			
4.0	<i>AI Cloud Infrastructure</i>						
4.1	ECS Server for Cloud Infrastructure	2	pcs	Accra DC			
4.2	AI Inference Server	2	pcs	Accra DC			
4.3	All Flash Storage Infrastructure	2	Set	Accra DC			

1. List of Goods and Delivery Schedule

Line Item N°	Description of Goods	Quantity	Physical unit	Final (Project Site) Destination as specified in BDS	Delivery (as per Incoterms) Date		
					Earliest Delivery Date – 24 weeks	Latest Delivery Date – 28 weeks	Bidder's offered Delivery date <i>[to be provided by the Bidder]</i>
<i>[insert item No]</i>	<i>[insert description of Goods]</i>	<i>[insert quantity of item to be supplied]</i>	<i>[insert physical unit for the quantity]</i>	<i>[insert place of Delivery]</i>	<i>[insert the number of days following the date of effectiveness of the Contract]</i>	<i>[insert the number of days following the date of effectiveness of the Contract]</i>	<i>[insert the number of days following the date of effectiveness of the Contract]</i>
4.4	Cloud Network Server	3	pcs	Accra DC			
4.5	Cloud Management Server	3	pcs	Accra DC			
4.6	Border Leaf for Cloud Infrastructure	2	pcs	Accra DC			
4.7	Firewall for Cloud Infrastructure	2	pcs	Accra DC			
4.8	Spine Switch for Cloud Infrastructure	2	pcs	Accra DC			
4.9	Management Leaf Switch for Cloud Infrastructure	2	pcs	Accra DC			
4.10	Network Leaf Switch for Cloud Infrastructure	2	pcs	Accra DC			
4.11	General Leaf for Cloud Infrastructure	2	pcs	Accra DC			
4.12	BMS Switch for Cloud Infrastructure	2	pcs	Accra DC			
4.13	Computing Leaf Switch for AI Infrastructure	2	pcs	Accra DC			
4.14	AI ROCE Leaf Switch for AI Environment	1	pcs	Accra DC			
5.0	Laptops						
5.1	Network Engineers Laptop	15	pcs	Accra DC			
5.2	System Engineers Laptop	15	pcs	Accra DC			
5.3	General Purpose Laptops	20	pcs	Accra DC			
6.0	Kumasi Data Center Facility Refresh						
6.1	DX Integrated air conditioner for IT and Power Room (container)	1	Set	Kumasi DC			

1. List of Goods and Delivery Schedule

Line Item N°	Description of Goods	Quantity	Physical unit	Final (Project Site) Destination as specified in BDS	Delivery (as per Incoterms) Date		
					Earliest Delivery Date – 24 weeks	Latest Delivery Date – 28 weeks	Bidder's offered Delivery date <i>[to be provided by the Bidder]</i>
<i>[insert item No]</i>	<i>[insert description of Goods]</i>	<i>[insert quantity of item to be supplied]</i>	<i>[insert physical unit for the quantity]</i>	<i>[insert place of Delivery]</i>	<i>[insert the number of days following the date of effectiveness of the Contract]</i>	<i>[insert the number of days following the date of effectiveness of the Contract]</i>	<i>[insert the number of days following the date of effectiveness of the Contract]</i>
6.2	Supporting services such as air ducts and equipment foundation, etc.	1	Set	Kumasi DC			
6.3	200KVA UPS (VRLA 10 min backup time @300KVA)	1	pcs	Kumasi DC			
6.4	3 years maintenance support for UPS	1	set	Kumasi DC			
6.5	Smart R-PDU for IT container	84	pcs	Kumasi DC			
6.6	DCIM system for IT container	1	set	Kumasi DC			
6.7	3 years maintenance support for DCIM and R-PDU system	1	set	Kumasi DC			
7.0	<i>Replacement of Kumasi EOX Network Equipment</i>						
7.1	Core Router	2	pcs	Kumasi DC			
7.2	IGW Router	2	pcs	Kumasi DC			
7.3	WAN Router	2	pcs	Kumasi DC			
7.4	WAN Switch for DC Infrastructure	2	pcs	Kumasi DC			
7.5	Core Switch for DC Infrastructure	2	pcs	Kumasi DC			
7.6	Border Leaf Switch for DC Infrastructure	2	pcs	Kumasi DC			
7.7	Spine Switch for DC Infrastructure	2	pcs	Kumasi DC			

2. List of Related Services and Completion Schedule

Service	Description of Service	Quantity	Physical Unit	Place where Services shall be performed	Final Completion Date(s) of Services
<i>[insert Service No]</i>	<i>[insert description of Related Services]</i>	<i>[insert quantity of items to be supplied]</i>	<i>[insert physical unit for the items]</i>	<i>[insert name of the Place]</i>	<i>[insert required Completion Date(s)]</i>
1	Detailed Survey of the Accra and Kumasi Data Centers	2		Accra and Kumasi DC	
2	Design of Accra and Kumasi DC Refresh Solution	2		Accra and Kumasi	
3	Design of Accra DC Capacity Upgrade Solution	1		Accra	
4	Design of AI Cloud Infrastructure	1		Accra	
5	Installation and Integration of Equipment in Accra and Kumasi Refresh Solution	2		Accra and Kumasi DC	
6	Installation and Integration of Accra DC Capacity Upgrade Solution	1		Accra DC	
7	Installation of AI Cloud Infrastructure	1		Accra DC	
8	User Acceptance Testing for both Accra and Kumasi refresh and upgrade	1		Accra and Kumasi DC	
9	Training	1		Accra DC	

1. If applicable

3. Technical Specifications

1 BACKGROUND

The National Information Technology Agency (NITA) is in the process of refreshing and upgrading the two national data centres located in Accra and Kumasi. These facilities serve as central hubs for the government of Ghana's IT operations, providing secure, efficient, and effective data storage. They have been operational over the past 10 years, and much of the equipment has now reached the end of lifecycle and End of Support. The outdated IT infrastructure requires immediate attention to maintain efficiency and support future scalability. Additionally, with approximately 90% of the existing capacity space utilized, there is an urgent need for expansion to accommodate the ever-growing data centre needs of Government.

The facilities were originally designed to accommodate future growth for AI cloud platform. NITA now intends to upgrade the centres into modern data centre, incorporating the latest technologies and best practices to ensure improved performance, reliability, and security and AI ready with some AI infrastructure to build the base AI infrastructure for government AI adoption programs.

1.1 ACCRA DATA CENTRE FACILITY DESCRIPTION

The primary data centre facility consists of a ground floor dedicated to engineering services and two upper floors designed for data hall space. The first floor is fully commissioned and operational, while the second floor is reserved for future expansion. Engineering provisions have been made to accommodate this expansion. Both the first and second floors house six smaller data halls, each cooled by In Row Coolers (IRCs). Power is supplied overhead, with busbars directly connected to the UPS output board for efficient power distribution.

Utility Electrical Supply - The data centre is supported by two 11kV incomers from different utility substations, ensuring redundancy. These High Voltage (HV) panels are bus-coupled, allowing for continued operation in the event of a failure in one source. The overall power distribution architecture is a 2N architecture. In the event of a power outage, the load automatically switches to the standby source. Two 2000kVA transformers convert the incoming 11kV feeds to 400V. Additionally, the Low Voltage (LV) panels are equipped with a bus coupler for further redundancy.

Generator Capacity - Two 2250KVA Cummins high voltage generators are installed in a separate compound near the building entrance in an N+1 configuration. These generators are

supported by a shared above-ground diesel fuel tank with a capacity of 11,541 litres. At full load, the generators consume fuel at a rate of 394 litres per hour, allowing for 29 hours of operation. The refuelling trigger is set at 40%, although a refuelling SLA is yet to be established. Each generator also has a 3,432-litre day tank and one fuel pump. Testing is conducted weekly using the data centre load.

UPS System - The Uninterruptible Power Supply (UPS) systems are housed in separate A and B rooms, with each stream featuring two subsystems. Each subsystem comprises two 200kVA modules in parallel, providing a total of 400kVA per leg (A and B). This is downrated to a maximum of 80%, equating to 360kW per system for redundancy. Power distribution is proportional to each room, utilizing both subsystems. The UPS systems are Huawei 5000E, isolated from external networks, and supported by Valve Regulated Lead-Acid (VRLA) batteries located in separate, unmonitored rooms.

Cooling System - Cooling is managed by two Marley SPX cooling towers in an N+1 configuration, with only one active at any time. Two 1,283.3kW chillers are installed inside the facility, also in an N+1 configuration. Automatic Transfer Switches (ATS) allow the chillers to switch between power sources as needed. Secondary pumps are configured in an N+1 arrangement and are connected to UPS for backup. The supply water temperature is maintained at 7°C, with a return temperature of 12°C. In Row Coolers (IRCs), each rated at 31.6kW, provide cooling within the data halls. A small floor void is present to house water and feed services to the IRCs, which also manage dehumidification.

Whitespace Configuration - The first-floor houses five operational data halls and an Main Distribution Area (MDA) room, while the second floor contains four additional data halls currently reserved for future expansion. Access to the first floor is provided by a goods lift with a weight limit of 1,350kg and a door height of 2,010 mm. The data hall entry involves two steps followed by a door with a height of 2,100 mm.

Fire Suppression System - Fire suppression is managed via FM200 gas using a double knock system. Detection is facilitated through VESDA (Very Early Smoke Detection Apparatus). Spare gas is stored on-site for emergency use.

Network Infrastructure - The facility features two fiber entry points located at opposite sides of the building, taking diverse routes to the site for enhanced network reliability. The Entrance Room (ER) rooms are positioned at either end of the building, providing complete

diversity of more than 10 meters. This passive infrastructure integrate into an active network infrastructure from core, distribution and access. The core network within the Data Center forms the network backbone for all government networks services.

1.2 KUMASI DATA CENTRE FACILITY DESCRIPTION

The Kumasi facility is a Huawei IDS1000 modular, containerized data center solution designed to provide scalable, efficient, and rapid deployment for IT infrastructure needs. It is an all-in-one solution that integrates key components such as power distribution, cooling, fire suppression, and security systems into a compact container unit, allowing for quick installation. The facility accommodates a total of 42 cabinets, consisting of 32 AC-powered device cabinets and 10 DC-powered device cabinets. The system is equipped with a 300KVA modular UPS featuring N+1 redundancy for enhanced reliability. Each chiller has a cooling capacity of 100KW, with a 3+1 redundancy configuration to ensure efficient temperature control. The facility includes two 450KVA generators to provide backup power, ensuring continuous operation during outages.

1.3 DATA CENTER NETWORK DESCRIPTION

The National Information Technology Agency (NITA) has two data centers, primary and secondary, located at the Accra data center and the Kumasi Data Center respectively. The current network equipment consists of Huawei devices, including edge routers, aggregation switches, access switches, security firewalls, and others. Most of the equipment and components have reached EOX, posing high operational failure risks and requiring urgent replacement to ensure service quality.

1.4 OBJECTIVES

The primary objective of this project is to retrofit the government data centers to refresh and upgrade the National Data Center's infrastructure to ensure continued reliability, scalability, and security able to deliver modern digital infrastructure needs for Government digital agenda. The project is also expected to

- Address existing infrastructure limitations, update obsolete systems, and enhance the facility to meet future demands for the country's IT infrastructure.
- To ensure the stability, security network of Ghana NITA's primary and backup data centers (Accra and Kumasi), it is necessary to develop an efficient replacement for network equipment (routers, switches, firewalls etc.) that have reached EOX.

- to upgrade the national data center infrastructure, build an AI cloud platform, and deploy a high-performance AI computing network to build Ghana into a West African center for artificial intelligence and cloud computing.

2 SCOPES OF WORK

The scope of the project involves the design, delivery, installation and commissioning of refreshing and upgrading capacity of the Government data centres in Accra and Kumasi. The whole project to be delivered by the vendor is grouped into three main areas.

- I. **Design & Delivery & Commissioning for Data Center Facility Renovation and Expansion** -This involves the design and implementation of an expanded rack configuration for the data centre, ensuring optimal space utilization and efficiency. This involves designing one of the white spaces available (F5) for a total of 68 racks with all the necessary technologies including environmental and security solutions. The bidders will assess the current data centre infrastructure and carry out necessary renovations to enhance performance, reliability, and compliance with modern standards. The project includes the replacement and installation of new, advanced equipment for power, cooling, ELV system, and firefighting system, ensuring improved operational capabilities.
- II. **Replacement of Data Center EOX Network Equipment** - Primarily involves the replacement of critical network devices such as core switches, routers, and firewalls. To avoid risks arising from insufficient device performance, end of vendor support, low energy efficiency, or security vulnerabilities, proposers must evaluate the current network architecture. Under the premise of ensuring business continuity, they should select new equipment with strong compatibility and high energy efficiency for the upgrade. Additionally, network architecture must be updated, and the architecture optimized to enhance the overall performance, security, and reliability of the data centre.
- III. **Build a Next-generation AI Cloud Platform** – This is a new addition. The platform integrates high-performance network architecture, intelligent storage systems, scalable server clusters, and cloud management software. It delivers expandable computing power, efficient data processing, and one-stop AI services. Featuring highly reliable architecture design, the platform provides multi-layered security protection and intelligent resource allocation capabilities, offering enterprises and developers a stable, secure, and high-efficiency cloud-based AI solution. Various standards, such as ISO and IDCA, will be used as supplemental guidance to ensure system hardening and

overall data centre security. Applicable ISO/IEC standards include ISO/IEC 27001, ISO/IEC 20000-1, ISO 22301 and relevant data-centre facility standards such as ISO/IEC 22237/TIA-942.

2.1 KEY DELIVERABLES OF DATA CENTER INFRASTRUCTURE

Following a comprehensive assessment of the data center, several critical issues have been identified that require immediate attention and remediation. These issues necessitate a series of upgrades and system refreshes to ensure the data center operates at optimal efficiency, security, and scalability. The overall renovation and expansion plan will involve two data centers in Accra and Kumasi.

2.1.1 EXISTING DEVICE REFRESH – ACCRA DATA CENTER:

- The warranty period of the pump UPS and PAC&LCU UPS is out of warranty and no spare parts can be obtained and needs replacement.
- The UPS devices that supply power to rooms F3, F4, and MDA, 10 pcs in total, are out of warranty and no spare parts can be purchased, posing great security risks. This requires complete replacement.
- The warranty of 12 pcs In-Room A/C has expired, and spare-parts cannot be obtained. There are great risks if the A/C are still used. They require complete replacement.
- The NetEco system (Environmental monitoring system) of the fusion module in the F3/F4 room is out of warranty and cannot be upgraded. Requires replacement.
- The existing CCTV monitoring system can only monitor the data center in real time and does not provide the playback and storage functions. In addition, the cameras are out of warranty. Need to upgrade CCTV system and replace cameras for all the rooms currently in use (GF&FF). New monitoring system should have 6 months video storage duration.
- The access control system and devices for all the rooms currently in use (GF&FF) are out of warranty and need to be upgraded. Complete replacement is required.
- The current elevator is a passenger elevator. This is expected to be changed to a freight elevator to be able to carry heavy equipment from the ground floor to the first and second floor. The Elevator shaft is actually a freight shaft but a much smaller elevator for passengers is now installed.

2.1.2 EXISTING DEVICE RENOVATION – KUMASI DATA CENTER:

Cooling Container:

There are four water-cooled units that are approaching their service life and need to be replaced.

IT Container:

All the row-based air conditioners are approaching their service life and need to be replaced, along with providing corresponding maintenance services for 3 years.

Power Supply Container:

All the UPS are approaching their service life and need to be replaced, along with providing corresponding maintenance services for 3 years.

2.1.3 RENOVATION&EXPANSION SCHEME – ACCRA DATA CENTER

No	Item	Unit	Quantity
1	Device Replacement & System Upgrade		
1.1	One 200 KVA Modular UPS for HVAC (VRLA 10 min backup time@200KVA)	pcs	1
1.2	One 200 KVA Modular UPS for pump (VRLA 10 min backup time@200KVA)	pcs	1
1.3	200 KVA Modular UPS for Network (VRLA 10 min backup time@200KVA)	pcs	2
1.4	200 KVA Modular UPS for F3 room (VRLA 10 min backup time@200KVA)	pcs	4
1.5	200 KVA Modular UPS for F4 room (VRLA 10 min backup time@200KVA)	pcs	4
1.6	50KW In-room Precision Air-Condition (PAC) for Power Entrance Room	pcs	2
1.7	50KW In-room Precision Air-Condition (PAC) for Low-voltage Distribution Room	pcs	2
1.8	50KW In-room Precision Air-Condition (PAC) for UPS Power Room 1	pcs	2
1.9	50KW In-room Precision Air-Condition (PAC) for UPS Power Room 2	pcs	2
1.10	50KW In-room Precision Air-Condition (PAC) for Battery Room 1	pcs	1
1.11	50KW In-room Precision Air-Condition (PAC) for Battery Room 2	pcs	1
1.12	50KW In-room Precision Air-Condition (PAC) for UPS Power Room 5	pcs	2
1.13	Smart R-PDU	pcs	272

No	Item	Unit	Quantity
1	Device Replacement & System Upgrade		
1.14	DCIM upgrade and corresponding hardware	Set	1
1.15	Monitoring system for all the rooms currently in use (GF&FF)	Set	1
1.16	Access control system for all the rooms & racks currently in use (GF&FF)	Set	1
1.17	Replace and retrofit existing elevator into a freight elevator.	pcs	1
1.18	Replace in-row Precision Air-Condition (PAC) 30KW for F3	pcs	16
1.19	Replace in-row Precision Air-Condition (PAC) 30KW for F4	pcs	16
1.20	Fire extinguishing system & fire alarm& detection system for GF&FF	set	1
2	White Space (F5) Room 68 Racks Expansion		
2.1	In-row Precision Air-Condition (PAC)	pcs	24
2.2	Rack (1200mm*600mm*2200mm) (52 IT racks (6 kW each), 8 AI computing racks (16 kW each), and 8 network racks (2 kW each))	pcs	68
2.3	Aisle system include all components	Set	2
2.4	DCIM system for aisle & F5 Room (Includes all hardware and software)	Set	1
2.5	Integrate with the existing DCIM system.	Set	1
2.6	AC power distribution cabinet	pcs	4
2.7	Monitoring System for F5	Set	1
2.8	Smart R-PDU	pcs	136
2.9	Fire extinguishing system & fire alarm& detection system for F5 Room	Set	1
2.10	UPS input distribution panel	pcs	2
2.11	UPS output distribution panel	pcs	2
2.12	300 KVA Modular UPS (VRLA 10 min backup time@250KVA	pcs	4
2.13	Fingerprint lock for all racks	Set	1
2.14	Raise floor	Set	1
2.15	Lighting system of F5 Room	Set	1
2.16	3-year maintenance support for system	Set	1

No	Item	Unit	Quantity
1	Device Replacement & System Upgrade		
2.17	Access control system For F5	Set	1
2.18	Smart screen 138 inch	pcs	2
2.19	Smart screen 86 inch	pcs	10

2.1.4 RENOVATION SCHEME – KUMASI DATA CENTER:

No	Item	Unit	Quantity
Cooling system			
1	DX Integrated air conditioner for IT Room and Power room	Set	1
2	Supporting services such as air ducts and equipment foundation, etc.	Set	1
Power Supply Container			
1	200KVA UPS (Module UPS, Unit Rack Capacity:300KVA) including battery system VRLA 10min backup time @ 10min	pcs	3
2	UPS Input & Output Cabinets	Set	1
5	3 years maintenance support for system	Set	1
IT Container			
1	Smart R-PDU	pcs	84
2	DCIM system	Set	1
3	3 years maintenance support for system	Set	1

2.2 EOX EQUIPMENT REPLACEMENT

The existing network supports the normal operation of services and provides government services externally. Currently, all network devices are EOX, which is affecting the sustainable and healthy development of our business. At the same time, it is difficult to support the deployment of emerging businesses in the AI era. The network architecture consists of four parts: the existing Border network, the existing DCN network, the new AI Platform, and the new Cloud Platform.

2.2.1 EXISTING BORDER NETWORK UPGRADE

The IGW routers, Core routers, Core switches, WAN routers and WAN switches are facing EOX equipment replacement. Replace them with high-performance, highly reliable routers and switches to achieve high-speed running of border networks. The specifications of these existing devices are provided below.

2.2.2 EXISTING DCN NETWORK UPGRADE

Upgrading from traditional networks requires the ability to interoperate with existing network services, ensuring the continued operation of current services, while also supporting the evolution of services towards AI Cloud.

The DCN network adopts a spine-leaf architecture, characterized by easy deployment, high reliability, and intelligent operation and maintenance.

The Spine-Leaf architecture is interconnected via 100GE high-speed links, and the Leaf nodes are designed with M-LAG to enhance network reliability. When one of the links fails or a device requires an upgrade, it can quickly switch to another link and device, thereby ensuring that the business remains unaffected.

The network controller platform provides graphical service configuration, supports rapid deployment of new services, and enables service simulation and rollback, significantly enhancing the efficiency and accuracy of service deployment.

The network analyzer platform enhances the visualization of network health status, supports automatic report generation, and sends emails to operations personnel.

2.2.3 AI PLATFORM FOUNDATION

The Government, as part of this deployment want to enable the foundation of its AI platform. This will involve the deployment of some base AI infrastructure that has the capacity to scale both horizontal and vertical. Deploy AI platform to support the addition of new AI applications, The AI base infrastructure includes nodes for computing, storage, network and cloud.

AI services are provided by inference clusters. The inference cluster is connected via 200GE AI network to achieve high-speed service forwarding.

2.2.4 MINIMUM CLOUD PLATFORM

Deploy Cloud to support the addition of new cloud applications, The cloud network infrastructure includes nodes for computing, storage, and network. The AI cloud adopts a

Spine-Leaf network architecture, offering exceptional scalability to meet customers' growing service demands.

2.3 NITA AI CLOUD PLATFORM

2.3.1 BRIEF OF BACKGROUND

Ghana government has set a clear goal to make Ghana the artificial intelligence hub of Africa with the goal of leveraging AI for inclusive growth and positioning the country as an AI leader in Africa. It also addresses potential risks like bias, privacy concerns, and job displacement associated with AI adoption.

NITA AI cloud platform is one pillar to accelerate AI adoption in public sector, deepen digital infrastructure and inclusion, facilitate data access and governance.

Artificial Intelligence (AI) has numerous transformative applications across the government sector. These applications can improve efficiency, enhance public service delivery, strengthen national security, and support data-driven policymaking.

Government is choosing an on-premises cloud for building AI infrastructure for the following reasons:

- I. Enhanced Data Security and Sovereignty:*** Full control over sensitive data (e.g., citizen records, surveillance, healthcare). Ensures data is stored within national borders, complying with data sovereignty laws. Minimizes risks from third-party exposure or cloud vendor data breaches. Ideal for defense, law enforcement, healthcare, finance, or citizen identity data systems.
- II. Stronger Regulatory Compliance:*** Easier to meet strict legal, compliance, and audit requirements. Customizable to industry-specific standards or internal policies. Better transparency and traceability for audits.
- III. Customizable Infrastructure for AI Workloads:*** Tailor the hardware to suit demanding AI models. Optimized for:
 - High-throughput training pipelines
 - Real-time edge inference
 - Secure multi-tenant government AI labs
 - Enables use of AI frameworks with fine-tuned performance and resource allocation.
- IV. Predictable Long-Term Costs***
 - Capex-focused model
 - Cost-effective for long-term use at scale — no egress fees, less vendor lock-in.
 - Useful for budgeting in public-sector funding cycles.

- Especially beneficial for governments with consistent workloads and long project horizons.

V. Low Latency and Local Processing

- Keeps compute and data close together = faster AI model performance.
- Reduces latency for:
 - Smart city systems (e.g., traffic lights)
 - Border surveillance
 - Emergency response
 - Critical in edge AI scenarios where real-time response is required.

VI. Integrated with Legacy Systems

- On-prem cloud can interface with:
 - Existing data warehouses
 - Legacy government applications
 - Secure internal networks (intranets)

VII. Greater Control Over Upgrades and Deployment

- Freedom to deploy, test, and update models or apps on your own schedule.
- Customize orchestration tools
- Ability to isolate critical AI systems for internal R&D or testing.

2.3.2 PILOT AI CLOUD INFRASTRUCTURE ARCHITECTURE

In the initial stage, NITA AI Cloud infrastructure will start with Virtual Assistants & Chatbots and other AI application scenarios. The Virtual Assistants & Chatbots need standard servers with CPUs and modest GPU in an on-premises cloud environment.

This AI Cloud Infrastructure is built to support high-performance distributed training of deep learning models, particularly for tasks like computer vision, natural language processing, and generative AI. It is designed to process petabytes of data, perform parallelized model training, and scale horizontally to support larger models and datasets.

This AI Cloud Infrastructure should use multiple compute nodes, each with several high-end GPUs, connected by high-speed interconnects. A parallel distributed file system ensures high I/O throughput. The system also needs to be orchestrated by tools.

AI Innovation

One-stop AI platform: Wizard-based training and pre-trained large models with hundreds of billions of parameters reduce the development cycle from months to days.

On-premises deployment

Secure: controllable data and legally compliant data use

Local O&M: unified O&M of multiple data centers

Collaborative: hardware and software pre-integrated and verified before delivery

Comprehensive cloud services

Ever-evolving: continuous synchronization with innovative cloud services of cloud

Open: extensive ecosystem and standard APIs

2.3.3 AI INFERENCE COMPUTING CLUSTER

The AI Inference server adopts an 8-module high-efficiency inference method and provides strong AI inference capabilities. It has advantages in computing power, memory bandwidth, and interconnection capabilities. It can be widely applied in generative large model inference and supports high interconnection bandwidth.

2.3.4 AI STORAGE ENVIRONMENT

Storage for AI is the data storage infrastructure purpose-built for AI and Machine Learning (ML) workloads. It needs to meet the demands of high performance and scalability in hybrid workload environments, effectively manage the massive amounts of data required throughout the AI process, and ensure rapid data reads, writes, and processing. Storage systems designed for AI help training clusters improve the efficiency of data ingestion and preprocessing, increasing the utilization of computing clusters. They also enhance the cost-effectiveness and accuracy of inference applications.

As large models transition into multimodal capabilities, enterprises face several challenges during model training and inference, including low utilization of training computational power, slow inference response, hallucinations in large models, inability to store long sequences, and high inference costs. The requirements for storage in AI inference primarily include:

- **Large-capacity storage:** During AI inference, especially for long sequence inference, a significant number of intermediate results needs to be stored. These intermediate results can be very large, thus requiring storage devices with large-capacity storage capabilities.
- **High-performance read/write:** Frequent read and write operations during AI inference place high demands on the performance of storage devices. Storage devices need to be able to quickly read and write data to reduce inference latency.
- **Persistent storage:** To overcome the limitations of NPU/GPU memory and enhance the context window length, storage devices need to support persistent storage. This can avoid redundant computations and improve inference efficiency.

- **Low latency:** In AI inference scenarios, low latency is one of the key metrics. Storage devices need to be able to quickly respond to read and write requests to ensure the efficiency of the inference process.
- **High reliability:** During AI inference, the integrity and reliability of data are crucial. Storage devices need to have high reliability to ensure that data is not lost or corrupted.
- **Flexible scalability:** As AI models continue to evolve and data volumes increase, storage devices need to have flexible scalability to adapt to changing demands.

2.3.5 AI CLOUD NETWORK AND SECURITY ENVIRONMENT

● **Cloud Spine Switch**

In the spine-leaf architecture, the spine switch is high- performance, high-throughput switch and connects to all leaf switches in a full-mesh topology. Spine switches will be based on non-blocking architecture and high-availability, fault tolerance and future scalability.

● **Cloud 10GE Fiber Server Leaf Switches**

In the spine-leaf architecture, a leaf switch provides connectivity between servers and storage systems within a data center. It connects directly to servers and links up to spine switches, which act as the core network layer. Leaf switches will interconnect with Spine switches with 100G data speed and with servers using downlink of 10G data speed.

● **BMC Switches**

BMC switches are specialized network switches used specifically to manage and maintain access to IT equipment over a separate, isolated network channel. They enable IT administrators to access network devices, servers, and other critical infrastructure independently of the main production network, ensuring management capabilities remain available even during network outages or failures.

● **AI Spine Switches**

The AI spine switches series data center switches are next-generation, high-performance, high-density core switches designed for AI scenarios in data centers, providing ultra-high-density port options, supporting enterprises in building ultra-large-scale intelligent computing clusters.

● **AI Leaf Switches**

The AI leaf switches series data center switches are next-generation, high-performance, high-density access switches designed for AI scenarios in data centers. They offer high-density port access, support a variety of data center features.

● AI Next-generation Firewall

In a data-center scenario, AI next-generation firewall is designed to address security challenges in data centers, combining high throughput, rich features, and easy management. Key functions include integrated protection (firewall, VPN, intrusion prevention, antivirus, URL filtering, etc.), application identification and control (identifying over 6,000 applications and enabling access control down to application functions), intrusion prevention, data leak prevention, bandwidth management, URL filtering and SSL encrypted traffic detection. Additionally, the firewall supports security virtualization (creating and managing virtual security services on the same physical device), and ensures high availability with active/standby modes.

Capabilities of the proposed AI Cloud Platform

Indicator	Cloud Service	Specifications
Compute Service	ECS	- Elastic Cloud Server, on-demand access to elastic and scalable computing servers. - Support specifying the power-on/off status and HA switching policy of the elastic cloud server after its creation, as well as creating non-administrator users during the creation process.
	IMS	- Image Service, Provide simple and convenient self-service image management function. - Support the creation of complete machine images that include both system disks and data disks.
	AS	- Auto Scale, dynamically increase or decrease instances to achieve optimal utilization of cloud resources. - Support the formulation of automatic scaling policy based on fixed time points, periodicity, and system monitoring indicators
Storage Service	EVS	- Elastic Volume Service, virtually scalable block storage device based on a distributed architecture. - A single data disk can support up to 64TB, meeting the requirements of scenarios demanding large-capacity specifications.
Network Service	NAT	Network Address Translation, to connect your VMs to an external network
	SG	Security Group, implements access controls for ECSs, specifying the communication scope of ECSs
	VPC	Virtual Private Cloud, Provide secure, isolated, and logical network environment.

Indicator	Cloud Service	Specifications
		• Supports layer 2 and layer 3 multicast capabilities, and supports IGMPv2 and IGMPv3 protocols
	EIP	• Elastic IP Address, Provide independent public IP addresses and bandwidth to the Internet
	Direct Connect	• A high-speed, stable, and secure dedicated network channel. • It supports both Layer 2 and Layer 3 network leased lines, allowing for the application of Layer 2 leased line instances for VPC subnets. This enables Layer 2 interconnection between off-cloud subnets within the same network segment and VPC subnets, ensuring that workload migration to the cloud does not require modifying IP addresses
	ELB	• Elastic Load Balance, automatically distributes access traffic to multiple Elastic Cloud Services (ECSs) to balance the load. • Support the binding of multiple public IPs to a single load balancer instance, to meet business scenarios where the load balancer uses public IPs from different network segments to provide services externally
Cloud Management	OC	• Operation Center, provide localized and refined operation and maintenance capabilities, focusing on resource monitoring and fault handling. Operate full stack AI Cloud including computing, storage, network, network security, local backup and remote disaster recovery. • Support fault root cause isolation by analyzing relevant indicators (CPU usage, memory usage, disk IO, and network inbound and outbound rates) before and after the occurrence of a fault to automatically deduce which hosts the business fault occurred on, thereby assisting operation and maintenance personnel in avoiding faults and reducing MTTR.
	SC	• Service Center, provide globalized and service-oriented resource supply capabilities, focusing on service catalogs and resource management. Provision full stack AI Cloud including computing, storage, network, network security, local backup and remote disaster recovery. • 5 Level VDC: Provide virtual data center (VDC) management capabilities, support Level 5 VDC

Indicator	Cloud Service	Specifications
		management, and match users' organizational structures up to Level 5. Each VDC has independent resource access permissions, as well as independent cloud service quotas and management permissions. • Process Approval: Support process approval functionality to ensure that controlled business can only be utilized after approval, with up to 5 levels of approval configurable.

AI COMPLIANCE STANDARDS

The AI Cloud Platform shall comply with all applicable Ghanaian laws, regulations, policies and standards, including the Cybersecurity Act, 2020 (Act 1038), Data Protection Act, 2012 (Act 843), privacy-by-design/default, data residency and sovereignty requirements, least privilege, encryption, logging, vulnerability management, secure model/data lifecycle controls, human oversight, auditability and responsible/ethical AI principles.

4.4 SERVICE SPECIFICATIONS

The services to be provided under this contract must comply with the following technical and functional specifications, with a view to modernizing and expanding the data center infrastructure to support client operations.

4.4.1 NETWORK PLANNING AND DESIGN

A detailed survey of the existing infrastructure, including servers and networks; provide design network topology diagrams, IT structure diagrams etc. The proposer must possess relevant certifications (e.g., CCIE, CCIP, HCIE, HCIP, etc.) to guarantee the service quality.

4.4.2 SUPPLY, INSTALLATION, AND COMMISSIONING

The bidder must complete equipment production and transportation to Ghana within 28 WEEKs. Install equipment according to the design plan, including cabinet layout, cable installation, and labeling. After network integration, verify connectivity, server startup, storage mounting, etc. Conduct continuous operation tests to ensure fault-free system operation.

4.4.3 TECHNICAL SUPPORT SERVICE

The ICT active equipment vendor must be a company registered in Ghana or have a fully registered branch within the country.

The manufacture must maintain a stable technical support team with over 15 years of local operation and more than 30 personnel. Preference is given to original equipment manufacturers (OEMs), who must provide CVs of at least 15 OEM resident staff in Ghana (for non-Ghana nationals must with Ghana work permit) to ensure local support capability.

The proposer must confirm that can provide support from the OEM, at least with below service standard:

- **24x7 Technical Assistance Center (TAC) Support:** must provide 24 hours a day, 7 days a WEEK through TAC hotlines, emails, websites, and mobile APP for product technical consultation, troubleshooting issues, and other service requests. For issues which critically impact on customer's business operations, the vendor's support team must response within 30 minutes, and help customer to recover service on time.
- **Online Self-help Support:** must provide a one-stop online self-service platform to help customers solve problems, such as the technical support website, technical support community, and intelligent Q&A chatbot. the website must include the updated technical and general information on products with product manuals, configuration guides, and network maintenance cases. Customers can view or download software, helpful documents and get latest product information
- **Advance Hardware Replacement:** 9 x 5 x NBD (Next Business Day), 9x5 coverage window, service is available 9 hours a day (09:00 to 18:00), 5 days a WEEK (Monday to Friday), excluding local official holidays. Replacement parts will arrive the Next Business Day (NBD), provided that an RMA number has been generated before 15:00 (local time). If generated after 15:00 (local time), then Vender will log RMA application on the next business day and replacement parts will arrive on the Next Business Day (NBD) of the RMA application logged date.
- **Rights to Software Updates:** Within the validity period of the service, the vendor must provide embedded system software updates that include bug fixes and maintenance releases. Customers can obtain the software updates from the vendor's technical support website, and perform the installation of software updates.

4.4.4 RESIDENT ENGINEER SUPPORT SERVICE

The proposer should provide 2 engineers for resident services for the positive ICT products, such as network, data storage equipment etc. service period is 12 months, and the service standard requirement is as follows:

No.	Service Item	Service Description	Frequency
1	Monitoring and Analysis	Resident engineers monitor alarms and analyze and handle abnormal alarms based on the running status, capacity, performance, and logs of the product.	Daily
2	Fault Recovery	Resident engineers locate and rectify faults on site, and quickly recover services to minimize the impact of faults on services.	On Demand
3	Routine Inspection	The resident engineer checks the running indicators, logs, performance, and basic configuration information of the product based on the inspection list and clears the alarms in a timely manner to ensure that the product runs properly.	Weekly/On Demand
4	Change Assistance	Based on the customer's request, O&M event, or fault, the resident engineer assists in expanding, replacing, and repairing the software and hardware of the product based on the resident O&M requirements and the customer's process.	On Demand
5	Service Response	Triggered by customer requests, responded to customer requirements, and provided support services for customers. For example, product use consultation, technical assistance, service request, service provisioning, data query, and third-party commissioning assistance.	On Demand
6	System Backup	Resident O&M engineers formulate system backup policies based on customer requirements or product maintenance requirements, periodically back up and check configuration parameters or key data storage, and quickly restore the system to the state before the fault occurs.	Weekly/Monthly
7	Configuration Information Maintenance	If the configuration information changes during the event handling, troubleshooting, and change operations of Huawei products, the resident engineers update and maintain the configuration information, such as the product configuration, network topology, infrastructure information and so on based on the customer's requirements.	On Demand
8	Asset Information Maintenance	If asset information changes due to incident handling, troubleshooting, change operations of products, the resident engineer updates and maintains the asset information of the responsible products as required by the	On Demand

No.	Service Item	Service Description	Frequency
		customer, and regularly maintains the asset ledger or stocktaking, such as shelving, delisting, on-line, offline of assets. Add, delete, and modify information.	
9	Emergency Plan	Based on the customer's requirements, resident engineers prepare emergency plans and drills for the products in charge to ensure that effective actions and solutions can be taken to quickly restore stable service running when critical faults occur.	On Demand
10	Service Report	Based on the resident work execution, regularly provide service reports based on the requirements of customers or projects. The service reports can be provided for a single product or module. (Fault analysis, routine inspection, change assistance.) Or multi-dimensional reports such as the overall project.	Daily/Weekly/Monthly (Project agreement)

CVs of resident engineer and relevant certificate (CCIE, CCIP, HCIE, HCIP etc.) should be provided together in the bidding stage.

4.4.5 TRAINING TO BE PROVIDED

In order to have better understanding and utilization of equipment, and know how to maintain and optimize, proposer should provide training courses for relevant personnel. The proposer must have the ability to provide Original Equipment Manufacturer (OEM) training on the equipment and possess the following capabilities including but not limited to:

a) Training Requirements

- The Original Equipment Manufacturer (OEM) should provide both global training services (offshore training) and Ghana local training services (onshore training).
- The Original Equipment Manufacturer (OEM) should provide good learning environment for trainees, including computers, multimedia teaching, and on-site practice, etc. To meet the requirements of courses that combine theory and practice.

b) Curriculum Structure

- For curriculum, it covers two topics including AI and Cloud.

- The offshore training program is structured in two batches, with each batch limited to 8 participants and the course delivered for a 5-day basic AI & Cloud training.

Type	Curriculum Topic	Person	Training Days	Batch
Offshore	AI, Cloud	8	5	2

- The onshore training is designed for 10 days, including advanced AI&Cloud training.

Type	Curriculum Topic	Class	Training Days	Batch
Onshore	AI, Cloud	1	10	1

- During class, training must at minimum cover: installation, commissioning, testing, maintenance and fault rectification down to components or modules.

c) Trainer Qualifications

- Certified instructors with ≥ 5 years field experience with excellent bilingual capability (English & other language);
- The proposer shall submit resumes of full-time instructors for evaluation, the quantity of instructors who specializing in the same technical field should exceed at least five.

d) Talent Assessment Service

- The OEM should provide course attendance certificate if pass class examination. And for further learning and certification requirements, the OEM should have Internationally recognized certificate examination for trainees. Trainees have the option to independently purchase exam vouchers to register for and take the corresponding exams.
- To meet the different needs of AI & Cloud practitioners, the OEM shall have at least 3 levels certification system, for example associate, professional and expert.

e) Reception Services

In order that trainee can enjoy a comfortable learning time, following services for trainee who participating in offshore training:

- Flight: Round-way economy class flight for trainees
- Accommodation: The specified accommodation standard is no lower than a four-star hotel.
- Transportation: Provide transportation between hotel and airport, hotel and training center, and transportation in spare time activity.
- Insurance: Purchase the accidental injury insurance.
- SIM card: A SIM card of local place should be provided for each customer.
- Allowance: Meal allowance will be provided from 1st day to the last day of training. (Except welcome dinner, class end dinner as well as tour day's lunch).
- Stationery: Notebook, water glass & ball pen will be given as a training kit.

5.0 ENVIRONMENTAL, SOCIAL, HEALTH AND SAFETY REQUIREMENTS

The Supplier shall comply with all applicable Environmental, Social, Health and Safety requirements under the project, including the World Bank Environmental and Social Framework, the Project Environmental and Social Commitment Plan, the Project Environmental and Social Management Framework, applicable national environmental, labour, occupational health and safety, fire safety, waste management and related regulatory requirements.

The Supplier shall ensure that all activities under the Contract, including supply, delivery, installation, replacement, dismantling, testing, commissioning, training and maintenance, are undertaken in a manner that avoids, minimizes and manages Environmental, Social, Health and Safety risks and impacts. These requirements shall apply to the Supplier, subcontractors, service providers, vendors and all workers engaged under the Contract.

The Supplier shall take account of the live-operational nature of the Accra and Kumasi Data Centres and the need to avoid disruption to critical data centre operations. Works shall therefore be carried out only under approved method statements, access control arrangements, permit-to-work procedures, electrical isolation protocols, business continuity measures, and close coordination with the Purchaser, NITA, facility management and the Project Environmental and Social Safeguards Specialist.

The Supplier shall also take into account the site-specific Environmental, Social, Health and Safety issues identified during the ESS site screening, including but not limited to: live data centre operations; work within active institutional environments; access control and security restrictions; occupational health and safety risks; movement of heavy equipment; raised floors and hidden services; water ingress and dampness; drainage and stormwater risks; vegetation, pest and reptile risks at Kumasi; waste and e-waste handling; battery and hazardous waste management; fire safety and emergency preparedness; worker welfare; stakeholder

communication; SEA/SH/GBV and worker conduct risks; and resource efficiency, energy performance, climate resilience and low-carbon considerations.

The Bidder shall submit Management Strategies and Implementation Plans to manage the key Environmental, Social, Health and Safety risks associated with the Contract. In addition to the general MSIPs required under this bidding document, the Bidder shall prepare the required site-specific MSIP annexes for the Accra and Kumasi Data Centres as required in **ITB 11.2 (i) & 11.3 (d) of Section II - Bid Data Sheet (BDS)**, considering the live-operational nature of both facilities and the site-specific ESS issues .

No physical installation, dismantling, replacement, intrusive inspection, raised-floor works, electrical isolation, UPS/battery handling, fire system interface, cooling system interface, elevator retrofit, heavy equipment movement, e-waste removal or any other activity with potential Environmental, Social, Health and Safety implications shall commence until the relevant site-specific MSIPs and method statements have been submitted by the Supplier and reviewed and cleared by the Purchaser.

The bidder shall nominate and maintain as part of its team, a qualified ESHS Specialist who will have a master's degree in environmental science, occupational health and safety, engineering, social sciences, environmental management, or a related discipline; at least seven (7) years of relevant professional experience; and at least three years of experience supporting contractor ESHS management on ICT, electromechanical, building services, infrastructure, data centre, energy, or comparable technology-sector assignments. Experience with World Bank ESF/ESS requirements, e-waste management, OHS systems, incident reporting, and contractor ESMP/MSIP implementation shall be an added advantage.

The ESHS Specialist or Officer shall be available during mobilisation, installation, testing, commissioning and demobilisation and shall coordinate all ESHS matters with the Purchaser, NITA, facility management and the Project Environmental and Social Safeguards Specialist.

The Supplier shall maintain records of ESHS implementation, including worker induction, toolbox talks, permits-to-work, incident reports, waste transfer records, site inspections, grievances, corrective actions and monthly ESHS reports, and shall make these available to the Purchaser upon request.

Qualifications of Key Staff

1. Project Manager / Project Lead

- **Role:** Lead overall project delivery, stakeholder coordination, scope, schedule, budget, quality and risk management.
- **Qualifications & Experience:**
 - Bachelor's degree in IT, Engineering, Project Management or related field; Master's preferred.
 - PMP, PRINCE2 Practitioner or equivalent certification.
 - Minimum 12 years' experience, including 8 years managing large-scale data centre or cloud projects.
 - Experience coordinating facility, network, security, cloud and AI workstreams in live, mission-critical environments.

2. Data Centre Infrastructure Specialist

- **Role:** Lead the design, installation and commissioning of power, cooling, racks, DCIM, fire protection and physical security systems.
- **Qualifications & Experience:**
 - Bachelor's degree in Electrical, Mechanical, Electromechanical or Building Services Engineering.
 - Relevant certification such as CDCP, CDCS, CDCE, ATD or equivalent.
 - Minimum 10 years' experience, including at least two data centre construction, expansion or upgrade projects.
 - Strong knowledge of UPS, generators, chillers, 2N/N+1 redundancy, DCIM/BMS and relevant data centre standards.

3. Network Solution Architect

- **Role:** Design and oversee the migration of the border, core, spine-leaf, cloud and AI network architecture.
- **Qualifications & Experience:**
 - Bachelor's degree in Computer Science, Telecommunications, Computer Engineering or related field.
 - Valid CCIE, HCIE, JNCIE or equivalent expert-level network certification.
 - Minimum 10 years' experience, including 5 years in data centre network architecture.
 - Experience with spine-leaf, VXLAN/EVPN, M-LAG, 100GE/200GE networks and live network migration.

4. Cloud and AI Infrastructure Specialist

- **Role:** Design and deploy the private cloud and AI infrastructure covering compute, accelerators, storage, virtualization and orchestration.
- **Qualifications & Experience:**
 - Bachelor's degree in Computer Science, Computer Engineering, IT or related field; Master's preferred.
 - Relevant cloud, virtualization, Kubernetes or AI infrastructure certification.
 - Minimum 8 years' experience, including 3 years in AI, cloud or high-performance computing environments.
 - Experience with GPU/NPU clusters, Kubernetes, virtualization, distributed storage and high-speed AI interconnects.

5. Network Security Specialist

- **Role:** Design and implement security controls for the data centre, cloud, AI and network environments.
- **Qualifications & Experience:**
 - Bachelor's degree in Cybersecurity, Computer Science, Computer Engineering or related field.
 - Valid CISSP, CISM, CCIE Security, HCIE Security or equivalent certification.
 - Minimum 8 years' cybersecurity experience, including 5 years securing data centre or cloud environments.
 - Experience with next-generation firewalls, segmentation, VPN, SIEM, vulnerability management and security hardening.

6. Quality Assurance Specialist

- **Role:** Ensure all designs, equipment, installations, testing, documentation and deliverables comply with contractual requirements, technical specifications and applicable standards.
- **Qualifications & Experience:**
 - Bachelor's degree in Engineering, Information Technology, Quality Management or a related field.
 - Relevant certification such as ISO 9001 Lead Auditor/Implementer, CQA, CQE or equivalent.
 - Minimum 8 years' quality assurance experience, including 5 years on data centre, cloud or large-scale ICT infrastructure projects.
 - Experience developing quality plans, conducting inspections and audits, managing non-conformities, and overseeing testing, commissioning and acceptance.

7. Environmental, Social, Health and Safety (ESHS) Specialist

- **Role:** Coordinate and oversee all ESHS requirements, including incident reporting, corrective action tracking, and grievance follow-up.
- **Qualifications & Experience:**
 - A Master's degree in Environmental Science, Occupational Health and Safety, Engineering, Social Sciences, Environmental Management, or a related discipline;
 - At least seven (7) years of relevant professional experience;
 - At least three (3) years of experience supporting contractor ESHS management on ICT, electromechanical, building services, infrastructure, data centre, energy, or comparable technology-sector assignments; and
 - Demonstrated familiarity with ESHS planning, site supervision, worker induction, incident reporting, corrective action tracking, and implementation of contractor ESMPs/MSIPs.
 - Experience with World Bank ESF/ESS requirements, e-waste management, OHS systems, incident reporting, and contractor ESMP/MSIP implementation shall be an added advantage.

8. Resident Engineers

- **Role:** Provide on-site installation, testing, migration, troubleshooting, maintenance, documentation and knowledge-transfer support.
- **Qualifications & Experience:**
 - Bachelor's degree or HND in IT, Engineering, Telecommunications or related field.
 - Relevant certification such as CCNP/CCIE, HCIP/HCIE, VCP, RHCE, CKA, CDCP or equivalent.
 - Minimum 5 years' hands-on experience, including 3 years supporting mission-critical infrastructure.
 - The team must collectively cover data centre facilities, network and security, and cloud, compute and storage infrastructure.

**TECHNICAL SPECIFICATIONS FOR DC FACILITY AND NETWORK REFRESH
AND UPGRADE (ACCRA AND KUMASI)**

DATA CENTER INFRASTRUCTURE REFRESHMENT

4.1.1 MODULAR UPS (200kVA, 300kVA) MACHINES REQUIREMENTS

Category	Specifications	Mandatory
Standard	IEC 62040-1-2013, IEC 62040-2-2018, IEC 62040-3-2011	
General	The UPS that proposer provide shall be online double-conversion modular UPS with 3 phase input and 3 phase outputs	Yes
	The rated capacity of power module shall be no less than 50kVA and support hot swap.	Yes
	The modular UPS system that the proposer provides shall use concentrated bypass and the bypass module shall be hot swappable. A built-in bypass shall be provided	Yes
	The system can detect bus capacitor rest running life and give alarms before the capacitor failure	Yes
	At online mode, the system efficiency of UPS should be 95.8% at half rated load. At ECO mode, the operating efficiency shall be no less than 99%	Yes
Input	Input voltage range (Vac): 138-485VAC; at 305V-485V, the UPS shall not require derating	Yes
	Input frequency range (Hz): 40Hz-70Hz	Yes
	Input power factor: >0.99 at rated load	Yes
	THdi: <3% (linear load, rated load) <5% (nonlinear load, rated load)	Yes
Output	Output accuracy: $\pm 1\%$;	Yes
	Thdv: <1% (linear load, rated load) <4% (nonlinear load, rated load)	Yes
	Output power factor: 1	Yes
	Overload capacity: 110% overload for 60min; 125% over load for 10min; 150% overload for 1min	Yes
Battery and charger	Battery cold start: supported	Yes
	Charger capacity: The charging capacity shall not be less than the 10% of single module capacity	Yes
	Battery number adjustable: supported	Yes
Management	The UPS shall be configured with a liquid crystal display (LCD) for displaying the active and historical operating parameters and the active and historical alarm records in graphics.	Yes

4.1.2 MODULAR DATA CENTER SYSTEM REQUIREMENTS

Category	Specifications	Mandatory
General	Configuration requirement: Adopt in-row air conditioners for module aisle containment to achieve high efficiency and energy conservation.	Yes
	Integration requirement: To ensure consistency and overall delivery quality, choose the core components of the same brand, including the aisle sealing kit, cabinet, power distribution cabinet, precision air conditioner, and management system	Yes
	Skylight opening mode: The skylight is controlled by the magnetic lock and can open automatically in case of fire	Yes
	Cooling mode: Chilled water cooled in-row air conditioner.	Yes
	Monitoring function: supports aisle & cabinet access control and video surveillance	Yes
	Adopts the modular design and features the cold or hot aisle containment. A single module should integrate the cabinet system, power supply and distribution system, cooling system, management system, and cabling system. The dual-row deployment requires all cabinets in the module to be properly sealed.	Yes
Power Supply and Distribution System	The CE certificate and the CE test report with complete pages should be provided for the precision PDC	Yes
	Dual power supplies A and B should be supported, and power supply status indicators should be provided.	Yes
	The rpdu in each IT rack should be smart, can accurately and effectively monitors the real-time status changes of the current, voltage, power, and electric energy of electrical devices	Yes
Alarm	The modular DC should have a clear status indication, which can support indicate the status of module, and can interact with the access control and the alarm. It can also interact with the status of the module when the module has an alarm. Different level alarm can be distinguished and can be indicated by different light colors	Yes
Management	The smart modular DC centralized collector or centralized controller should adopt dual-power supply design to ensure the reliability of smart module monitoring	Yes
	In order to improve the reliability of the monitoring system, all the intelligent node signal transmission and the sensor power supply are all adopted by POE ring circuit	Yes

4.1.4 SMART SCREEN - 86INCH

Parameters	Technical Specification and Performance Requirement	Mandatory
General Requirements	The All-in-one terminal should include: ➤ 4K Ultra HD Interactive Panel ➤ Built-in Speaker ➤ Built-in microphone ➤ Built-in camera ➤ Built-in codec	Yes
	System Configuration: 8 core CPU, 12 GB RAM, 128GB Flash.	Yes
	Compatible with wall-mount brackets and rolling stands, designed to be easily installed onsite without any customization needed	-
Touch Screen Requirements	86-inch D-LED touch screen, 4K60 resolution.	Yes
	Optical anti-blue light protects eyes. The corresponding authentication certificate must be provided.	Yes
Built-in Camera Requirements	4K30 resolution with 5x zoom.	-
Built-in Microphone Requirements	24-mic array with 15 meters voice pickup. Supports intelligent noise reduction and multi-channel voice enhancement	Yes
Built-in Speaker Requirements	2 x tweeters + 2 x full-range speakers + 1 x woofer. Power: 70 W	-
Built-in Whiteboard	Writing latency, no more than 20ms. Lower is preferred.	Yes
	support intelligent writing recognition text and graphics.	Yes
Built-in Projection	Support wired and wireless projection through HDMI and USB Type-C cable.	Yes
	Wireless projection supports Wi-Fi Direct Projection (no need to be on the same network)	-
Video Conferencing	Compatible with mainstream conferencing systems and applications.	Yes
	Support AI features, including speaker tracking and acoustic baffle	Yes
Multi-window	The desktop can be divided into two windows that display two applications. User can change the size of the two windows by dragging the windows.	-
Online Management	The interactive display needs to have the same brand remote management software to support batch OTA upgrade, remote App management (Install/Delete), information window push, device status statistics, scheduled open/shutdown, etc.	Yes
Interface	2 x HDMI, 1 x 3.5mm Audio in/out, 2 x USB 3.0, 1 x Type-C	

4.1.5 SMART SCREEN-138INCH

Parameters	Technical Specification and Performance Requirement	Mandatory
Physical Parameters	Physical resolution: $\geq 3840 \times 2160$; aspect ratio: $\geq 16:9$	Yes
	Screen size: 138-inch; pixel pitch: < 0.8 mm	Yes
	Screen thickness: ≤ 36 mm; frame width: ≤ 2 mm; Surface flatness (cabinet): ≤ 0.1 mm; cabinet seam width: ≤ 0.15 mm	-
	Maximum power consumption: ≤ 1.9 kW;	-
Optical Specifications	Horizontal/Vertical viewing angle: $\geq 160^\circ$	Yes
	Screen surface temperature rise: $\leq 20^\circ\text{C}@600$ nits	Yes
	Screen gray level: ≥ 16 bits	Yes
	Brightness uniformity: $\geq 97\%$	Yes
	Refresh rate: ≥ 3840 Hz; frame changing frequency: ≥ 60 Hz	-
Speakers	Built-in speaker: $\geq 2 \times 3$; support for stereo surround and bass	Yes
Audio/Video input	Audio and video input ports: $\geq 1 \times \text{HDMI } 2.0$	Yes
Front Protection level	Protection level: $\geq \text{IP65}$	Yes
Others	Compatible with wall-mount brackets and rolling stands, designed to be easily installed onsite without any customization needed	Yes

4.1.6 50KW IN-ROOM PRECISION AIR-CONDITION

Location	Category	Specifications	Mandatory
Accra	50KW In-room Precision Air-Condition	Water cooled in-room precision air conditioner	Yes
		Net sensible cooling capacity: 50 kW;	Yes
		Water temp: 7/12deg	Yes
		up flow air supply, External pressure 100Pa;	Yes
		Indoor return air temperature: 25°C ;	Yes
		Power Supply: 380V / 3 Phase, 50 Hz;	Yes
		With heating and humidification functions, Built-in dual power switch;	Yes

4.1.7 SMART R-PDU

Location	Category	Specifications	Mandatory
Accra	R-PDU	Single -phase 220V AC input voltage, 50 Hz	Yes
		Input: junction box input or standard IEC60309 three-core plug input	
		Output: C13/C19 standard socket, circuit breaker protection supported by the R-PDU of 32 A or higher current	Yes
		Operating temperature: -5°C to +40°C	
		Operating humidity: ≤ 95% RH	
		The smart rPDU can accurately and effectively monitors the real-time status changes of the current, voltage, power, and electric energy of electrical devices in the data center.	Yes

4.1.8 ACCESS CONTROL SYSTEM

Location	Category	Specifications	Mandatory
Accra	Access control system	An aisle-level access control: An aisle-level access control is mainly used in a contained aisle. It provides security monitoring and data protection for contained equipment and related personnel. The access controller should support multiple access control devices, such as fingerprint, and IC reader with a keypad, password and fingerprint. Face recognition can be support with the camera on local Pad, and open the door with authorized customer face.	Yes
		Cabinet Access Control System: Cabinet Access Control System is mainly used in each equipment cabinet. It provides security monitoring and data protection for each cabinet. The access controller should support multiple access control devices, such as fingerprint, and IC reader with a keypad and fingerprint.	Yes
		Room aisle-level access control: room aisle-level access control is mainly used in room door. It provides security monitoring and data protection for each door. The access controller should support multiple access control devices, such as fingerprint, and IC reader with a keypad, password and fingerprint.	Yes

4.1.9 FREIGHT ELEVATOR

Location	Category	Specifications	Mandatory
Accra	Freight elevator	Elevator shaft size: 2.4m x 2m	Yes
		Load capacity: 2 ton	Yes

4.1.10 DX COOLING

Location	Category	Specifications	Mandatory
Kumasi	DX Cooling	Integrated precision air conditioner, Air Cooled, 25kW	Yes
		Outdoor type, IP 65	Yes
		Back Supply and back return	Yes
		Indoor circulating air volume is more than 6300 m3	Yes
		Return air temperature: 35°C	Yes
		Operating temperature range: +17.7°C to +38.1°C	Yes
		The operating humidity ranges from 5% to 95%.	Yes
		Max. Ambient Air on Condenser 38.1°C. 890W*800D*2100H	Yes
		Controller language: English	
		Including copper pipe, refrigerant charged, installation components	
		The first 1 year's warranty is included	

4.1.12 Smart R-PDU

Location	Category	Specifications	Mandatory
Kumasi	R-PDU	Single-phase 220 V AC input voltage, 50 Hz	Yes
		Input: junction box input or standard IEC60309 three-core plug input	Yes
		Output: C13/C19 standard socket, circuit breaker protection supported by the rPDU of 32 A or higher current	Yes
		Operating temperature: -5°C to +40°C	Yes
		Operating humidity: ≤ 95% RH	Yes
		The smart rPDU can accurately and effectively monitors the real-time status changes of the current, voltage, power, and electric energy of electrical devices in the data center.	Yes

4.1.13 DCIM SYSTEM

Location	Category	Specifications	Mandatory
Kumasi	DCIM System	The monitoring system should continuously monitor the power supply and distribution equipment, UPS, air conditioning, temperature and humidity, water leakage, smoke, video surveillance, and access control devices.	Yes
		When a parameter is abnormal or a component fails, the monitoring system generates alarms in colors, e-mail, or sound. Historical data and alarm events are recorded. All monitoring information is reported to the management platform over the standard northbound SNMP interface.	Yes
		Device information can be viewed using an app on a PAD, a mobile phone or through the website in real time to support mobile operation and maintenance. To ensure uniform planning, management, and commissioning, the micro-module monitoring system and the micro-module shall be from the same brand.	Yes
		The smart modular DC centralized collector or centralized controller should adopt dual-power supply design to ensure the reliability of smart module monitoring.	Yes
		In order to improve the reliability of the monitoring system, all the intelligent node signal transmission and the sensor power supply are all adopted by POE ring circuit.	Yes
		3D visualization : Support module layout 3D visualization on the local monitoring screen	Yes
		Temperature and humidity monitoring: Detects the environment temperature and humidity within the module.	Yes
		Power distribution monitoring: - Monitors the UPS main input voltage, UPS bypass input voltage, UPS output voltage, UPS output current, UPS output frequency, UPS module output current, battery voltage, and charge/discharge current. - Monitors the total input phase voltage, current, frequency, power factor, electricity energy, active power, reactive power, apparent power, load rate, voltage and current harmonics. Monitors the current, electricity energy, switch status, contact temperature, and load rate of the IT power distribution and air conditioning branches.	Yes

4.1.14 IN - ROW PRECISION AIR - CONDITION (PAC)

Location		Category	Specifications	Mandatory
Accra		In-row Precision Air-Condition (PAC)	Total cooling capacity: 30KW	Yes
			Air flow: 5000m ³ /h	Yes
			The power source should be 220~240V, 1Ph and 50/60Hz.	Yes
			Operating ambient temperature: 4°C~+40°C.	Yes
			Operating ambient humidity : ≤ 95% RH	Yes
			Temperature control accuracy: ±1°C, temperature change rate< 5°C/hour	Yes
			Alarm signal should be provided when temperature & humidity fluctuations overrun.	Yes

Location			Category	Specifications	Mandatory
				In-row chilled water PAC should be configured with chilled water coil, EC fan, DC power module, drain pan, water flow regulating valve, controller, screen and air filter.	Yes
				Chilled water coil should be made of 3-row copper tube and aluminum blue fins, to improve heat exchange, ease condensation water drainage and improve the corrosion resistance.	Yes
				PAC unit should be equipped with not less than 6 high efficiency, energy saving, stepless variable speed EC fan, the unit should be able to adjust the air flow and cooling capacity automatically according to the temperature of nearby IT racks, the status of every fan should be monitored, the faulty fan should be identified accurately once there is malfunction; Each fan should be hot swapped, the availability of the AC unit should not be affected during maintenance period.	Yes
				PAC unit should support dual power inputs and have automatic transfer function. The backup input should be transferred automatically when the first input is off to assure the power input is always on.	Yes
				PAC unit should be configured with high efficiency humidifier. The power consumption per kg/h humidification should be no more than 100W.	Yes
				PAC unit should be started with low load to reduce start-up current.	Yes
				The PAC unit should be configured with 7 inch LCD true color touch screen to provide good human-computer interaction and vivid interface. The controller should allow to do interface switching by touching one key. The controller should support to display the temperature & humidity color curves, and should also be able to graphically display the operation status of the unit components.	Yes
				PAC unit should have one-key touch function for faulty message collection and display. It should have the function for reporting of faulty alarms and maintaining logs of operating records. The recorded history alarms messages should not be less than 1500., Operating logs should not be less than 1000.	Yes
				PAC unit should have the following functions: remote temperature & humidity detecting and control, automatic dehumidifying function, anti-condensation function, air filter clogging detection and alarming function, ability to categorize the alarms of supply & return air temperature into too high or too low categories, ability to categorize the alarms of inlet & outlet water temperature into too high or too low categories, alarms of temperature & humidity sensor fault, alarm of DC power module fault, alarm of condensation water level fault, and water leakage detector.	Yes

4.1.15 IT RACK

Location	Category	Specifications	Mandatory
Accra	IT Rack	The server cabinet intakes air from the front and exhausts air out of the rear.	Yes
		IT cabinet types: 600 mm x1200mm x 2200mm	Yes
		The cabinet complies with IEC 60297-2 and is compatible with the 19" rack international standard.	Yes
		The cabinet is black.	Yes
		There are at least four mounting bars inside the cabinet for installing devices and securing partition panels. The distance between the front and rear mounting bars can be adjusted flexibly by each step of 25 mm. U numbers are marked.	Yes
		The front and rear doors of the cabinet are ventilated mesh doors, and the ventilation rate is not less than 75%.	Yes
		The entire cabinet is protected to at least IP20.	Yes
		The cabinet should provide a separate grounding point for the PDU to improve the grounding safety and reliability.	Yes
		There should be a depth of at least 50 mm between the mounting bars on the front posts of the cabinet and the front door frame, and at least 200 mm on the rear side of the cabinet. Removable baffle panels should be installed on both sides of the area. After all servers are installed, cold air can only be supplied into the servers through the air intake panel for servers. After heat exchange inside devices, heat is exhausted out of the rear of the cabinet and does not directly enter the hot aisle through other areas. Each cabinet can be configured with several 1 U and 2 U baffle panels. Buckle-type baffle panels should be used.	Yes

4.1.16 AISLE SYSTEM

Location	Category	Specifications	Mandatory
Accra	Aisle Containment Component	A cold/hot aisle containment consists of the skylights, end doors, and cabinets. The skylights are flat. The control skylights on both ends of the aisle can be installed with the camera, temperature and humidity sensor, smoke detector, aisle lighting, infrared sensor, and reserved hole for fire extinguishing nozzles. The skylights in the middle can be fixed and rotated (automatically controlled by the magnetic locks).	Yes
	Aisle Door	Aisle door needs to be full glass design	Yes
		Automatic sliding doors are secured to cabinets by screws to ensure that the cold aisle containment is properly sealed and separated. The middle of the panel is made of reinforced glass, through which you can see the cold aisle.	Yes

4.1.17 DCIM SYSTEM

Location	Category	Specifications	Mandatory
Accra	DCIM System	The monitoring system should continuously monitor the power supply and distribution equipment, UPS, air conditioning, temperature and humidity, water leakage, smoke, video surveillance, and access control devices.	Yes

Location	Category	Specifications	Mandatory
		When a parameter is abnormal or a component fails, the monitoring system generates alarms in colors, e-mail, or sound. Historical data and alarm events are recorded. All monitoring information is reported to the management platform over the standard northbound SNMP interface.	Yes
		Device information can be viewed using an app on a PAD, a mobile phone or through the website in real time to support mobile operation and maintenance. To ensure uniform planning, management, and commissioning, the micro-module monitoring system and the micro-module shall be from the same brand.	Yes
		The smart modular DC centralized collector or centralized controller should adopt dual-power supply design to ensure the reliability of smart module monitoring.	Yes
		In order to improve the reliability of the monitoring system, all the intelligent node signal transmission and the sensor power supply are all adopted by POE ring circuit.	Yes
		3D visualization: Support module layout 3D visualization on the local monitoring screen	Yes
		Temperature and humidity monitoring: Detects the environment temperature and humidity within the module.	Yes
		Water leakage monitoring: Detects water leakage near a water source in the module.	Yes
		Power distribution monitoring: - Monitors the UPS main input voltage, UPS bypass input voltage, UPS output voltage, UPS output current, UPS output frequency, UPS module output current, battery voltage, and charge/discharge current. - Monitors the total input phase voltage, current, frequency, power factor, electricity energy, active power, reactive power, apparent power, load rate, voltage and current harmonics. Monitors the current, electricity energy, switch status, contact temperature, and load rate of the IT power distribution and air conditioning branches.	Yes

4.1.18 AC POWER DISTRIBUTION CABINET

Location	Category	Specifications	Mandatory
Accra	AC power distribution cabinet	Low-voltage distribution box. Top entry/exit.	Yes
		Cable in and cable out, if necessary, busbar-cable transfer box should be included	Yes
		Incoming: 1*40A/3P/MCCB	Yes
		Output: 30*16A/3P/MCB	Yes
		800A busbar, 3P+N+PE,	Yes
		Including communication interface, CT, SPD Class B, pilot lamps, etc.	Yes

Location	Category	Specifications	Mandatory
		Digital power metering for input current, voltage, power and other parameters monitoring for input breaker; Monitor switchgear status: ON, OFF, IN, OUT, TRIP.	Yes
		Details refer to RFP and design drawings	Yes

4.1.19 IVS & CAMERA

Location	Category	Specifications	Mandatory
Accra	IVS & camera	Dome Cameras : ● Supports backlight adaptation and overcast adaptation ● 1/2.7" CMOS sensor ● 120 dB super wide dynamic range (WDR), ensuring that both foreground and background objects are clearly identified in environments with sharp light contrast ● Supports PoE power supply.	Yes
		Bullet Cameras : ● 1 TOPS computing power ● Supports backlight adaptation and overcast adaptation ● 1/2.7" CMOS sensor ● 120 dB super wide dynamic range (WDR), ensuring that both foreground and background objects are clearly identified in environments with sharp light contrast ● SuperCoding, reducing the bit rate by 50%	Yes
		IVS: ● 64-channel network video access and 320 Mbit/s video input bandwidth ● Algorithm plug-in integration and management ● Supports single-node and multi-node networks, featuring high reliability ● Safe Video, ensuring that data is still readable and writable in remaining normal disks upon a RAID5 failure ● Video buffering, ensuring video data integrity ● Recording lock, preventing important recordings from being overwritten within a specified period ● Data Safe, enabling dual backup of key system data ● Embedded Linux operating system to ensure 24/7 stable running, protecting the system from hacker attacks and viruses ● Free of system disks and available upon device startup ● Plug-and-play and automatic discovery and configuration	Yes

4.1.20 SMART R-PDU

Location	Category	Specifications	Mandatory
Accra	SMART R-PDU	Three-phase 380 V AC input voltage, 50 Hz	Yes
		Input: junction box input or standard IEC60309 three-core plug input	Yes
		Output: C13/C19 standard socket, circuit breaker protection supported by the rPDU of 32 A or higher current	Yes
		Operating temperature: -5°C to +40°C	Yes
		Operating humidity: ≤ 95% RH	Yes
		The smart rPDU can accurately and effectively monitors the real-time status changes of the current, voltage, power, and electric energy of electrical devices in the data center.	Yes

4.1.21 FIRE EXTINGUISHING SYSTEM & FIRE ALARM& DETECTION SYSTEM

Location	Category	Specifications	Mandatory
Accra	Fire extinguishing system	Gas type: FM200 (678 kg)	Yes
		Cylinder Type: Storage Cylinder.	Yes
		Cylinder capacity: 180 liters * 5 pcs	Yes
	FIRE DETECTION AND ALARM SYSTEM	The Fire Extinguishing Panel is equipped with a MODBUS RTU card, ensuring reliable communication and control between the fire system and other devices or systems within a conventional MODBUS network.	Yes
		Must be UL/FM approved with two batteries capable of supporting the system for up to 48 hours in standby and 10 hours in alarm modes	Yes
		Input modules for monitoring dry contacts, output modules for controlling external devices, combination I/O modules, enclosures accessories, cabling and full integration with the main fire alarm and suppression system	Yes
		Convectional Smoke detectors: Detectors including mounting, wiring and integration with the fire alarm control panel for early detection and alarm notification.	Yes
		Convectional Heat detectors: Detectors including mounting, wiring and integration with the fire alarm control panel for early detection and alarm notification.	Yes
	(High Sensitivity Smoke Detection) HSSD System.	VESDA Detector Unit: Sensitivity Level: A.	Yes
		Specification: Laser based smoke detection chamber, Integration aspirator (air sampling fan), multiple alarm levels (Alert, action, Fire 1, Fire 2)	Yes

Location	Category	Specifications	Mandatory
		Operating Temperature: -10 to 55 degrees. Power supply unit: Equipped with two batteries - Max 2.5A @27.6 VDC Model: VLF 500	Yes
		Input/Output (I/O) Modules : Input modules for monitoring dry contacts, output modules for controlling external devices, combination I/O modules, enclosures accessories, cabling and full integration with the main fire alarm and suppression system	Yes

4.1.22 UPS INPUT/OUTPUT DISTRIBUTION PANEL

Location	Category	Specifications	Mandatory
Accra	UPS input distribution panel	Top entry/exit; Fixed partition type. Fixed cabinet.	Yes
		Cable in and cable out, if necessary, busbar-cable transfer box should be included.	Yes
		Incoming : 2*800A/4P/MCCB, with ATS	Yes
		Output : 2*400A/3P/MCCB, 1*800A/4P/MCCB	Yes
		800A busbar, 3P+N,	Yes
		Including communication interface, CT , fuse, pilot lamps, etc.	Yes
		Digital power metering for input current, voltage, power and other parameters monitoring for input breaker	Yes
		Monitor switchgear status: ON, OFF, IN, OUT, TRIP	Yes
	UPS output distribution panel	Low-voltage distribution box. Top entry/exit.	Yes
		Cable in and cable out, if necessary, busbar-cable transfer box should be included.	Yes
		Incoming : 2*400A/4P/MCCB	Yes
		Output : 2*400A/4P/MCCB	Yes
		800A busbar, 3P+N+PE,	Yes
		Including communication interface, CT, SPD Class B, pilot lamps, etc.	Yes
		Digital power metering for input current, voltage, power and other parameters monitoring for input breaker	Yes
		Monitor switchgear status: ON, OFF, IN, OUT, TRIP.	Yes

4.1.24 FINGERPRINT LOCK

Location	Category	Specifications	Mandatory
Accra	Access control system	An aisle-level access control: ● The access controller should support multiple access control devices, such as fingerprint, and IC reader with a keypad, password and fingerprint. ● Rated operating voltage: 12V DC$\pm$15% ● Rated operating current: 300mA$\pm$15% ● Card type supported: IC card ● Authorized storage: A maximum of 3000 authorized users, with a maximum of 6000 fingerprints Communications mode: RS485 and Wiegand communications ports	Yes
		Cabinet Access Control System: ● The access controller should support multiple access control devices, such as fingerprint, and IC reader with a keypad and fingerprint. Rated operating voltage: 12V DC$\pm$15% ● Rated operating current: 300mA$\pm$15% ● Card type supported: IC card ● Authorized storage: A maximum of 3000 authorized users, with a maximum of 6000 fingerprints Communications mode: RS485 and Wiegand communications ports	Yes
		Room aisle-level access control: ● The access controller should support multiple access control devices, such as fingerprint, and IC reader with a keypad, password and fingerprint. ● Rated operating voltage: 12V DC$\pm$15% ● Rated operating current: 300mA$\pm$15% ● Card type supported: IC card ● Authorized storage: A maximum of 3000 authorized users, with a maximum of 6000 fingerprints Communications mode: RS485 and Wiegand communications ports	Yes

4.1.25 LIGHTING SYSTEM

Location	Category	Specifications	Mandatory
Accra	Lighting system	LED Lamp: Double tube LED With Highly Efficient Control Gear 2x18w ,3600Lm, 1.2m, indoor type	Yes
		2.Emergency Light: Emergency Single tube LED With Highly Efficient Control Gear 1x18w ,1800Lm, 1.2m, indoor type Illuminated Directional sign with Battery for 3Hr Autonom,1W, 75lm	Yes

1.2 EOX EQUIPMENT REPLACEMENT**1.2.1 Core Router**

Data Center	Equipment Type	QTY	Indicator	Specification	Mandatory
Accra	Core Router	2	Hardware capability	The proposed router must support height(U) no more than 3U	-
				The proposed router should support switching capacity no less than 4.8 Tbps (Bidirectional).	Yes
				The proposed router should have no less than 6 services slots for expansion in the future.	Yes
				The proposed router should support 400GE/100GE/50GE/40GE/25GE/ 10GE/GE interface.	Yes
				The 100G interfaces should support QSFP28 optical module and should support adjustable to 40G and 50G.	Yes
				A single slot supports a maximum forwarding capacity of 400 Gbps.	Yes
				The proposed router should support redundancy for power and fans.	Yes
				The proposed router should support Flexible Ethernet.	Yes
			Protocol Feature	The proposed router should support static route, OSPF, IS-IS, BGP, RIPng, OSPFv3, IS-ISv6.	Yes
				The proposed router should support IPv4/IPv6 Dual Stack.	Yes
				The proposed router must support FIBv4/v6 at least 4M/2M	Yes
				The proposed router must support RIB v4/v6 at least 10M/5M	Yes
				The proposed router should support SRv6 and SRv6 Policy. SRv6 is mature for commercial use, ensuring stable service deployment. Authoritative third-party certificates are required. Such feature is needed SRv6 middle-node, protection, SRv6 micro-loop avoidance, SRv6 OAM, SRv6 SFC, SRv6 Flex-algo, APN6.	Yes
				Ethernet interfaces of the proposed router should support VLAN and VPLS services.	Yes

Data Center	Equipment Type	QTY	Indicator	Specification	Mandatory
				The proposed router must support ACL at least 32k.	Yes
				The proposed router must support MAC address at least 1M	Yes
				The proposed router should support SRv6 Policy, support EVPN over SRv6 policy; should provide the configuration examples in the official product document to prove it.	Yes
				The proposed router should support EVPN as the VXLAN control plane, and support MAC address learning by EVPN.	Yes
				The proposed router should support hardware BFD. BFD detect package send period should within 5ms.	Yes
				The proposed router must support BFD for VRRP, OSPF, ISIS, BGP, LDP, TE, SR, VRRPv6, OSPFv3, ISISv6, BGP4+, SRv6, PW	Yes
				The proposed router should support IFIT (in-situ Flow Information Telemetry) for in-service detection, smart flow selection and real-time monitoring, which follow the standard "draft-song-opsawg-IFIT-framework-05";	Yes
				The proposed router should support MACsec、IPsec.	Yes

Data Center	Equipment Type	QTY	Indicator	Specification	Mandatory
Kumasi	Core Router	2	Hardware capability	The proposed router must support height(U) no more than 3U	Yes
				The proposed router should support switching capacity no less than 4.8 Tbps (Bidirectional).	Yes
				The proposed router should have no less than 6 services slots for expansion in the future.	Yes
				The proposed router should support 400GE/100GE/50GE/40GE/25GE/ 10GE/GE interface.	Yes
				The 100G interfaces should support QSFP28 optical module and should support adjustable to 40G and 50G.	Yes
				A single slot supports a maximum forwarding capacity of 400 Gbps.	Yes
				The proposed router should support redundancy for power and fans.	Yes
				The proposed router should support Flexible Ethernet.	Yes
			Protocol Feature	The proposed router should support static route, OSPF, IS-IS, BGP, RIPng, OSPFv3, IS-ISv6.	Yes
				The proposed router should support IPv4/IPv6 Dual Stack.	Yes
				The proposed router must support FIBv4/v6 at least 4M/2M	Yes
				The proposed router must support RIB v4/v6 at least 10M/5M	Yes
				The proposed router should support SRv6 and SRv6 Policy. SRv6 is mature for commercial use, ensuring stable service deployment. Authoritative third-party certificates are required. Such feature is needed SRv6 middle-node, protection, SRv6 micro-loop avoidance, SRv6 OAM, SRv6 SFC, SRv6 Flex-algo, APN6.	Yes

Data Center	Equipment Type	QTY	Indicator	Specification	Mandatory
				Ethernet interfaces of the proposed router should support VLAN and VPLS services.	Yes
				The proposed router must support ACL at least 32k.	Yes
				The proposed router must support MAC address at least 1M	Yes
				The proposed router should support SRv6 Policy, support EVPN over SRv6 policy; should provide the configuration examples in the official product document to prove it.	Yes
				The proposed router should support EVPN as the VXLAN control plane, and support MAC address learning by EVPN.	Yes
				The proposed router should support hardware BFD. BFD detect package send period should within 5ms.	Yes
				The proposed router must support BFD for VRRP, OSPF, ISIS, BGP, LDP, TE, SR, VRRPv6, OSPFv3, ISISv6, BGP4+, SRv6, PW	Yes
				The proposed router should support IFIT (in-situ Flow Information Telemetry) for in-service detection, smart flow selection and real-time monitoring, which follow the standard "draft-song-opsawg-IFIT-framework-05";	Yes
				The proposed router should support MACsec、IPsec.	Yes

1.2.2IGW

Data Center	Equipment Type	QTY	Indicator	Specification	Mandatory
Accra	IGW Router	2	Hardware capability	The proposed router must support height(U) no more than 2U	Yes
				The proposed router should support switching capacity no less than 2.4 Tbps (Bidirectional).	Yes
				The proposed router should have at least no less than 2 services slots for expansion in the future.	Yes
				The proposed router should support 400GE/100GE/50GE/40GE/25GE/ 10GE/GE interface.	Yes
				The 100G interfaces should support QSFP28 optical module and should support adjustable to 40G and 50G.	Yes
				A single slot supports a maximum forwarding capacity of 400 Gbps.	Yes
				The proposed router should support redundancy for power and fans.	-
				The proposed router should support Flexible Ethernet.	Yes
			Protocol Feature	The proposed router should support static route, OSPF, IS-IS, BGP, RIPng, OSPFv3, IS-ISv6.	Yes
				The proposed router should support IPv4/IPv6 Dual Stack.	Yes
				The proposed router must support FIBv4/v6 at least 4M/2M	Yes
				The proposed router must support RIB v4/v6 at least 10M/5M	Yes

Data Center	Equipment Type	QTY	Indicator	Specification	Mandatory
				The proposed router should support SRv6 and SRv6 Policy. SRv6 is mature for commercial use, ensuring stable service deployment. Authoritative third-party certificates are required. Such feature is needed SRv6 middle-node, protection, SRv6 micro-loop avoidance, SRv6 OAM, SRv6 SFC, SRv6 Flex-algo, APN6.	Yes
				Ethernet interfaces of the proposed router should support VLAN and VPLS services.	Yes
				The proposed router must support ACL at least 32k	Yes
				The proposed router must support MAC address at least 1M	Yes
				The proposed router should support SRv6 Policy, support EVPN over SRv6 policy; should provide the configuration examples in the official product document to prove it.	Yes
				The proposed router should support EVPN as the VXLAN control plane, and support MAC address learning by EVPN.	Yes
				The proposed router should support hardware BFD. BFD detect package send period should within 5ms.	Yes
				The proposed router must support BFD for VRRP, OSPF, ISIS, BGP, LDP, TE, SR, VRRPv6, OSPFv3, ISISv6, BGP4+, SRv6, PW	Yes
				The proposed router should support IFIT (in-situ Flow Information Telemetry) for in-service detection, smart flow selection and real-time monitoring, which follow the standard "draft-song-opsawg-IFIT-framework-05";	Yes
				The proposed router should support MACsec、IPsec.	Yes

Data Center	Equipment Type	QTY	Indicator	Specification	Mandatory
Kumasi	IGW Router	2	Hardware capability	The proposed router must support height(U) no more than 2U	Yes
				The proposed router should support switching capacity of no less than 2.4 Tbps (Bidirectional).	Yes
				The proposed router should have at least no less than 2 services slots for expansion in the future.	Yes
				The proposed router should support 400GE/100GE/50GE/40GE/25GE/ 10GE/GE interface.	Yes
				The 100G interfaces should support QSFP28 optical module and should support adjustable to 40G and 50G.	Yes
				A single slot supports a maximum forwarding capacity of 400 Gbps.	Yes
				The proposed router should support redundancy for power and fans.	Yes
				The proposed router should support Flexible Ethernet.	Yes
			Protocol Feature	The proposed router should support static route, OSPF, IS-IS, BGP, RIPng, OSPFv3, IS-ISv6.	Yes
				The proposed router should support IPv4/IPv6 Dual Stack.	Yes
				The proposed router must support FIBv4/v6 at least 4M/2M	Yes

Data Center	Equipment Type	QTY	Indicator	Specification	Mandatory
				The proposed router must support RIB v4/v6 at least 10M/5M	Yes
				The proposed router should support SRv6 and SRv6 Policy. SRv6 is mature for commercial use, ensuring stable service deployment. Authoritative third-party certificates are required. Such feature is needed SRv6 middle-node, protection, SRv6 micro-loop avoidance, SRv6 OAM, SRv6 SFC, SRv6 Flex-algo, APN6.	Yes
				Ethernet interfaces of the proposed router should support VLAN and VPLS services.	Yes
				The proposed router must support ACL at least 32k	Yes
				The proposed router must support MAC address at least 1M	Yes
				The proposed router should support SRv6 Policy, support EVPN over SRv6 policy; should provide the configuration examples in the official product document to prove it.	Yes
				The proposed router should support EVPN as the VXLAN control plane, and support MAC address learning by EVPN.	Yes
				The proposed router should support hardware BFD. BFD detect package send period should within 5ms.	Yes
				The proposed router must support BFD for VRRP, OSPF, ISIS, BGP, LDP, TE, SR, VRRPv6, OSPFv3, ISISv6, BGP4+, SRv6, PW	Yes
				The proposed router should support IFIT (in-situ Flow Information Telemetry) for in-service detection, smart flow selection and real-time monitoring, which follow the standard "draft-song-opsawg-IFIT-framework-05";	Yes
				The proposed router should support MACsec、IPsec.	Yes

1.2.3WAN ROUTER

Data Center	Equipment Type	QTY	Indicator	Specification	Mandatory
Accra	WAN Router	2	Hardware capability	The proposed router must support height(U) no more than 2U	Yes
				The proposed router should support switching capacity no less than 2.4 Tbps (Bidirectional).	Yes
				The proposed router should have at least no less than 2 services slots for expansion in the future.	Yes
				The proposed router should support 400GE/100GE/50GE/40GE/25GE/ 10GE/GE interface.	Yes
				The 100G interfaces should support QSFP28 optical module and should support adjustable to 40G and 50G.	Yes
				A single slot supports a maximum forwarding capacity of 400 Gbps.	Yes
				The proposed router should support redundancy for power and fans.	Yes
				The proposed router should support Flexible Ethernet.	Yes
			Protocol Feature	The proposed router should support static route, OSPF, IS-IS, BGP, RIPng, OSPFv3, IS-ISv6.	Yes

Data Center	Equipment Type	QTY	Indicator	Specification	Mandatory
				The proposed router should support IPv4/IPv6 Dual Stack.	Yes
				The proposed router must support FIBv4/v6 at least 4M/2M	Yes
				The proposed router must support RIB v4/v6 at least 10M/5M	Yes
				The proposed router should support SRv6 and SRv6 Policy. SRv6 is mature for commercial use, ensuring stable service deployment. Authoritative third-party certificates are required. Such feature is needed SRv6 middle-node, protection, SRv6 micro-loop avoidance, SRv6 OAM, SRv6 SFC, SRv6 Flex-algo, APN6.	Yes
				Ethernet interfaces of the proposed router should support VLAN and VPLS services.	Yes
				The proposed router must support ACL at least 32k	Yes
				The proposed router must support MAC address at least 1M	Yes
				The proposed router should support SRv6 Policy, support EVPN over SRv6 policy; should provide the configuration examples in the official product document to prove it.	Yes
				The proposed router should support EVPN as the VXLAN control plane, and support MAC address learning by EVPN.	Yes
				The proposed router should support hardware BFD. BFD detect package send period should within 5ms.	Yes
				The proposed router must support BFD for VRRP, OSPF, ISIS, BGP, LDP, TE, SR, VRRPv6, OSPFv3, ISISv6, BGP4+, SRv6,PW	Yes
				The proposed router should support IFIT (in-situ Flow Information Telemetry) for in-service detection, smart flow selection and real-time monitoring, which follow the standard "draft-song-opsawg-IFIT-framework-05";	Yes
				The proposed router should support MACsec、IPsec.	Yes

Data Center	Equipment Type	QTY	Indicator	Specification	Mandatory
Kumasi	WAN Router	2	Hardware capability	The proposed router must support height(U) no more than 2U	Yes
				The proposed router should support switching capacity of no less than 2.4 Tbps (Bidirectional).	Yes
				The proposed router should have at least no less than 2 services slots for expansion in the future.	Yes
				The proposed router should support 400GE/100GE/50GE/40GE/25GE/ 10GE/GE interface.	Yes
				The 100G interfaces should support QSFP28 optical module and should support adjustable to 40G and 50G.	Yes
				A single slot supports a maximum forwarding capacity of 400 Gbps.	Yes
				The proposed router should support redundancy for power and fans.	-
				The proposed router should support Flexible Ethernet.	Yes

Data Center	Equipment Type	QTY	Indicator	Specification	Mandatory
			Protocol Feature	The proposed router should support static route, OSPF, IS-IS, BGP, RIPng, OSPFv3, IS-ISv6.	-
				The proposed router should support IPv4/IPv6 Dual Stack.	-
				The proposed router must support FIBv4/v6 at least 4M/2M	Yes
				The proposed router must support RIB v4/v6 at least 10M/5M	-
				The proposed router should support SRv6 and SRv6 Policy. SRv6 is mature for commercial use, ensuring stable service deployment. Authoritative third-party certificates are required. Such feature is needed SRv6 middle-node, protection, SRv6 micro-loop avoidance, SRv6 OAM, SRv6 SFC, SRv6 Flex-algo, APN6.	Yes
				Ethernet interfaces of the proposed router should support VLAN and VPLS services.	-
				The proposed router must support ACL at least 32k	-
				The proposed router must support MAC address at least 1M	Yes
				The proposed router should support SRv6 Policy, support EVPN over SRv6 policy; should provide the configuration examples in the official product document to prove it.	-
				The proposed router should support EVPN as the VXLAN control plane, and support MAC address learning by EVPN.	-
				The proposed router should support hardware BFD. BFD detect package send period should within 5ms.	Yes
				The proposed router must support BFD for VRRP, OSPF, ISIS, BGP, LDP, TE, SR, VRRPv6, OSPFv3, ISISv6, BGP4+, SRv6, PW	-
				The proposed router should support IFIT (in-situ Flow Information Telemetry) for in-service detection, smart flow selection and real-time monitoring, which follow the standard "draft-song-opsawg-IFIT-framework-05";	Yes
				The proposed router should support MACsec、IPsec.	Yes

1.2.4 WAN SWITCH

Data Center	Equipment Type	QTY	Indicator	Specification	Mandatory
Accra	WAN Switch for DC Infrastructure	2	Size	2U	-
			Switching capacity	The switching capacity is no less than 16Tbit/s.	Yes
			Packet forwarding rate	packet forwarding rate is no less than 2400 Mpps.	Yes
			Port specification	The switch should support 4 service slot, each slot should support the following line cards : 1.16-port 100GE line card 2.24-port 25GE and 2-port 100GE	Yes

Data Center	Equipment Type	QTY	Indicator	Specification	Mandatory
				line card. The 25GE Port supports backward compatibility with 10GE.	
				Shall be equipped with at least 2 pcs 16-port 100GE line card and 2 pcs 24-port 25GE line card. Shall be equipped with at least 16 pcs 100G-QSFP28 optical transceivers	Yes
			Hardware reliability	The switch supports redundant power modules in 1+1 backup mode.	Yes
			System reliability	The switch supports inter-chassis link aggregation M-LAG technology which has the independent control planes.	Yes
				Switches support hardware-based BFD at the interval of 3.3 ms.	Yes
			Forwarding Table Capacity	Support FIB of larger than 1.5M.	Yes
				Support MAC of larger than 640K MAC address	Yes
				Support ACL of larger than 30K	Yes
			MACsec feature	MACsec is supported	Yes
			Monitoring and visualization	Support telemetry, which supports sampling of device status data (such as interface traffic statistics, CPU data, memory data, etc.) and report to analyze platform for analysis and visibility.	Yes
				The sampling interval can be configured to less than 100ms or even real-time.	Yes
				Supports logging of device packet loss events (such as abnormal forwarding, full buffer, ACL deny, etc.), and reports to analyze platform for visibility of the events.	Yes

Data Center	Equipment Type	QTY	Indicator	Specification	Mandatory
Kumasi	WAN Switch for DC Infrastructure	2	Size	2U	-
			Switching capacity	The switching capacity is no less than 16Tbit/s.	Yes
			Packet forwarding rate	packet forwarding rate is no less than 2400 Mpps.	Yes
			Port specification	The switch should support 4 service slot, each slot should support the following line cards: 1.16-port 100GE line card 2.24-port 25GE and 2-port 100GE line card.	Yes

Data Center	Equipment Type	QTY	Indicator	Specification	Mandatory
				The 25GE Port supports backward compatibility with 10GE.	
				Shall be equipped with at least 2 pcs 16-port 100GE line card and 2 pcs 24-port 25GE line card. Shall be equipped with at least 16 pcs 100G-QSFP28 optical transceivers	Yes
			Hardware reliability	The switch supports redundant power modules in 1+1 backup mode.	-
			System reliability	The switch supports inter-chassis link aggregation M-LAG technology which has the independent control planes.	Yes
				Switches support hardware-based BFD at the interval of 3.3 ms.	Yes
			Forwarding Table Capacity	Support FIB of larger than 1.5M.	Yes
				Support MAC of larger than 640K MAC address	Yes
				Support ACL of larger than 30K	Yes
			MACsec feature	MACsec is supported	Yes
			Monitoring and visualization	Support telemetry, which supports sampling of device status data (such as interface traffic statistics, CPU data, memory data, etc.) and report to analyze platform for analysis and visibility.	Yes
				The sampling interval can be configured to less than 100ms or even real-time.	Yes
				Supports logging of device packet loss events (such as abnormal forwarding, full buffer, ACL deny, etc.), and reports to analyze platform for visibility of the events.	Yes

1.2.5 CORE SWITCH

Data Center	Equipment Type	QTY	Indicator	Specification	Mandatory
Accra	Core Switch for DC Infrastructure	2	Size	16U	-
			switching capacity	The switching capacity is no less than 350Tbit/s to support future evolution to higher capacity line cards.	Yes
			Packet forwarding rate	packet forwarding rate is no less than 50,000 Mpps.	Yes
			Port specification	The switch should support 8 service slots, each slot should support the following line cards:	Port specification

Data Center	Equipment Type	QTY	Indicator	Specification	Mandatory
				1.18-port 400GE line card 2.36-port 100GE line card	
				Shall be equipped with at least 2 pcs 36-port 100GE line card; Each card shall be equipped with at least 20 pcs 100G-QSFP28 optical transceivers.	Yes
			Hardware reliability	Power modules support dual inputs, work in N+1 or N+N hot standby mode	Yes
				Switching fabric support N+1 redundancy for all line card	Yes
				Fan tray redundancy design. The number of fan trays must be greater than or equal to 3.	Yes
				The number of SFU slots can be expanded to at least 8, meeting 400GE expansion requirements in the future.	Yes
			Reliability	The switch supports inter-chassis link aggregation M-LAG technology which has the independent control planes.	Yes
				Switches support hardware-based BFD at the interval of 3.3 ms.	Yes
			Forwarding Table Capacity	Support FIB of larger than 1.5M	Yes
				Support MAC of larger than 640K MAC address	Yes
				Support ACL of larger than 30K	Yes
			MACsec feature	MACsec is supported	Yes
			Monitoring and visualization	Support telemetry, which supports sampling of device status data (such as interface traffic statistics, CPU data, memory data, etc.) and report to analyze platform for analysis and visibility.	Yes
				The sampling interval can be configured to less than 100ms or even real-time.	Yes
				Supports logging of device packet loss events (such as abnormal forwarding, full buffer, ACL deny, etc.), and reports to analyze platform for visibility of the events.	Yes

Data Center	Equipment Type	QTY	Indicator	Specification	Mandatory
Kumasi	Core Switch for DC Infrastructure	2	Size	16U	-
			switching capacity	The switching capacity is no less than 350Tbit/s to support future evolution to higher capacity line cards.	Yes

Data Center	Equipment Type	QTY	Indicator	Specification	Mandatory
			Packet forwarding rate	packet forwarding rate is no less than 50,000 Mpps.	Yes
			Port specification	The switch should support 8 service slots, each slot should support the following line cards: 1.18-port 400GE line card 2.36-port 100GE line card	Port specification
				Shall be equipped with at least 2 pcs 36-port 100GE line card; Each card shall be equipped with at least 20 pcs 100G-QSFP28 optical transceivers.	Yes
			Hardware reliability	Power modules support dual inputs, work in N+1 or N+N hot standby mode	Yes
				Switching fabric support N+1 redundancy for all line card	-Yes
				Fan tray redundancy design. The number of fan trays must be greater than or equal to 3.	Yes
				The number of SFU slots can be expanded to at least 8, meeting 400GE expansion requirements in the future.	Yes
			Reliability	The switch supports inter-chassis link aggregation M-LAG technology which has the independent control planes.	Yes
				Switches support hardware-based BFD at the interval of 3.3 ms.	Yes
			Forwarding Table Capacity	Support FIB of larger than 1.5M	Yes
				Support MAC of larger than 640K MAC address	Yes
				Support ACL of larger than 30K	Yes
			MACsec feature	MACsec is supported	Yes
			Monitoring and visualization	Support telemetry, which supports sampling of device status data (such as interface traffic statistics, CPU data, memory data, etc.) and report to analyze platform for analysis and visibility.	Yes
				The sampling interval can be configured to less than 100ms or even real-time.	Yes
				Supports logging of device packet loss events (such as abnormal forwarding, full buffer, ACL deny, etc.), and reports to analyze platform for visibility of the events.	Yes

1.2.6 BORDER LEAF SWITCH

Data Center	Equipment Type	QTY	Indicator	Specification	Mandatory
Accra	Border Leaf for DC Infrastructure	2	Size	1U	-
			Switching capacity	The switching capacity is no less than 8Tbit/s.	Yes
			Packet forwarding rate	packet forwarding rate is no less than 1200 Mpps.	Yes
			Port specification	The switch provides a minimum of 8*100G interfaces and 48*25GE interfaces.	Yes
				Shall be equipped with at least 8 pcs 100G-QSFP28 optical transceivers.	Yes
			Hardware reliability	The switch supports redundant power modules in 1+1 backup mode.	Yes
			System reliability	The switch supports inter-chassis link aggregation M-LAG technology which has the independent control planes.	Yes
				Switches support hardware-based BFD at the interval of 3.3 ms.	Yes
			Forwarding Table Capacity	Support FIB of larger than 1.5M.	Yes
				Support MAC of larger than 640K MAC address	Yes
				Support ACL of larger than 30K	Yes
			MACsec feature	MACsec is supported	Yes
			Monitoring and visualization	Support telemetry, which supports sampling of device status data (such as interface traffic statistics, CPU data, memory data, etc.) and report to analyze platform for analysis and visibility.	Yes
				The sampling interval can be configured to less than 100ms or even real-time.	Yes
				Supports logging of device packet loss events (such as abnormal forwarding, full buffer, ACL deny, etc.), and reports to analyze platform for visibility of the events.	Yes

Data Center	Equipment Type	QTY	Indicator	Specification	Mandatory
Kumasi	Border Leaf for DC Infrastructure	2	Size	1U	-
			Switching capacity	The switching capacity is no less than 8Tbit/s.	Yes
			Packet forwarding rate	packet forwarding rate is no less than 1200 Mpps.	Yes
			Port specification	The switch provides a minimum of 8*100G interfaces and 48*25GE interfaces.	Yes
				Shall be equipped with at least 8 pcs 100G-QSFP28 optical transceivers.	Yes
			Hardware reliability	The switch supports redundant power modules in 1+1 backup mode.	Yes

Data Center	Equipment Type	QTY	Indicator	Specification	Mandatory
			System reliability	The switch supports inter-chassis link aggregation M-LAG technology which has the independent control planes.	Yes
				Switches support hardware-based BFD at the interval of 3.3 ms.	Yes
			Forwarding Table Capacity	Support FIB of larger than 1.5M.	Yes
				Support MAC of larger than 640K MAC address	Yes
				Support ACL of larger than 30K	Yes
			MACsec feature	MACsec is supported	Yes
			Monitoring and visualization	Support telemetry, which supports sampling of device status data (such as interface traffic statistics, CPU data, memory data, etc.) and report to analyze platform for analysis and visibility.	Yes
				The sampling interval can be configured to less than 100ms or even real-time.	Yes
				Supports logging of device packet loss events (such as abnormal forwarding, full buffer, ACL deny, etc.), and reports to analyze platform for visibility of the events.	Yes

1.2.7 SPINE SWITCH

Data Center	Equipment Type	QTY	Indicator	Specification	Mandatory
Accra	Spine Switch for DC Infrastructure	2	Size	16U	-
			switching capacity	The switching capacity is no less than 350Tbit/s to support future evolution to higher capacity line cards.	Yes
			Packet forwarding rate	packet forwarding rate is no less than 50,000 Mpps.	Yes
			Port specification	The switch should support 8 service slots, each slot should support the following line cards: 1.18-port 400GE line card 2.36-port 100GE line card	Yes
				Shall be equipped with at least 2 pcs 36-port 100GE line card; Each card shall be equipped with at least 20 pcs 100G-QSFP28 optical transceivers.	Yes
			Hardware reliability	Power modules support dual inputs, work in N+1 or N+N hot standby mode	Yes
				Switching fabric support N+1 redundancy for all line card	Yes
				Fan tray redundancy design. The number of fan trays must be greater than or equal to 3.	Yes

Data Center	Equipment Type	QTY	Indicator	Specification	Mandatory
				The number of SFU slots can be expanded to at least 8, meeting 400GE expansion requirements in the future.	Yes
			Reliability	The switch supports inter-chassis link aggregation M-LAG technology which has the independent control planes.	Yes
				Switches support hardware-based BFD at the interval of 3.3 ms.	Yes
			Forwarding Table Capacity	Support FIB of larger than 1.5M	Yes
				Support MAC of larger than 640K MAC address	Yes
				Support ACL of larger than 30K	-
			MACsec feature	MACsec is supported	Yes
			Monitoring and visualization	Support telemetry, which supports sampling of device status data (such as interface traffic statistics, CPU data, memory data, etc.) and report to analyze platform for analysis and visibility.	Yes
				The sampling interval can be configured to less than 100ms or even real-time.	Yes
				Supports logging of device packet loss events (such as abnormal forwarding, full buffer, ACL deny, etc.), and reports to analyze platform for visibility of the events.	Yes

Data Center	Equipment Type	QTY	Indicator	Specification	Mandatory
Kumasi	Spine Switch for DC Infrastructure	2	Size	16U	-
			switching capacity	The switching capacity is no less than 350Tbit/s to support future evolution to higher capacity line cards.	Yes
			Packet forwarding rate	packet forwarding rate is no less than 50,000 Mpps.	Yes
			Port specification	The switch should support 8 service slots, each slot should support the following line cards: 1.18-port 400GE line card 2.36-port 100GE line card	Yes
				Shall be equipped with at least 2 pcs 36-port 100GE line card; Each card shall be equipped with at least 20 pcs 100G-QSFP28 optical transceivers.	Yes
			Hardware reliability	Power modules support dual inputs, work in N+1 or N+N hot standby mode	Yes
				Switching fabric support N+1 redundancy for all line card	Yes
				Fan tray redundancy design. The number of fan trays must be greater than or equal to 3.	Yes
				The number of SFU slots can be expanded to at least 8, meeting 400GE expansion requirements in the future.	Yes

Data Center	Equipment Type	QTY	Indicator	Specification	Mandatory
			Reliability	The switch supports inter-chassis link aggregation M-LAG technology which has the independent control planes.	Yes
				Switches support hardware-based BFD at the interval of 3.3 ms.	Yes
			Forwarding Table Capacity	Support FIB of larger than 1.5M	Yes
				Support MAC of larger than 640K MAC address	Yes
				Support ACL of larger than 30K	Yes
			MACsec feature	MACsec is supported	Yes
			Monitoring and visualization	Support telemetry, which supports sampling of device status data (such as interface traffic statistics, CPU data, memory data, etc.) and report to analyze platform for analysis and visibility.	Yes
				The sampling interval can be configured to less than 100ms or even real-time.	Yes
				Supports logging of device packet loss events (such as abnormal forwarding, full buffer, ACL deny, etc.), and reports to analyze platform for visibility of the events.	Yes

1.2.8DCN NETWORK CONTROLLER

Data Center	Equipment Type	QTY	Category	Specifications	Mandatory
Accra	NETWORK CONTROLLER PLATFORM	1	GUI Network Service Configuration	Based on a GUI, network services can be configured by dragging and dropping network models such as logical routers, logical switches, and logical firewalls. This WYSIWYG approach shields users from complex command-line configurations, simplifies the service deployment process, and enhances efficiency.	Yes
			Network topology visualization	Supports displaying the physical topology, logical topology, and application topology of the network; supports viewing network link status information.	Yes
			Inter-application network simulation and navigation	Supports inputting IP address information between applications for network path navigation, identifies the optimal path, conducts business simulation, thereby enabling pre-verification of business deployment in advance.	Yes
			Business Rollback	Supports business rollback at different granularities based on the entire network, tenants, and devices, efficiently and flexibly enabling business deployment and verification.	Yes

Data Center	Equipment Type	QTY	Category	Specifications	Mandatory
			Device management	Supports viewing switch devices across the entire network, including basic device information, performance and alerts, configurations, etc.	Yes
			Ecological Integration	Provide a rich set of APIs to support integration and connectivity with customer application systems or network operation systems.	Yes
				Support integration with mainstream vendors' devices to achieve cross-vendor device management.	Yes

1.2.9DCN NETWORK ANALYZER

Data Center	Equipment Type	QTY	Category	Specifications	Mandatory
Accra	NETWORK ANALYZER PLATFORM	1	Network health status visualization	Achieving Deep Network Health Checks Based on Telemetry and AI Technologies. Visualize network protocol status, network link status, network device status, internal device table usage status of network devices, optical module information.	Yes
			Automatically Generate Network Reports	Based on the visualization of network health status, the reporting cycle can be set to automatically generate reports, which are then sent to the designated operations personnel's email.	Yes
			Suggestions on fixing network risks	Quickly and effectively identify network risks, and provide feasible network repair recommendations. Once confirmed by the user, these recommendations can be automatically deployed to the devices for risk or issue resolution.	Yes

1.2.10 WAN NETWORK CONTROLLER

Data Center	Equipment Type	QTY	Category	Specifications	Mandatory
Accra	NETWORK CONTROLLER PLATFORM	1	Controller architecture and features	The SDN controller has a unified service monitoring portal that centrally displays layered service path topology, service resource status, and service alarms. It would be advantageous to include operating screenshots from a commercial product.	Yes
			NE discovery and basic configuration	The SDN controller automatically discovers NEs based on IP address segments, collects network-wide topology information, and displays link attributes (ports, NEs, and status) in the	Yes

Data Center	Equipment Type	QTY	Category	Specifications	Mandatory
				topology. The topology supports subnetting by area.	
			Tunnel management	SRv6 Policies can be delivered. Deployment can be simplified by customizing tunnel templates, planning and creating tunnel groups, and importing files.	Yes
				The SDN controller supports multi-factor path computation for SRv6 Policies, such as packet loss rates, latency ranges, real-time bandwidth, disjoint primary and backup paths, and explicit paths. It also supports multiple path computation policies, including least cost, minimum latency, bandwidth balancing, and maximum availability.	Yes
			Digital map	The GIS map can operate in both online and offline modes. It leverages the BGP-LS, SNMP, and telemetry protocols to automatically discover topologies. Additionally, the topology provides views of bandwidth utilization, latency, packet loss rate, and NE power consumption. It would be advantageous to include operation screenshots from a commercial product.	Yes
				The SDN controller supports multi-layer topology visualization, including the physical topology, Layer 3 logical topology, and slice topology.	Yes
				Users can monitor the quality status of SRv6 Policies, including the real-time path, speed, latency, and packet loss rate. Authoritative third-party test reports are provided.	Yes
				Users can view the hop-by-hop path and historical status changes of a VPN service. Authoritative third-party test reports are provided.	Yes
			Intelligent network optimization	The SDN controller supports path optimization, allowing for automatic or manual optimization based on changes in indicators such as network latency, packet loss, and congestion. The thresholds and conditions for triggering path optimization can be customized and combined as needed. It would be advantageous to include operation screenshots from a commercial product.	Yes
				The topology view displays path changes of historical optimization records. Users can query the optimization time, mode, result, and	Yes

Data Center	Equipment Type	QTY	Category	Specifications	Mandatory
				operator. In addition to viewing the optimization benefits, users can compare link bandwidth before and after optimization. It would be advantageous to include operation screenshots from a commercial product.	
			Analytical report	The SDN controller collects and monitors performance data from dimensions such as NEs, tunnels, services, links, boards, and interfaces. It would be advantageous to include operation screenshots from a commercial product.	Yes
			IFIT	The SDN controller measures service quality with IFIT. If poor quality is detected, the measurement mode automatically switches from E2E to hop-by-hop and reports poor-QoE alarms. Hop-by-hop paths and poor-quality nodes/links can be displayed within minutes, along with the packet loss, latency, and jitter. The controller also supports minute-level path history and quality backtracking for records within one week. It would be advantageous to include operation screenshots from a commercial product.	Yes
			NBI	The SDN controller provides unified NBIs to support resource management, slice/tunnel/VPN service management, and performance/alarm monitoring. It can interconnect with upper-layer systems through RESTful, CORBA, XML, SNMP, performance text, and Kafka NBIs.	Yes
			SBI	The SDN controller supports standard SBI protocols, including NETCONF, SNMP, SSH, telemetry, PCEP, and BGP-LS.	Yes
			Certification	The SDN controller has been certified for IPv6+ 2.0 solution capability by a third-party organization.	Yes

1. 2. 11 LAPTOP

Data Center	Equipment Type	Quantity	Category	Specification	Mandatory
Accra	Network Engineers Laptop	15	Operating system	Windows 11 Pro	Yes
			Display	14.2 inches OLED	Yes
				93% Screen-to-body Ratio	Yes
				3:2 Aspect Ratio	Yes
				3120 × 2080, 264 PPI and 120 Hz Refresh Rate	Yes
				10-point multi-touch sensitive screen	Yes
			Processor	Intel® Core™ Ultra 7 processors 155H	Yes
			Graphics	Intel® Arc™ Graphics	Yes
			Memory	16GB	Yes
			Storage	1 TB NVMe PCIe SSD	Yes
			Battery	Lithium polymer 70 Wh (rated capacity)	Yes
			Connectivity	802.11a/b/g/n/ac/ax, 160MHz	Yes
				2.4 GHz/5 GHz/6 GHz	Yes
				2 × 2 MIMO	Yes
				WPA/WPA2/WPA3	Yes
				Bluetooth 5.3	Yes
			Ports	Thunderbolt™ 4 × 2	Yes
				USB-C × 1	Yes
				Support camera privacy switch × 1	Yes
			Power Button	Fingerprint Power Button	Yes
			Camera	1080P HD camera	Yes
			Audio	Speaker × 6	Yes
				Microphone × 4	Yes
Accra	System Engineers Laptop	15	Operating system	Windows 11 Pro	Yes
			Display	14.2 inches OLED	Yes
				93% Screen-to-body Ratio	Yes
				3:2 Aspect Ratio	Yes
				3120 × 2080, 264 PPI and 120 Hz Refresh Rate	Yes
				10-point multi-touch sensitive screen	Yes
			Processor	Intel® Core™ Ultra 7 processors 155H	Yes
			Graphics	Intel® Arc™ Graphics	Yes
			Memory	16GB	Yes
			Storage	1 TB NVMe PCIe SSD	Yes
			Battery	Lithium polymer 70 Wh (rated capacity)	Yes
			Connectivity	802.11a/b/g/n/ac/ax, 160MHz	Yes
				2.4 GHz/5 GHz/6 GHz	Yes

Data Center	Equipment Type	Quantity	Category	Specification	Mandatory
				2 × 2 MIMO	Yes
				WPA/WPA2/WPA3	Yes
				Bluetooth 5.3	Yes
			Ports	Thunderbolt™ 4 × 2	Yes
				USB-C × 1	Yes
				Support camera privacy switch × 1	Yes
			Power Button	Fingerprint Power Button	Yes
			Camera	1080P HD camera	Yes
			Audio	Speaker × 6	Yes
				Microphone × 4	Yes
Accra	General Purpose Laptop	15	Operating system	Windows 11 Pro	Yes
			Display	14.2 inches IPS	Yes
				90% Screen-to-body Ratio	Yes
				16:10 Aspect Ratio	Yes
				1920 × 1200, 161 ppi	Yes
				10-point multi-touch sensitive screen	Yes
			Processor	12th Gen Intel® Core™ i5-12450H	Yes
			Graphics	Intel® UHD Graphics	Yes
			Memory	8 GB LPDDR4X	Yes
			Storage	512 GB NVMe PCIe SSD	Yes
			Battery	Lithium polymer 56 Wh (rated capacity)	Yes
			Connectivity	802.11a/b/g/n/ac/ax,160MHz	Yes
				2.4 GHz/5 GHz	Yes
				2 × 2 MIMO	Yes
				WPA/WPA2/WPA3	Yes
				Bluetooth 5.1	Yes
			Ports	USB-C 3.2 Gen 1 × 1	Yes
				USB-A 3.2 Gen 1 × 1	Yes
				USB-A 2.0 × 1	Yes
				HDMI × 1	Yes
				3.5 mm headset and microphone 2-in-1 jack × 1	Yes
			Power Button	Fingerprint Power Button	Yes
			Camera	1M Front camera	Yes
			Audio	Speaker × 2	Yes
				Microphone × 2s	Yes

4.3 NITA AI CLOUD

4.3.1 TECHNICAL CAPABILITIES OF ON-PREMISES CLOUD SERVICE.

Indicator	Cloud Service	Specifications	Mandatory
Compute Service	ECS	1.Elastic Cloud Server, on-demand access to elastic and scalable computing servers. 2.Support specifying the power-on/off status and HA switching policy of the elastic cloud server after its creation, as well as creating non-administrator users during the creation process.	Yes
	IMS	1.Image Service, Provide simple and convenient self-service image management function. 2.Support the creation of complete machine images that include both system disks and data disks.	Yes
	AS	1.Auto Scale, dynamically increase or decrease instances to achieve optimal utilization of cloud resources. 2.Support the formulation of automatic scaling policy based on fixed time points, periodicity, and system monitoring indicators	Yes
Storage Service	EVS	1.Elastic Volume Service, virtually scalable block storage device based on a distributed architecture. 2.A single data disk can support up to 64TB, meeting the requirements of scenarios demanding large-capacity specifications.	Yes
Network Service	NAT	Network Address Translation, to connect your VMs to an external network	Yes
	SG	Security Group, implements access controls for ECSs, specifying the communication scope of ECSs	Yes
	VPC	1.Virtual Private Cloud, Provide secure, isolated, and logical network environment. 2.Supports layer 2 and layer 3 multicast capabilities, and supports IGMPv2 and IGMPv3 protocols	Yes
	EIP	Elastic IP Address, Provide independent public IP addresses and bandwidth to the Internet	Yes
	Direct Connect	1.A high-speed, stable, and secure dedicated network channel. 2. It supports both Layer 2 and Layer 3 network leased lines, allowing for the application of Layer 2 leased line instances for VPC subnets. This enables Layer 2 interconnection between off-cloud subnets within the same network segment and VPC subnets, ensuring that workload migration to the cloud does not require modifying IP addresses	Yes
	ELB	1.Elastic Load Balance, automatically distributes access traffic to multiple Elastic Cloud Services (ECSs) to balance the load. 2.Support the binding of multiple public IPs to a single load balancer instance, to meet business scenarios where the load balancer uses public IPs from different network segments to provide services externally	Yes

Indicator	Cloud Service	Specifications	Mandatory
Cloud Management	OC	1.Operation Center, provide localized and refined operation and maintenance capabilities, focusing on resource monitoring and fault handling. Operate full stack AI Cloud including computing, storage, network, network security, local backup and remote disaster recovery. 2. Support fault root cause isolation by analyzing relevant indicators (CPU usage, memory usage, disk IO, and network inbound and outbound rates) before and after the occurrence of a fault to automatically deduce which hosts the business fault occurred on, thereby assisting operation and maintenance personnel in avoiding faults and reducing MTTR.	Yes
	SC	1. Service Center, provide globalized and service-oriented resource supply capabilities, focusing on service catalogs and resource management. Provision full stack AI Cloud including computing, storage, network, network security, local backup and remote disaster recovery. 2. 5 Level VDC: Provide virtual data center (VDC) management capabilities, support Level 5 VDC management, and match users' organizational structures up to Level 5. Each VDC has independent resource access permissions, as well as independent cloud service quotas and management permissions. 3. Process Approval: Support process approval functionality to ensure that controlled business can only be utilized after approval, with up to 5 levels of approval configurable.	Yes

4.3.2 CLOUD MANAGEMENT SERVER

Data Center	Equipment Type	QTY	Indicator	Specifications	Mandatory
Accra	Network Server	3	Size	2U Rack server	-
			CPU	ARM CPU, Minimum 2*48 cores, 2.2GHz	Yes
			Memory	Minimum 8*32G DDR5	Yes
			Local Storage	Minimum 2*480G SSD	Yes
			RAID Support	RAID 0 / 1 / 10 / 5 / 50 / 6 / 60	Yes
			Network	8*10GE SFP+ interfaces	Yes
	Management Server	3	Size	2U Rack server	-
			CPU	ARM CPU, Minimum 2*64 cores, 2.2GHz	Yes
			Memory	Minimum 32*64G DDR5	Yes
			Local Storage	Minimum 2*960G SSD + 8*7.68T NVMe	Yes
			RAID Support	RAID 0 / 1 / 10 / 5 / 50 / 6 / 60	Yes
			Network	8*10GE SFP+ interfaces	Yes

4.3.3 CLOUD BORDER LEAF SWITCH

Data Center	Equipment Type	QTY	Indicator	Specification	Mandatory
Accra	Border Leaf for Cloud infrastructure	2	Size	1U	-
			Switching capacity	The switching capacity is no less than 2.56Tbit/s.	Yes
			Packet forwarding rate	packet forwarding rate is no less than 1200Mpps.	Yes
			Port specification	The switch provides a minimum of 8*100G interfaces and 48*10GE interfaces.	Yes
				Shall be equipped with at least 4 pcs 100G-QSFP28 optical transceivers and 20 pcs 10G-SFP+ optical transceivers.	Yes
			Hardware reliability	The switch supports redundant power modules in 1+1 backup mode.	-
			System reliability	The switch supports inter-chassis link aggregation M-LAG technology which has the independent control planes.	Yes
				Switches support hardware-based BFD at the interval of 3.3 ms.	Yes
			Forwarding Table Capacity	Support FIB of larger than 1.5M	Yes
				Support MAC of larger than 640K MAC address	Yes
				Support ACL of larger than 30K	-
			MACsec feature	MACsec is supported.	Yes
			Monitoring and visualization	Support telemetry, which supports sampling of device status data (such as interface traffic statistics, CPU data, memory data, etc.) and report to analyze platform for analysis and visibility.	Yes
				The sampling interval can be configured to less than 100ms or even real-time.	-
				Supports logging of device packet loss events (such as abnormal forwarding, full buffer, ACL deny, etc.), and reports to analyze platform for visibility of the events.	-

4.3.4 MANAGEMENT FIREWALL

Data Center	Equipment Type	QTY	Indicator	Specification	Mandatory
Accra	Firewall for Cloud Infrastructure	2	Size	1 RU	Yes
			NGFW throughput	Not less than 25 Gbps	Yes
			Threat protection throughput	Not less than 20 Gbps	Yes
			Firewall policies	Not less than 150,000	Yes
			IPSec VPN throughput	Not less than 30 Gbps	Yes
			Concurrent Connections	Not less than 20 million	Yes
			New Connections per Second	Not less than 500k	Yes
			Virtual domain (default/maximum)	Not less than 10/2000	Yes
			Application control throughput	Not less than 25 Gbps	Yes
			SSL VPN Throughput	Not less than 3 Gbps	Yes
			SSL VPN Concurrent Users	Not less than 10,000	Yes
			Application Awareness	Support at least 6000+ applications to ensure refined application recognition.	-
			Management	Firewall must be embedded with centralized management software provided by the same vendor as proposed firewall	-
			Security fabric analytics	Firewall must be embedded with the security fabric analytic tool provided by the same vendor as proposed firewall for device logs with event correlation.	-
			Interfaces	Not less than 10*10GE SFP+, 4*GE RJ45, 6*GE COMBO	Yes

4.3.5 CLOUD SPINE SWITCH

Data Center	Equipment Type	QTY	Indicator	Specification	Mandatory
Accra	Spine for Cloud Infrastructure	2	Size	2U	-
			Switching capacity	The switching capacity is no less than 16Tbit/s.	Yes
			Packet forwarding rate	packet forwarding rate is no less than 2400 Mpps.	Yes
			Port specification	The switch should support 4 service slot, each slot should support the following line cards: 1.16-port 100GE line card 2.24-port 25GE and 2-port 100GE line	Yes

Data Center	Equipment Type	QTY	Indicator	Specification	Mandatory
				card. The 25GE Port supports backward compatibility with 10GE.	Yes
				Shall be equipped with at least 4 pcs 16-port 100GE line card. Shall be equipped with at least 16 pcs 100G-QSFP28 optical transceivers.	
			Hardware reliability	The switch supports redundant power modules in 1+1 backup mode.	-
			System reliability	The switch supports inter-chassis link aggregation M-LAG technology which has the independent control planes.	Yes
				Switches support hardware-based BFD at the interval of 3.3 ms.	Yes
			Forwarding Table Capacity	Support FIB of larger than 1.5M.	Yes
				Support MAC of larger than 640K MAC address	Yes
				Support ACL of larger than 30K	-
			MACsec feature	MACsec is supported	Yes
			Monitoring and visualization	Support telemetry, which supports sampling of device status data (such as interface traffic statistics, CPU data, memory data, etc.) and report to analyze platform for analysis and visibility.	Yes
				The sampling interval can be configured to less than 100ms or even real-time.	-
				Supports logging of device packet loss events (such as abnormal forwarding, full buffer, ACL deny, etc.), and reports to analyze platform for visibility of the events.	-

4.3.6 MANAGEMENT LEAF SWITCH

Data Center	Equipment Type	QTY	Indicator	Specification	Mandatory
Accra	Management Leaf for Cloud Infrastructure	2	Size	1U	-
			Switching capacity	The switching capacity is no less than 8Tbit/s.	Yes
			Packet forwarding rate	packet forwarding rate is no less than 1200 Mpps.	Yes
			Port specification	The switch provides a minimum of 8*100G interfaces and 48*25GE interfaces.	Yes
				Shall be equipped with at least 4 pcs 100G-QSFP28 optical transceivers and 20 pcs 10G-SFP+ optical transceivers.	Yes
			Hardware reliability	The switch supports redundant power modules in 1+1 backup mode.	-

Data Center	Equipment Type	QTY	Indicator	Specification	Mandatory
			System reliability	The switch supports inter-chassis link aggregation M-LAG technology which has the independent control planes.	Yes
				Switches support hardware-based BFD at the interval of 3.3 ms.	Yes
			Forwarding Table Capacity	Support FIB of larger than 1.5M.	Yes
				Support MAC of larger than 640K MAC address	Yes
				Support ACL of larger than 30K	-
			MACsec feature	MACsec is supported	Yes
			Monitoring and visualization	Support telemetry, which supports sampling of device status data (such as interface traffic statistics, CPU data, memory data, etc.) and report to analyze platform for analysis and visibility.	Yes
				The sampling interval can be configured to less than 100ms or even real-time.	-
				Supports logging of device packet loss events (such as abnormal forwarding, full buffer, ACL deny, etc.), and reports to analyze platform for visibility of the events.	-

4.3.7 NETWORK LEAF SWITCH

Data Center	Equipment Type	QTY	Indicator	Specification	Mandatory
Accra	Network Leaf for Cloud Infrastructure	2	Size	1U	-
			Switching capacity	The switching capacity is no less than 2.56Tbit/s.	Yes
			Packet forwarding rate	packet forwarding rate is no less than 1200Mpps.	Yes
			Port specification	The switch provides a minimum of 8*100G interfaces and 48*10GE interfaces.	Yes
				Shall be equipped with at least 4 pcs 100G-QSFP28 optical transceivers and 10 pcs 10G-SFP+ optical transceivers.	Yes
			Hardware reliability	The switch supports redundant power modules in 1+1 backup mode.	-

Data Center	Equipment Type	QTY	Indicator	Specification	Mandatory
			System reliability	The switch supports inter-chassis link aggregation M-LAG technology which has the independent control planes.	Yes
				Switches support hardware-based BFD at the interval of 3.3 ms.	Yes
			Forwarding Table Capacity	Support FIB of larger than 1.5M	Yes
				Support MAC of larger than 640K MAC address	Yes
				Support ACL of larger than 30K	-
			MACsec feature	MACsec is supported.	Yes
			Monitoring and visualization	Support telemetry, which supports sampling of device status data (such as interface traffic statistics, CPU data, memory data, etc.) and report to analyze platform for analysis and visibility.	Yes
				The sampling interval can be configured to less than 100ms or even real-time.	-
				Supports logging of device packet loss events (such as abnormal forwarding, full buffer, ACL deny, etc.), and reports to analyze platform for visibility of the events.	-

4.3.8 GENERAL LEAF SWITCH

Data Center	Equipment Type	QTY	Indicator	Specification	Mandatory
Accra	General Leaf for Cloud Infrastructure	2	Size	1U	-
			Switching capacity	The switching capacity is no less than 2.56Tbit/s.	Yes
			Packet forwarding rate	packet forwarding rate is no less than 1200Mpps.	Yes
			Port specification	The switch provides a minimum of 8*100G interfaces and 48*10GE interfaces.	Yes
				Shall be equipped with at least 4 pcs 100G-QSFP28 optical transceivers and 20 pcs 10G-SFP+ optical transceivers.	Yes
			Hardware reliability	The switch supports redundant power modules in 1+1 backup mode.	-
			System reliability	The switch supports inter-chassis link aggregation M-LAG technology which has the independent control planes.	Yes

Data Center	Equipment Type	QTY	Indicator	Specification	Mandatory
				Switches support hardware-based BFD at the interval of 3.3 ms.	Yes
			Forwarding Table Capacity	Support FIB of larger than 1.5M	Yes
				Support MAC of larger than 640K MAC address	Yes
				Support ACL of larger than 30K	-
			MACsec feature	MACsec is supported.	Yes
			Monitoring and visualization	Support telemetry, which supports sampling of device status data (such as interface traffic statistics, CPU data, memory data, etc.) and report to analyze platform for analysis and visibility.	Yes
				The sampling interval can be configured to less than 100ms or even real-time.	-
				Supports logging of device packet loss events (such as abnormal forwarding, full buffer, ACL deny, etc.), and reports to analyze platform for visibility of the events.	-

4.3.9 BMC SWITCH

Data Center	Equipment Type	QTY	Indicator	Specification	Mandatory
Accra	BMC Switch for Cloud Infrastructure	2	Size	1U	-
			Switching capacity	The switching capacity is no less than 176Gbit/s.	Yes
			Packet forwarding rate	The packet forwarding rate is no less than 132Mpps.	Yes
			Port specification	The switch supports a minimum of 4*10GE optical interfaces and 48*GE RJ45 interfaces.	Yes
				Shall be equipped with at least 4 pcs 10G-SFP+ optical transceivers.	Yes
			Power supply reliability	The switch supports AC Power supplies and fan modules work in 1+1 mode.	Yes
			Protocol Support	The switch supports RIP, OSPF, IS-IS, and BGP.	Yes
			Forwarding Table Capacity	Support FIB of larger than 8K/3K IPv4/IPv6 table	Yes
				Support MAC of larger than 32K MAC address	Yes

4.3.10 COMPUTING LEAF SWITCH

Data Center	Equipment Type	QTY	Indicator	Specification	Mandatory
Accra	Computing Leaf for AI Infrastructure	2	Size	1U	-
			Switching capacity	The switching capacity is no less than 8Tbit/s.	Yes
			Packet forwarding rate	packet forwarding rate is no less than 1200 Mpps.	Yes
			Port specification	The switch provides a minimum of 8*100G interfaces and 48*25GE interfaces.	Yes
				Shall be equipped with at least 4 pcs 100G-QSFP28 optical transceivers and 4 pcs 25G-SFP28 optical transceivers and 4 pcs 10G-SFP+ optical transceivers.	Yes
			Hardware reliability	The switch supports redundant power modules in 1+1 backup mode.	-
			System reliability	The switch supports inter-chassis link aggregation M-LAG technology which has the independent control planes.	Yes
				Switches support hardware-based BFD at the interval of 3.3 ms.	Yes
			Forwarding Table Capacity	Support FIB of larger than 1.5M.	Yes
				Support MAC of larger than 640K MAC address	Yes
				Support ACL of larger than 30K	-
			MACsec feature	MACsec is supported	Yes
			Monitoring and visualization	Support telemetry, which supports sampling of device status data (such as interface traffic statistics, CPU data, memory data, etc.) and report to analyze platform for analysis and visibility.	Yes
				The sampling interval can be configured to less than 100ms or even real-time.	-
				Supports logging of device packet loss events (such as abnormal forwarding, full buffer, ACL deny, etc.), and reports to analyze platform for visibility of the events.	-

4.3.11 AI ROCE LEAF SWITCH

Data Center	Equipment Type	QTY	Indicator	Specification	Mandatory
Accra	RoCE Leaf for AI Environment	1	Size	1U	-
			switching capacity	The switching capacity is no less than 25Tbit/s to support future evolution to higher capacity line cards.	Yes
			Packet forwarding rate	packet forwarding rate is no less than 4800Mpps.	Yes
			Port specification	The switch should support up to 32*400GE +2*10GE interface	Yes

Data Center	Equipment Type	QTY	Indicator	Specification	Mandatory
				The 400GE Port supports backward compatibility with 200GE.	Yes
				Shall be equipped with at least 18 pcs 200GE-QSFP56 optical transceivers.	Yes
			Hardware reliability	The switch supports redundant power modules in 1+1 backup mode.	-
			System reliability	The switch supports inter-chassis link aggregation M-LAG technology which has the independent control planes.	Yes
				Switches support hardware-based BFD at the interval of 3.3 ms.	Yes
			Forwarding Table Capacity	Support FIB of larger than 1.5M.	Yes
				Support MAC of larger than 640K MAC address	Yes
				Support ACL of larger than 30K	-
			MACsec feature	MACsec is supported.	Yes
			Monitoring and visualization	Support telemetry, which supports sampling of device status data (such as interface traffic statistics, CPU data, memory data, etc.) and report to analyze platform for analysis and visibility.	Yes
				The sampling interval can be configured to less than 100ms or even real-time.	-
				Supports logging of device packet loss events (such as abnormal forwarding, full buffer, ACL deny, etc.), and reports to analyze platform for visibility of the events.	-

4.3.12 ECS SERVER FOR CLOUD INFRASTRUCTURE

Data Center	Equipment Type	QTY	Indicator	Specifications	Mandatory
Accra	ECS Server for Cloud Infrastructure	2	Size	2U x86 server	-
			CPU	Minimum 2*32 cores, 2.8GHz	Yes
			Memory	Minimum 8 * 64GB DDR5	Yes
			Local Storage	2*960GB SSD-SAS	Yes
			RAID Support	RAID 0 / 1 / 10 / 5 / 50 / 6 / 60	-
			Network	4*10GE SFP+ interfaces	Yes

4.3.13 AI INFERENCE SERVER

Data Center	Equipment Type	QTY	Indicator	Specification	Mandatory
Accra	AI Inference Server	2	Size	14U AI server	-
			AI Cards	8 x AI card, Every card support 480TFLOPS@FP16 ; Every card support 750TFLOPS@FP8 ; Every card support 1500TFLOPS@FP4 ; Support MXFP4, MXFP8	Yes
			CPU	Minimum 2*80 cores, 2.3GHz	Yes
			AI Capability	3.8P FLOPS@FP16, 7.3P FLOPS@FP8	Yes
			HBM	Every AI Card minimum 80GB HBM, minimum HBM bandwidth of 2.7TB/s	Yes
			AI Card Network	Each AI card provides at least 400 Gbit/s Ethernet ports	Yes
			Memory	Minimum 1TB DDR5, up to 4800 MT/s	-
			Local Storage	2*480GB SSD + 4*3.84TB NVMe	-
			Power Consumption	Maximum power consumption less than 16.5 KW	Yes
			Computing density	Computing power more than 0.5 P FLOPS FP16/Unit	Yes
			RAID Support	RAID 0 / 1 / 10 / 5 / 50 / 6 / 60	-
			Architecture	2 AI servers can be deployed to form a Super node architecture. Any two AI processors among the super node servers support high-speed bus interconnection, and the interconnection bandwidth must be greater than or equal to 500 GB/s	Yes
			Architecture	CPUs and AI processors in the super node support unified bus-based memory addressing. AI processors can directly access other AI processors through memory semantics.	Yes
			Network	At least 2*25GE interfaces, At least 30*400GE interfaces, At least 2*100GE Interfaces	Yes

4.3.14 ALL-FLASH STORAGE FOR CLOUD INFRASTRUCTURE

Data Center	Equipment Type	Set	Indicator	Specification	Mandatory
Accra	Storage	2	CPU configuration	The number of CPUs on a single node is ≥ 2 , the number of physical cores on a single CPU is ≥ 32 , and the CPU frequency is 2.6 GHz.	Yes
			System architecture	Controllers work in active-active mode. LUNs do not belong to any	Yes

Data Center	Equipment Type	Set	Indicator	Specification	Mandatory
				controller. Service loads are balanced among four (or two) or more controllers. During service running, the IOPS and CPU usage difference between controllers does not exceed 10%. SAN and NAS are integrated. The NAS protocol (including NFS, CIFS, and NDMP), IP SAN protocol, and FC SAN protocol are configured. No additional NAS gateway is required. SAN and NAS services share resource pools.	
			Disk configuration	Minimum 28*7.68TB SSD NVMe Palm Disk	Yes
			Operation and maintenance	Non-disruptive upgrade is supported. Modular software design is used, and more than 90% components are in user mode. Controllers do not need to be restarted during the upgrade.	Yes
			Cache capacity	The total cache capacity of the system is greater than or equal to 512 GB	
			RAID	1. Supports RAID 5, RAID 6, and RAID-TP. RAID-TP is able to tolerate simultaneous failure of three disks. Product brochures or screenshots of the official website are required. 2. Three disks (excluding hot spare disks) in a RAID group (excluding RAID 1 and RAID 10) are allowed to fail simultaneously without data loss or service interruption. 3. In a RAID 5 group, the reconstruction time in the event of intermittent disconnection of a single disk is within 10 minutes. 4. In a RAID 5 group, if a single disk (greater than 3.84 TB) has a large-scale media fault, the hot spare disk reconstruction time does not exceed 20 minutes. The system can tolerate successive failure of five or more disks without data loss or service interruption.	Yes
			Dynamic RAID reconstruction	Supports dynamic RAID reconstruction. If a disk is faulty, the number of member disks in the RAID group can be reduced to ensure that the data redundancy level does not decrease.	Yes

Data Center	Equipment Type	Set	Indicator	Specification	Mandatory
			QoS	Configure QoS to control traffic by LUN, LUN group, or host. QoS policies include upper limit control and minimum performance assurance, which can be configured by IOPS or bandwidth. In addition, the upper limit control policy includes the burst configuration, and the minimum performance assurance policy includes the latency configuration.	
			Snapshot	The snapshot function meets the following requirements: 1. ROW lossless snapshot mode is used. 2. Supports at least 60,000 snapshots for a single LUN and at least 1 million snapshots for a system. 3. The system creates a snapshot every 3 seconds. Visualized management interfaces are provided. Data can be restored using a snapshot at any point in time, without losing the snapshot data at other points in time. 4. Snapshots do not compromise performance. System performance will not decrease as the number of snapshots increases. System latency stays shorter than 1 ms with snapshot enabled. 5. Cascading snapshots are supported. Snapshots can be created for snapshots. 6. Secure snapshots are supported, that is, snapshots cannot be deleted.	
			Replication between different models	The system supports data replication with all enterprise-level hybrid-flash storage and all-flash models on sale, as well as data replication among all models of the same series.	Yes
			Ransomware detection	The ransomware detection function is supported. 1. Provides real-time ransomware detection, fast screening of abnormal I/O behavior and in-depth detection of file damage, and timely detection of ransomware and alarms. 2) Provides intelligent ransomware detection to sample and analyze the differential data characteristics of	

Data Center	Equipment Type	Set	Indicator	Specification	Mandatory
				LUN snapshots, detecting ransomware attacks in a timely manner and generating alarms.	
			Log audit	The log audit function is provided to record user operations from protocols, including user login information and operations such as user creation, deletion, and modification. Log audit can be performed for files or directories. NFS and CIFS log audit is supported. Logs can be output in XML and evtX formats. Guaranteed and non-guaranteed modes are supported.	-

4.4 SERVICE SPECIFICATIONS

The services to be provided under this contract must comply with the following technical and functional specifications, with a view to modernizing and expanding the data center infrastructure to support client operations.

4.4.1 NETWORK PLANNING AND DESIGN

A detailed survey of the existing infrastructure, including servers and networks; provide design network topology diagrams, IT structure diagrams etc. The proposer must possess relevant certifications (e.g., CCIE, CCIP, HCIE, HCIP, etc.) to guarantee the service quality.

4.4.2 SUPPLY, INSTALLATION, AND COMMISSIONING

The proposer must complete equipment production and transportation to Ghana within 28 WEEKs. Install equipment according to the design plan, including cabinet layout, cable installation, and labeling. After network integration, verify connectivity, server startup, storage mounting, etc. Conduct continuous operation tests to ensure fault-free system operation.

4.4.3 TECHNICAL SUPPORT SERVICE

The ICT active equipment vendor must be a company registered in Ghana or have a fully registered branch within the country.

The manufacture must maintain a stable technical support team with over 15 years of local operation and more than 30 personnel. Preference is given to original equipment manufacturers (OEMs), who must provide CVs of at least 15 OEM resident staff in Ghana (for non-Ghana nationals must with Ghana work permit) to ensure local support capability.

The proposer must confirm that can provide support from the OEM, at least with below service standard:

- **24x7 Technical Assistance Center (TAC) Support:** must provide 24 hours a day, 7 days a WEEK through TAC hotlines, emails, websites, and mobile APP for product technical consultation, troubleshooting issues, and other service requests. For issues which critically impact on customer's business operations, the vendor's support team must response within 30 minutes, and help customer to recover service on time.
- **Online Self-help Support:** must provide a one-stop online self-service platform to help customers solve problems, such as the technical support website, technical support community, and intelligent Q&A chatbot. the website must include the updated technical and general information on products with product manuals, configuration guides, and network maintenance cases. Customers can view or download software, helpful documents and get latest product information
- **Advance Hardware Replacement:** 9 x 5 x NBD (Next Business Day), 9x5 coverage window, service is available 9 hours a day (09:00 to 18:00), 5 days a WEEK (Monday to Friday), excluding local official holidays. Replacement parts will arrive the Next Business Day (NBD), provided that an RMA number has been generated before 15:00 (local time). If generated after 15:00 (local time), then Vender will log RMA application on the next business day and replacement parts will arrive on the Next Business Day (NBD) of the RMA application logged date.
- **Rights to Software Updates:** Within the validity period of the service, the vendor must provide embedded system software updates that include bug fixes and maintenance releases. Customers can obtain the software updates from the vendor's technical support website, and perform the installation of software updates.

4.4.4 RESIDENT ENGINEER SUPPORT SERVICE

The proposer should provide 2 engineers for resident services for the positive ICT products, such as network, data storage equipment etc. service period is 12 months, and the service standard requirement is as follows:

No.	Service Item	Service Description	Frequency
1	Monitoring and Analysis	Resident engineers monitor alarms and analyze and handle abnormal alarms based on the running status, capacity, performance, and logs of the product.	Daily
2	Fault Recovery	Resident engineers locate and rectify faults on site, and quickly recover services to minimize the impact of faults on services.	On Demand
3	Routine Inspection	The resident engineer checks the running indicators, logs, performance, and basic configuration information of the product based on the inspection list and clears the alarms in a timely manner to ensure that the product runs properly.	Weekly/On Demand
4	Change Assistance	Based on the customer's request, O&M event, or fault, the resident engineer assists in expanding, replacing, and repairing the software and hardware of the product based on the resident O&M requirements and the customer's process.	On Demand
5	Service Response	Triggered by customer requests, responded to customer requirements, and provided support services for customers. For example, product use consultation, technical assistance, service request, service provisioning, data query, and third-party commissioning assistance.	On Demand
6	System Backup	Resident O&M engineers formulate system backup policies based on customer requirements or product maintenance requirements, periodically back up and check configuration parameters or key data storage, and quickly restore the system to the state before the fault occurs.	Weekly/Monthly
7	Configuration Information Maintenance	If the configuration information changes during the event handling, troubleshooting, and change operations of products, the resident engineers update and maintain the configuration information, such as the product configuration, network topology, infrastructure information and so on based on the customer's requirements.	On Demand
8	Asset Information Maintenance	If asset information changes due to incident handling, troubleshooting, change operations of products, the resident engineer updates and maintains the asset information of the responsible products as required by the	On Demand

No.	Service Item	Service Description	Frequency
		customer, and regularly maintains the asset ledger or stocktaking, such as shelving, delisting, on-line, offline of assets. Add, delete, and modify information.	
9	Emergency Plan	Based on the customer's requirements, resident engineers prepare emergency plans and drills for the products in charge to ensure that effective actions and solutions can be taken to quickly restore stable service running when critical faults occur.	On Demand
10	Service Report	Based on the resident work execution, regularly provide service reports based on the requirements of customers or projects. The service reports can be provided for a single product or module. (Fault analysis, routine inspection, change assistance.) Or multi-dimensional reports such as the overall project.	Daily/Weekly/Monthly (Project agreement)

CVs of resident engineer and relevant certificate (CCIE, CCIP, HCIE, HCIP etc.) should be provided together in the bidding stage.

4.4.5 TRAINING TO BE PROVIDED

In order to have better understanding and utilization of equipment, and know how to maintain and optimize, proposer should provide training courses for relevant personnel. The proposer must have the ability to provide Original Equipment Manufacturer (OEM) training on the equipment and possess the following capabilities including but not limited to:

f) Training Requirements

- The Original Equipment Manufacturer (OEM) should provide both global training services (offshore training) and Ghana local training services (onshore training).
- The Original Equipment Manufacturer (OEM) should provide good learning environment for trainees, including computers, multimedia teaching, and on-site practice, etc. To meet the requirements of courses that combine theory and practice.

g) Curriculum Structure

- For curriculum, it covers two topics including AI and Cloud.
- The offshore training program is structured in two batches, with each batch limited to 8 participants and the course delivered for a 5-day basic AI&Cloud training.

Type	Curriculum Topic	Person	Training Days	Batch
Offshore	AI, Cloud	8	5	2

- The onshore training is designed for 10 days, including advanced AI & Cloud training.

Type	Curriculum Topic	Class	Training Days	Batch
Onshore	AI, Cloud	1	10	1

- During class, training must at minimum cover: installation, commissioning, testing, maintenance and fault rectification down to components or modules.

h) Trainer Qualifications

- Certified instructors with ≥ 5 years field experience with excellent bilingual capability (English & other language);
- The proposer shall submit resumes of full-time instructors for evaluation, the quantity of instructors who specializing in the same technical field should exceed at least five.

i) Talent Assessment Service

- The OEM should provide course attendance certificate if pass class examination. And for further learning and certification requirements, the OEM should have Internationally recognized certificate examination for trainees. Trainees have the option to independently purchase exam vouchers to register for and take the corresponding exams.

- To meet the different needs of AI & Cloud practitioners, the OEM shall have at least 3 levels certification system, for example associate, professional and expert.

j) Reception Services

In order that trainee can enjoy a comfortable learning time, following services for trainee who participating in offshore training:

- Flight: Round-way economy class flight for trainees
- Accommodation: The specified accommodation standard is no lower than a four-star hotel.
- Transportation: Provide transportation between hotel and airport, hotel and training center, and transportation in spare time activity.
- Insurance: Purchase the accidental injury insurance.
- SIM card: A SIM card of local place should be provided for each customer.
- Allowance: Meal allowance will be provided from 1st day to the last day of training. (Except welcome dinner, class end dinner as well as tour day's lunch).
- Stationery: Notebook, water glass & ball pen will be given as a training kit.

4. Drawings

This bidding document includes *[insert “the following” or “no”]* drawings.

[If documents shall be included, insert the following List of Drawings]

List of Drawings		
Drawing Nr.	Drawing Name	Purpose

5. Inspections and Tests

The following inspections and tests shall be performed: *[insert list of inspections and tests]*

PART 3 – Contract

Section VIII - General Conditions of Contract

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Section VIII. General Conditions of Contract

1. Definitions

1.1 The following words and expressions shall have the meanings hereby assigned to them:

- (a) “Bank” means the World Bank and refers to the International Bank for Reconstruction and Development (IBRD) or the International Development Association (IDA).
- (b) “Contract” means the Contract Agreement entered into between the Purchaser and the Supplier, together with the Contract Documents referred to therein, including all attachments, appendices, and all documents incorporated by reference therein.
- (c) “Contract Documents” means the documents listed in the Contract Agreement, including any amendments thereto.
- (d) “Contract Price” means the price payable to the Supplier as specified in the Contract Agreement, subject to such additions and adjustments thereto or deductions therefrom, as may be made pursuant to the Contract.
- (e) “Day” means calendar day.
- (f) “Completion” means the fulfillment of the Related Services by the Supplier in accordance with the terms and conditions set forth in the Contract.
- (g) “GCC” means the General Conditions of Contract.
- (h) “Goods” means all of the commodities, raw material, machinery and equipment, and/or other materials that the Supplier is required to supply to the Purchaser under the Contract.
- (i) “Purchaser’s Country” is the country specified **in the Special Conditions of Contract (SCC)**.
- (j) “Purchaser” means the entity purchasing the Goods and Related Services, as **specified in the SCC**.
- (k) “Related Services” means the services incidental to the supply of the goods, such as insurance, installation, training and initial maintenance and other such obligations of the Supplier under the Contract.
- (l) “SCC” means the Special Conditions of Contract.
- (m) “Subcontractor” means any person, private or government entity, or a combination of the above, to whom any part of

the Goods to be supplied or execution of any part of the Related Services is subcontracted by the Supplier.

- (n) “Supplier” means the person, private or government entity, or a combination of the above, whose Bid to perform the Contract has been accepted by the Purchaser and is named as such in the Contract Agreement.
- (o) “The Project Site,” where applicable, means the place **named in the SCC.**

2. Contract Documents

- 2.1 Subject to the order of precedence set forth in the Contract Agreement, all documents forming the Contract (and all parts thereof) are intended to be correlative, complementary, and mutually explanatory. The Contract Agreement shall be read as a whole.

3. Fraud and Corruption

- 3.1 The Bank requires compliance with the Bank’s Anti-Corruption Guidelines and its prevailing sanctions policies and procedures as set forth in the WBG’s Sanctions Framework, as set forth in Appendix 1 to the GCC.
- 3.2 The Purchaser requires the Supplier to disclose any commissions or fees that may have been paid or are to be paid to agents or any other party with respect to the Bidding process or execution of the Contract. The information disclosed must include at least the name and address of the agent or other party, the amount and currency, and the purpose of the commission, gratuity or fee.

4. Interpretation

- 4.1 If the context so requires it, singular means plural and vice versa.
- 4.2 Incoterms
 - (a) Unless inconsistent with any provision of the Contract, the meaning of any trade term and the rights and obligations of parties thereunder shall be as prescribed by Incoterms **specified in the SCC.**
 - (b) The terms EXW, CIP, FCA, CFR and other similar terms, when used, shall be governed by the rules prescribed in the current edition of Incoterms **specified in the SCC** and published by the International Chamber of Commerce in Paris, France.
- 4.3 Entire Agreement

The Contract constitutes the entire agreement between the Purchaser and the Supplier and supersedes all communications, negotiations and agreements (whether written or oral) of the parties with respect thereto made prior to the date of Contract.
- 4.4 Amendment

No amendment or other variation of the Contract shall be valid unless it is in writing, is dated, expressly refers to the Contract, and is signed by a duly authorized representative of each party thereto.

4.5 Nonwaiver

- (a) Subject to GCC Sub-Clause 4.5(b) below, no relaxation, forbearance, delay, or indulgence by either party in enforcing any of the terms and conditions of the Contract or the granting of time by either party to the other shall prejudice, affect, or restrict the rights of that party under the Contract, neither shall any waiver by either party of any breach of Contract operate as waiver of any subsequent or continuing breach of Contract.
- (b) Any waiver of a party's rights, powers, or remedies under the Contract must be in writing, dated, and signed by an authorized representative of the party granting such waiver, and must specify the right and the extent to which it is being waived.

4.6 Severability

If any provision or condition of the Contract is prohibited or rendered invalid or unenforceable, such prohibition, invalidity or unenforceability shall not affect the validity or enforceability of any other provisions and conditions of the Contract.

5. Language

- 5.1 The Contract as well as all correspondence and documents relating to the Contract exchanged by the Supplier and the Purchaser, shall be written in the language specified in the **SCC**. Supporting documents and printed literature that are part of the Contract may be in another language provided they are accompanied by an accurate translation of the relevant passages in the language specified, in which case, for purposes of interpretation of the Contract, this translation shall govern.
- 5.2 The Supplier shall bear all costs of translation to the governing language and all risks of the accuracy of such translation, for documents provided by the Supplier.

6. Joint Venture, Consortium or Association

- 6.1 If the Supplier is a joint venture, consortium, or association, all of the parties shall be jointly and severally liable to the Purchaser for the fulfillment of the provisions of the Contract and shall designate one party to act as a leader with authority to bind the joint venture, consortium, or association. The composition or the constitution of the joint venture, consortium, or association shall not be altered without the prior consent of the Purchaser.

- 7. Eligibility**
- 7.1 The Supplier and its Subcontractors shall have the nationality of an eligible country. A Supplier or Subcontractor shall be deemed to have the nationality of a country if it is a citizen or constituted, incorporated, or registered, and operates in conformity with the provisions of the laws of that country.
- 7.2 All Goods and Related Services to be supplied under the Contract and financed by the Bank shall have their origin in Eligible Countries. For the purpose of this Clause, origin means the country where the goods have been grown, mined, cultivated, produced, manufactured, or processed; or through manufacture, processing, or assembly, another commercially recognized article results that differs substantially in its basic characteristics from its components.
- 8. Notices**
- 8.1 Any notice given by one party to the other pursuant to the Contract shall be in writing to the address **specified in the SCC**. The term “in writing” means communicated in written form with proof of receipt.
- 8.2 A notice shall be effective when delivered or on the notice’s effective date, whichever is later.
- 9. Governing Law**
- 9.1 The Contract shall be governed by and interpreted in accordance with the laws of the Purchaser’s Country, unless otherwise **specified in the SCC**.
- 9.2 Throughout the execution of the Contract, the Supplier shall comply with the import of goods and services prohibitions in the Purchaser’s Country when:
- (a) as a matter of law or official regulations, the Borrower’s country prohibits commercial relations with that country; or
 - (b) by an act of compliance with a decision of the United Nations Security Council taken under Chapter VII of the Charter of the United Nations, the Borrower’s Country prohibits any import of goods from that country or any payments to any country, person, or entity in that country.
- 10. Settlement of Disputes**
- 10.1 The Purchaser and the Supplier shall make every effort to resolve amicably by direct informal negotiation any disagreement or dispute arising between them under or in connection with the Contract.
- 10.2 If, after twenty-eight (28) days, the parties have failed to resolve their dispute or difference by such mutual consultation, then either the Purchaser or the Supplier may give notice to the other party of its intention to commence arbitration, as hereinafter

provided, as to the matter in dispute, and no arbitration in respect of this matter may be commenced unless such notice is given. Any dispute or difference in respect of which a notice of intention to commence arbitration has been given in accordance with this Clause shall be finally settled by arbitration. Arbitration may be commenced prior to or after delivery of the Goods under the Contract. Arbitration proceedings shall be conducted in accordance with the rules of procedure **specified in the SCC.**

10.3 Notwithstanding any reference to arbitration herein,

- (a) the parties shall continue to perform their respective obligations under the Contract unless they otherwise agree; and
- (b) the Purchaser shall pay the Supplier any monies due the Supplier.

11. Inspections and Audit by the Bank

11.1 The Supplier shall keep, and shall make all reasonable efforts to cause its Subcontractors and subconsultants to keep, accurate and systematic accounts and records in respect of the Goods in such form and details as will clearly identify relevant time changes and costs.

11.2 Pursuant to paragraph 2.2 e. of Appendix 1 to the General Conditions the Supplier shall permit and shall cause its agents (where declared or not), subcontractors, subconsultants, service providers, suppliers, and personnel, to permit, the Bank and/or persons appointed by the Bank to inspect the site and/or the accounts, records and other documents relating to the procurement process, selection and/or contract execution, and to have such accounts, records and other documents audited by auditors appointed by the Bank. The Supplier's and its Subcontractors' and subconsultants' attention is drawn to Sub-Clause 3.1 (Fraud and Corruption) which provides, inter alia, that acts intended to materially impede the exercise of the Bank's inspection and audit rights constitute a prohibited practice subject to contract termination (as well as to a determination of ineligibility pursuant to the Bank's prevailing sanctions procedures).

12. Scope of Supply

12.1 The Goods and Related Services to be supplied shall be as specified in the Schedule of Requirements.

13. Delivery and Documents

13.1 Subject to GCC Sub-Clause 33.1, the Delivery of the Goods and Completion of the Related Services shall be in accordance with the Delivery and Completion Schedule specified in the Schedule of

Requirements. The details of shipping and other documents to be furnished by the Supplier are **specified in the SCC**.

**14. Supplier's
Responsibilities**

- 14.1 The Supplier shall supply all the Goods and Related Services included in the Scope of Supply in accordance with GCC Clause 12, and the Delivery and Completion Schedule, as per GCC Clause 13.
- 14.2 The Supplier, including its Subcontractors, shall not employ or engage forced labor or persons subject to trafficking, as described in GCC Sub-Clauses 14.3 and 14.4.
- 14.3 Forced labor consists of any work or service, not voluntarily performed, that is exacted from an individual under threat of force or penalty, and includes any kind of involuntary or compulsory labor, such as indentured labor, bonded labor or similar labor-contracting arrangements.
- 14.4 Trafficking in persons is defined as the recruitment, transportation, transfer, harbouring or receipt of persons by means of the threat or use of force or other forms of coercion, abduction, fraud, deception, abuse of power, or of a position of vulnerability, or of the giving or receiving of payments or benefits to achieve the consent of a person having control over another person, for the purposes of exploitation.
- 14.5 The Supplier, including its Subcontractors, shall not employ or engage a child under the age of 14 unless the national law specifies a higher age (the minimum age).
- 14.6 The Supplier, including its Subcontractors, shall not employ or engage a child between the minimum age and the age of 18 in a manner that is likely to be hazardous, or to interfere with, the child's education, or to be harmful to the child's health or physical, mental, spiritual, moral, or social development.
- 14.7 Work considered hazardous for children is work that, by its nature or the circumstances in which it is carried out, is likely to jeopardize the health, safety, or morals of children. Such work activities prohibited for children include work:
 - (a) with exposure to physical, psychological or sexual abuse;
 - (b) underground, underwater, working at heights or in confined spaces;
 - (c) with dangerous machinery, equipment or tools, or involving handling or transport of heavy loads;
 - (d) in unhealthy environments exposing children to hazardous substances, agents, or processes, or to temperatures, noise or vibration damaging to health; or

- (e) under difficult conditions such as work for long hours, during the night or in confinement on the premises of the employer.

- 14.8 The Supplier shall comply, and shall require its Subcontractors if any to comply, with all applicable health and safety regulations, laws, guidelines, and any other requirement stated in the Technical Specifications.
- 14.9 **Pursuant to the SCC**, the Supplier, including its Subcontractors/ suppliers/ manufacturers shall take all technical and organizational measures necessary to protect the information technology systems and data used in connection with the Contract. Without limiting the foregoing, the Supplier, including its Subcontractors/ suppliers/ manufacturers, shall use all reasonable efforts to establish, maintain, implement and comply with, reasonable information technology, information security, cyber security and data protection controls, policies and procedures, including oversight, access controls, encryption, technological and physical safeguards and business continuity/disaster recovery and security plans that are designed to protect against and prevent breach, destruction, loss, unauthorized distribution, use, access, disablement, misappropriation or modification, or other compromise or misuse of or relating to any information technology system or data used in connection with the Contract.
- 14.10 The Supplier shall comply with additional obligations as **specified in the SCC**.

15. Contract Price

- 15.1 Prices charged by the Supplier for the Goods supplied and the Related Services performed under the Contract shall not vary from the prices quoted by the Supplier in its Bid, with the exception of any price adjustments **authorized in the SCC**.

16. Terms of Payment

- 16.1 The Contract Price, including any Advance Payments, if applicable, shall be paid as **specified in the SCC**.
- 16.2 The Supplier's request for payment shall be made to the Purchaser in writing, accompanied by invoices describing, as appropriate, the Goods delivered and Related Services performed, and by the documents submitted pursuant to GCC Clause 13 and upon fulfillment of all other obligations stipulated in the Contract.
- 16.3 Payments shall be made promptly by the Purchaser, but in no case later than sixty (60) days after submission of an invoice or request for payment by the Supplier, and after the Purchaser has accepted it.

- 16.4 The currencies in which payments shall be made to the Supplier under this Contract shall be those in which the Bid price is expressed.
- 16.5 In the event that the Purchaser fails to pay the Supplier any payment by its due date or within the period **set forth in the SCC**, the Purchaser shall pay to the Supplier interest on the amount of such delayed payment at the rate **shown in the SCC**, for the period of delay until payment has been made in full, whether before or after judgment or arbitration award.
- 17. Taxes and Duties**
- 17.1 For goods manufactured outside the Purchaser's Country, the Supplier shall be entirely responsible for all taxes, stamp duties, license fees, and other such levies imposed outside the Purchaser's Country.
- 17.2 For goods Manufactured within the Purchaser's Country, the Supplier shall be entirely responsible for all taxes, duties, license fees, etc., incurred until delivery of the contracted Goods to the Purchaser.
- 17.3 If any tax exemptions, reductions, allowances or privileges may be available to the Supplier in the Purchaser's Country, the Purchaser shall use its best efforts to enable the Supplier to benefit from any such tax savings to the maximum allowable extent.
- 18. Performance Security**
- 18.1 If required as specified in the SCC, the Supplier shall, within twenty-eight (28) days of the notification of contract award, provide a performance security for the performance of the Contract in the amount **specified in the SCC**.
- 18.2 The proceeds of the Performance Security shall be payable to the Purchaser as compensation for any loss resulting from the Supplier's failure to complete its obligations under the Contract.
- 18.3 As specified in the SCC, the Performance Security, if required, shall be denominated in the currency (ies) of the Contract, or in a freely convertible currency acceptable to the Purchaser; and shall be in one of the format stipulated by the **Purchaser in the SCC**, or in another format acceptable to the Purchaser.
- 18.4 The Performance Security shall be discharged by the Purchaser and returned to the Supplier not later than twenty-eight (28) days following the date of Completion of the Supplier's performance obligations under the Contract, including any warranty obligations, unless **specified otherwise in the SCC**.
- 19. Copyright**
- 19.1 The copyright in all drawings, documents, and other materials containing data and information furnished to the Purchaser by the Supplier herein shall remain vested in the Supplier, or, if

they are furnished to the Purchaser directly or through the Supplier by any third party, including suppliers of materials, the copyright in such materials shall remain vested in such third party.

20. Confidential Information

- 20.1 The Purchaser and the Supplier shall keep confidential and shall not, without the written consent of the other party hereto, divulge to any third party any documents, data, or other information furnished directly or indirectly by the other party hereto in connection with the Contract, whether such information has been furnished prior to, during or following completion or termination of the Contract. Notwithstanding the above, the Supplier may furnish to its Subcontractor such documents, data, and other information it receives from the Purchaser to the extent required for the Subcontractor to perform its work under the Contract, in which event the Supplier shall obtain from such Subcontractor an undertaking of confidentiality similar to that imposed on the Supplier under GCC Clause 20.
- 20.2 The Purchaser shall not use such documents, data, and other information received from the Supplier for any purposes unrelated to the contract. Similarly, the Supplier shall not use such documents, data, and other information received from the Purchaser for any purpose other than the performance of the Contract.
- 20.3 The obligation of a party under GCC Sub-Clauses 20.1 and 20.2 above, however, shall not apply to information that:
- (a) the Purchaser or Supplier need to share with the Bank or other institutions participating in the financing of the Contract;
 - (b) now or hereafter enters the public domain through no fault of that party;
 - (c) can be proven to have been possessed by that party at the time of disclosure and which was not previously obtained, directly or indirectly, from the other party; or
 - (d) otherwise lawfully becomes available to that party from a third party that has no obligation of confidentiality.
- 20.4 The above provisions of GCC Clause 20 shall not in any way modify any undertaking of confidentiality given by either of the parties hereto prior to the date of the Contract in respect of the Supply or any part thereof.

- 20.5 The provisions of GCC Clause 20 shall survive completion or termination, for whatever reason, of the Contract.

21. Subcontracting

- 21.1 The Supplier shall notify the Purchaser in writing of all subcontracts awarded under the Contract if not already specified in the Bid. Notification by the Supplier, for addition of any Subcontractor not named in the Contract, shall also include the Subcontractor's declaration in accordance with Appendix 2 to the GCC- Sexual exploitation and Abuse (SEA) and/or Sexual Harassment (SH) Performance Declaration. Such notification, in the original Bid or later shall not relieve the Supplier from any of its obligations, duties, responsibilities, or liability under the Contract.
- 21.2 Subcontracts shall comply with the provisions of GCC Clauses 3 and 7.

22. Specifications and Standards

- 22.1 Technical Specifications and Drawings
- (a) The Goods and Related Services supplied under this Contract shall conform to the technical specifications and standards mentioned in Section VI, Schedule of Requirements and, when no applicable standard is mentioned, the standard shall be equivalent or superior to the official standards whose application is appropriate to the Goods' country of origin.
 - (b) The Supplier shall be entitled to disclaim responsibility for any design, data, drawing, specification or other document, or any modification thereof provided or designed by or on behalf of the Purchaser, by giving a notice of such disclaimer to the Purchaser.
 - (c) Wherever references are made in the Contract to codes and standards in accordance with which it shall be executed, the edition or the revised version of such codes and standards shall be those specified in the Schedule of Requirements. During Contract execution, any changes in any such codes and standards shall be applied only after approval by the Purchaser and shall be treated in accordance with GCC Clause 33.

23. Packing and Documents

- 23.1 The Supplier shall provide such packing of the Goods as is required to prevent their damage or deterioration during transit to their final destination, as indicated in the Contract. During transit, the packing shall be sufficient to withstand, without limitation, rough handling and exposure to extreme temperatures, salt and precipitation, and open storage. Packing case size and weights shall take into consideration, where

appropriate, the remoteness of the goods' final destination and the absence of heavy handling facilities at all points in transit.

- 23.2 The packing, marking, and documentation within and outside the packages shall comply strictly with such special requirements as shall be expressly provided for in the Contract, including additional requirements, if any, **specified in the SCC**, and in any other instructions ordered by the Purchaser.

24. Insurance

- 24.1 Unless otherwise **specified in the SCC**, the Goods supplied under the Contract shall be fully insured—in a freely convertible currency from an eligible country—against loss or damage incidental to manufacture or acquisition, transportation, storage, and delivery, in accordance with the applicable Incoterms or in the manner specified in the **SCC**.

25. Transportation and Incidental Services

- 25.1 Unless otherwise **specified in the SCC**, responsibility for arranging transportation of the Goods shall be in accordance with the specified Incoterms.
- 25.2 The Supplier may be required to provide any or all of the following services, including additional services, if any, **specified in SCC**:
- (a) performance or supervision of on-site assembly and/or start-up of the supplied Goods;
 - (b) furnishing of tools required for assembly and/or maintenance of the supplied Goods;
 - (c) furnishing of a detailed operations and maintenance manual for each appropriate unit of the supplied Goods;
 - (d) performance or supervision or maintenance and/or repair of the supplied Goods, for a period of time agreed by the parties, provided that this service shall not relieve the Supplier of any warranty obligations under this Contract; and
 - (e) training of the Purchaser's personnel, at the Supplier's plant and/or on-site, in assembly, start-up, operation, maintenance, and/or repair of the supplied Goods.
- 25.3 Prices charged by the Supplier for incidental services, if not included in the Contract Price for the Goods, shall be agreed upon in advance by the parties and shall not exceed the prevailing rates charged to other parties by the Supplier for similar services

26. Inspections and Tests

- 26.1 The Supplier shall at its own expense and at no cost to the Purchaser carry out all such tests and/or inspections of the Goods and Related Services as are **specified in the SCC**.
- 26.2 The inspections and tests may be conducted on the premises of the Supplier or its Subcontractor, at point of delivery, and/or at the Goods' final destination, or in another place in the Purchaser's Country as **specified in the SCC**. Subject to GCC Sub-Clause 26.3, if conducted on the premises of the Supplier or its Subcontractor, all reasonable facilities and assistance, including access to drawings and production data, shall be furnished to the inspectors at no charge to the Purchaser.
- 26.3 The Purchaser or its designated representative shall be entitled to attend the tests and/or inspections referred to in GCC Sub-Clause 26.2, provided that the Purchaser bear all of its own costs and expenses incurred in connection with such attendance including, but not limited to, all traveling and board and lodging expenses.
- 26.4 Whenever the Supplier is ready to carry out any such test and inspection, it shall give a reasonable advance notice, including the place and time, to the Purchaser. The Supplier shall obtain from any relevant third party or manufacturer any necessary permission or consent to enable the Purchaser or its designated representative to attend the test and/or inspection.
- 26.5 The Purchaser may require the Supplier to carry out any test and/or inspection not required by the Contract but deemed necessary to verify that the characteristics and performance of the Goods comply with the technical specifications codes and standards under the Contract, provided that the Supplier's reasonable costs and expenses incurred in the carrying out of such test and/or inspection shall be added to the Contract Price. Further, if such test and/or inspection impedes the progress of manufacturing and/or the Supplier's performance of its other obligations under the Contract, due allowance will be made in respect of the Delivery Dates and Completion Dates and the other obligations so affected.
- 26.6 The Supplier shall provide the Purchaser with a report of the results of any such test and/or inspection.
- 26.7 The Purchaser may reject any Goods or any part thereof that fail to pass any test and/or inspection or do not conform to the specifications. The Supplier shall either rectify or replace such rejected Goods or parts thereof or make alterations necessary to meet the specifications at no cost to the Purchaser, and shall

repeat the test and/or inspection, at no cost to the Purchaser, upon giving a notice pursuant to GCC Sub-Clause 26.4.

- 26.8 The Supplier agrees that neither the execution of a test and/or inspection of the Goods or any part thereof, nor the attendance by the Purchaser or its representative, nor the issue of any report pursuant to GCC Sub-Clause 26.6, shall release the Supplier from any warranties or other obligations under the Contract.

27. Liquidated Damages

- 27.1 Except as provided under GCC Clause 32, if the Supplier fails to deliver any or all of the Goods by the Date(s) of delivery or perform the Related Services within the period specified in the Contract, the Purchaser may without prejudice to all its other remedies under the Contract, deduct from the Contract Price, as liquidated damages, a sum equivalent to the percentage **specified in the SCC** of the delivered price of the delayed Goods or unperformed Services for each week or part thereof of delay until actual delivery or performance, up to a maximum deduction of the percentage **specified in those SCC**. Once the maximum is reached, the Purchaser may terminate the Contract pursuant to GCC Clause 35.

28. Warranty

- 28.1 The Supplier warrants that all the Goods are new, unused, and of the most recent or current models, and that they incorporate all recent improvements in design and materials, unless provided otherwise in the Contract.
- 28.2 Subject to GCC Sub-Clause 22.1(b), the Supplier further warrants that the Goods shall be free from defects arising from any act or omission of the Supplier or arising from design, materials, and workmanship, under normal use in the conditions prevailing in the country of final destination.
- 28.3 Unless otherwise **specified in the SCC**, the warranty shall remain valid for twelve (12) months after the Goods, or any portion thereof as the case may be, have been delivered to and accepted at the final destination **indicated in the SCC**, or for eighteen (18) months after the date of shipment from the port or place of loading in the country of origin, whichever period concludes earlier.
- 28.4 The Purchaser shall give notice to the Supplier stating the nature of any such defects together with all available evidence thereof, promptly following the discovery thereof. The Purchaser shall afford all reasonable opportunity for the Supplier to inspect such defects.

28.5 Upon receipt of such notice, the Supplier shall, within the period **specified in the SCC**, expeditiously repair or replace the defective Goods or parts thereof, at no cost to the Purchaser.

28.6 If having been notified, the Supplier fails to remedy the defect within the period **specified in the SCC**, the Purchaser may proceed to take within a reasonable period such remedial action as may be necessary, at the Supplier's risk and expense and without prejudice to any other rights which the Purchaser may have against the Supplier under the Contract.

29. Patent Indemnity

29.1 The Supplier shall, subject to the Purchaser's compliance with GCC Sub-Clause 29.2, indemnify and hold harmless the Purchaser and its employees and officers from and against any and all suits, actions or administrative proceedings, claims, demands, losses, damages, costs, and expenses of any nature, including attorney's fees and expenses, which the Purchaser may suffer as a result of any infringement or alleged infringement of any patent, utility model, registered design, trademark, copyright, or other intellectual property right registered or otherwise existing at the date of the Contract by reason of:

- (a) the installation of the Goods by the Supplier or the use of the Goods in the country where the Site is located; and
- (b) the sale in any country of the products produced by the Goods.

Such indemnity shall not cover any use of the Goods or any part thereof other than for the purpose indicated by or to be reasonably inferred from the Contract, neither any infringement resulting from the use of the Goods or any part thereof, or any products produced thereby in association or combination with any other equipment, plant, or materials not supplied by the Supplier, pursuant to the Contract.

29.2 If any proceedings are brought or any claim is made against the Purchaser arising out of the matters referred to in GCC Sub-Clause 29.1, the Purchaser shall promptly give the Supplier a notice thereof, and the Supplier may at its own expense and in the Purchaser's name conduct such proceedings or claim and any negotiations for the settlement of any such proceedings or claim.

29.3 If the Supplier fails to notify the Purchaser within twenty-eight (28) days after receipt of such notice that it intends to conduct any such proceedings or claim, then the Purchaser shall be free to conduct the same on its own behalf.

29.4 The Purchaser shall, at the Supplier's request, afford all available assistance to the Supplier in conducting such proceedings or claim, and shall be reimbursed by the Supplier for all reasonable expenses incurred in so doing.

29.5 The Purchaser shall indemnify and hold harmless the Supplier and its employees, officers, and Subcontractors from and against any and all suits, actions or administrative proceedings, claims, demands, losses, damages, costs, and expenses of any nature, including attorney's fees and expenses, which the Supplier may suffer as a result of any infringement or alleged infringement of any patent, utility model, registered design, trademark, copyright, or other intellectual property right registered or otherwise existing at the date of the Contract arising out of or in connection with any design, data, drawing, specification, or other documents or materials provided or designed by or on behalf of the Purchaser.

30. Limitation of Liability

- 30.1 Except in cases of criminal negligence or willful misconduct,
- (a) the Supplier shall not be liable to the Purchaser, whether in contract, tort, or otherwise, for any indirect or consequential loss or damage, loss of use, loss of production, or loss of profits or interest costs, provided that this exclusion shall not apply to any obligation of the Supplier to pay liquidated damages to the Purchaser and
 - (b) the aggregate liability of the Supplier to the Purchaser, whether under the Contract, in tort or otherwise, shall not exceed the total Contract Price, provided that this limitation shall not apply to the cost of repairing or replacing defective equipment, or to any obligation of the supplier to indemnify the Purchaser with respect to patent infringement

31. Change in Laws and Regulations

- 31.1 Unless otherwise specified in the Contract, if after the date of 28 days prior to date of Bid submission, any law, regulation, ordinance, order or bylaw having the force of law is enacted, promulgated, abrogated, or changed in the place of the Purchaser's Country where the Site is located (which shall be deemed to include any change in interpretation or application by the competent authorities) that subsequently affects the Delivery Date and/or the Contract Price, then such Delivery Date and/or Contract Price shall be correspondingly increased or decreased, to the extent that the Supplier has thereby been affected in the performance of any of its obligations under the Contract. Notwithstanding the foregoing, such additional or reduced cost shall not be separately paid or credited if the same has already

been accounted for in the price adjustment provisions where applicable, in accordance with GCC Clause 15.

32. Force Majeure

- 32.1 The Supplier shall not be liable for forfeiture of its Performance Security, liquidated damages, or termination for default if and to the extent that its delay in performance or other failure to perform its obligations under the Contract is the result of an event of Force Majeure.
- 32.2 For purposes of this Clause, “Force Majeure” means an event or situation beyond the control of the Supplier that is not foreseeable, is unavoidable, and its origin is not due to negligence or lack of care on the part of the Supplier. Such events may include, but not be limited to, acts of the Purchaser in its sovereign capacity, wars or revolutions, fires, floods, epidemics, quarantine restrictions, and freight embargoes.
- 32.3 If a Force Majeure situation arises, the Supplier shall promptly notify the Purchaser in writing of such condition and the cause thereof. Unless otherwise directed by the Purchaser in writing, the Supplier shall continue to perform its obligations under the Contract as far as is reasonably practical, and shall seek all reasonable alternative means for performance not prevented by the Force Majeure event.

33. Change Orders and Contract Amendments

- 33.1 The Purchaser may at any time order the Supplier through notice in accordance GCC Clause 8, to make changes within the general scope of the Contract in any one or more of the following:
- (a) drawings, designs, or specifications, where Goods to be furnished under the Contract are to be specifically manufactured for the Purchaser;
 - (b) the method of shipment or packing;
 - (c) the place of delivery; and
 - (d) the Related Services to be provided by the Supplier.
- 33.2 If any such change causes an increase or decrease in the cost of, or the time required for, the Supplier’s performance of any provisions under the Contract, an equitable adjustment shall be made in the Contract Price or in the Delivery/Completion Schedule, or both, and the Contract shall accordingly be amended. Any claims by the Supplier for adjustment under this Clause must be asserted within twenty-eight (28) days from the date of the Supplier’s receipt of the Purchaser’s change order.
- 33.3 Prices to be charged by the Supplier for any Related Services that might be needed but which were not included in the Contract shall be agreed upon in advance by the parties and shall not

exceed the prevailing rates charged to other parties by the Supplier for similar services.

33.4 **Value Engineering:** The Supplier may prepare, at its own cost, a value engineering proposal at any time during the performance of the contract. The value engineering proposal shall, at a minimum, include the following;

- (a) the proposed change(s), and a description of the difference to the existing contract requirements;
- (b) a full cost/benefit analysis of the proposed change(s) including a description and estimate of costs (including life cycle costs) the Purchaser may incur in implementing the value engineering proposal; and
- (c) a description of any effect(s) of the change on performance/functionality.

The Purchaser may accept the value engineering proposal if the proposal demonstrates benefits that:

- (a) accelerates the delivery period; or
- (b) reduces the Contract Price or the life cycle costs to the Purchaser; or
- (c) improves the quality, efficiency or sustainability of the Goods; or
- (d) yields any other benefits to the Purchaser,

without compromising the necessary functions of the Facilities.

If the value engineering proposal is approved by the Purchaser and results in:

- (a) a reduction of the Contract Price; the amount to be paid to the Supplier shall be the percentage specified **in the PCC** of the reduction in the Contract Price; or
- (b) an increase in the Contract Price; but results in a reduction in life cycle costs due to any benefit described in (a) to (d) above, the amount to be paid to the Supplier shall be the full increase in the Contract Price.

33.5 Subject to the above, no variation in or modification of the terms of the Contract shall be made except by written amendment signed by the parties.

34. Extensions of Time

34.1 If at any time during performance of the Contract, the Supplier or its subcontractors should encounter conditions impeding timely delivery of the Goods or completion of Related Services pursuant to GCC Clause 13, the Supplier shall promptly notify

the Purchaser in writing of the delay, its likely duration, and its cause. As soon as practicable after receipt of the Supplier's notice, the Purchaser shall evaluate the situation and may at its discretion extend the Supplier's time for performance, in which case the extension shall be ratified by the parties by amendment of the Contract.

- 34.2 Except in case of Force Majeure, as provided under GCC Clause 32, a delay by the Supplier in the performance of its Delivery and Completion obligations shall render the Supplier liable to the imposition of liquidated damages pursuant to GCC Clause 26, unless an extension of time is agreed upon, pursuant to GCC Sub-Clause 34.1.

35. Termination

35.1 Termination for Default

- (a) The Purchaser, without prejudice to any other remedy for breach of Contract, by written notice of default sent to the Supplier, may terminate the Contract in whole or in part:
 - (i) if the Supplier fails to deliver any or all of the Goods within the period specified in the Contract, or within any extension thereof granted by the Purchaser pursuant to GCC Clause 34;
 - (ii) if the Supplier fails to perform any other obligation under the Contract; or
 - (iii) if the Supplier, in the judgment of the Purchaser has engaged in Fraud and Corruption, as defined in paragraph 2.2 a of the Appendix 1 to the GCC, in competing for or in executing the Contract.
- (b) In the event the Purchaser terminates the Contract in whole or in part, pursuant to GCC Clause 35.1(a), the Purchaser may procure, upon such terms and in such manner as it deems appropriate, Goods or Related Services similar to those undelivered or not performed, and the Supplier shall be liable to the Purchaser for any additional costs for such similar Goods or Related Services. However, the Supplier shall continue performance of the Contract to the extent not terminated.

35.2 Termination for Insolvency.

- (a) The Purchaser may at any time terminate the Contract by giving notice to the Supplier if the Supplier becomes bankrupt or otherwise insolvent. In such event, termination will be without compensation to the Supplier, provided that such termination will not prejudice or affect

any right of action or remedy that has accrued or will accrue thereafter to the Purchaser

35.3 Termination for Convenience.

- (a) The Purchaser, by notice sent to the Supplier, may terminate the Contract, in whole or in part, at any time for its convenience. The notice of termination shall specify that termination is for the Purchaser's convenience, the extent to which performance of the Supplier under the Contract is terminated, and the date upon which such termination becomes effective.
- (b) The Goods that are complete and ready for shipment within twenty-eight (28) days after the Supplier's receipt of notice of termination shall be accepted by the Purchaser at the Contract terms and prices. For the remaining Goods, the Purchaser may elect:
 - (i) to have any portion completed and delivered at the Contract terms and prices; and/or
 - (ii) to cancel the remainder and pay to the Supplier an agreed amount for partially completed Goods and Related Services and for materials and parts previously procured by the Supplier.

36. Assignment

- 36.1 Neither the Purchaser nor the Supplier shall assign, in whole or in part, their obligations under this Contract, except with prior written consent of the other party.

**37. Export
Restriction**

- 37.1 Notwithstanding any obligation under the Contract to complete all export formalities, any export restrictions attributable to the Purchaser, to the country of the Purchaser, or to the use of the products/goods, systems or services to be supplied, which arise from trade regulations from a country supplying those products/goods, systems or services, and which substantially impede the Supplier from meeting its obligations under the Contract, shall release the Supplier from the obligation to provide deliveries or services, always provided, however, that the Supplier can demonstrate to the satisfaction of the Purchaser and of the Bank that it has completed all formalities in a timely manner, including applying for permits, authorizations and licenses necessary for the export of the products/goods, systems or services under the terms of the Contract. Termination of the Contract on this basis shall be for the Purchaser's convenience pursuant to Sub-Clause 35.3.

APPENDIX 1

(Text in this Appendix shall not be modified)

Fraud and Corruption

1. Purpose

1.1 The Bank's Anti-Corruption Guidelines and this annex apply with respect to procurement under Bank Investment Project Financing operations.

2. Requirements

2.1 The Bank requires that Borrowers (including beneficiaries of Bank financing); bidders (applicants/proposers), consultants, contractors and suppliers; any sub-contractors, sub-consultants, service providers or suppliers; any agents (whether declared or not); and any of their personnel, observe the highest standard of ethics during the procurement process, selection and contract execution of Bank-financed contracts, and refrain from Fraud and Corruption.

2.2 To this end, the Bank:

- a. Defines, for the purposes of this provision, the terms set forth below as follows:
 - i. "corrupt practice" is the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence improperly the actions of another party;
 - ii. "fraudulent practice" is any act or omission, including misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain financial or other benefit or to avoid an obligation;
 - iii. "collusive practice" is an arrangement between two or more parties designed to achieve an improper purpose, including to influence improperly the actions of another party;
 - iv. "coercive practice" is impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party;
 - v. "obstructive practice" is:
 - (a) deliberately destroying, falsifying, altering, or concealing of evidence material to the investigation or making false statements to investigators in order to materially impede a Bank investigation into allegations of a corrupt, fraudulent, coercive, or collusive practice; and/or threatening, harassing, or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation; or
 - (b) acts intended to materially impede the exercise of the Bank's inspection and audit rights provided for under paragraph 2.2 e. below.

- b. Rejects a proposal for award if the Bank determines that the firm or individual recommended for award, any of its personnel, or its agents, or its sub-consultants, sub-contractors, service providers, suppliers and/ or their employees, has, directly or indirectly, engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices in competing for the contract in question;
- c. In addition to the legal remedies set out in the relevant Legal Agreement, may take other appropriate actions, including declaring misprocurement, if the Bank determines at any time that representatives of the Borrower or of a recipient of any part of the proceeds of the loan engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices during the procurement process, selection and/or execution of the contract in question, without the Borrower having taken timely and appropriate action satisfactory to the Bank to address such practices when they occur, including by failing to inform the Bank in a timely manner at the time they knew of the practices;
- d. Pursuant to the Bank's Anti-Corruption Guidelines, and in accordance with the Bank's prevailing sanctions policies and procedures, may sanction a firm or individual, either indefinitely or for a stated period of time, including by publicly declaring such firm or individual ineligible (i) to be awarded or otherwise benefit from a Bank-financed contract, financially or in any other manner;¹ (ii) to be a nominated² sub-contractor, consultant, manufacturer or supplier, or service provider of an otherwise eligible firm being awarded a Bank-financed contract; and (iii) to receive the proceeds of any loan made by the Bank or otherwise to participate further in the preparation or implementation of any Bank-financed project;
- e. Requires that a clause be included in bidding/request for proposals documents and in contracts financed by a Bank loan, requiring (i) bidders (applicants/proposers), consultants, contractors, and suppliers, and their sub-contractors, sub-consultants, service providers, suppliers, agents, personnel, permit the Bank to inspect³ all accounts, records and other documents relating to the procurement process, selection and/or contract execution, and to have them audited by auditors appointed by the Bank.

¹ For the avoidance of doubt, a sanctioned party's ineligibility to be awarded a contract shall include, without limitation, (i) applying for pre-qualification, expressing interest in a consultancy, and bidding, either directly or as a nominated sub-contractor, nominated consultant, nominated manufacturer or supplier, or nominated service provider, in respect of such contract, and (ii) entering into an addendum or amendment introducing a material modification to any existing contract.

² A nominated sub-contractor, nominated consultant, nominated manufacturer or supplier, or nominated service provider (different names are used depending on the particular bidding document) is one which has been: (i) included by the bidder in its pre-qualification application or bid because it brings specific and critical experience and know-how that allow the bidder to meet the qualification requirements for the particular bid; or (ii) appointed by the Borrower.

³ Inspections in this context usually are investigative (i.e., forensic) in nature. They involve fact-finding activities undertaken by the Bank or persons appointed by the Bank to address specific matters related to investigations/audits, such as evaluating the veracity of an allegation of possible Fraud and Corruption, through the appropriate mechanisms. Such activity includes but is not limited to: accessing and examining a firm's or individual's financial records and information, and making copies thereof as relevant; accessing and examining any other documents, data and information (whether in hard copy or electronic format) deemed relevant for the investigation/audit, and making copies thereof as relevant; interviewing staff and other relevant individuals; performing physical inspections and site visits; and obtaining third party verification of information.

APPENDIX 2

Sexual Exploitation and Abuse (SEA) and/or Sexual Harassment (SH) Performance Declaration for Subcontractors*

[The following table shall be filled in by each subcontractor proposed by the Supplier, that was not named in the Contract]

Subcontractor's Name: *[insert full name]*

Date: *[insert day, month, year]*

Contract reference *[insert contract reference]*

Page *[insert page number]* of *[insert total number]* pages

SEA and/or SH Declaration
We: ☐ (a) have not been subject to disqualification by the Bank for non-compliance with SEA/ SH obligations. ☐ (b) are subject to disqualification by the Bank for non-compliance with SEA/ SH obligations. ☐ (c) had been subject to disqualification by the Bank for non-compliance with SEA/ SH obligations, and were removed from the disqualification list. An arbitral award on the disqualification case has been made in our favor.
<i>[If (c) above is applicable, attach evidence of an arbitral award reversing the findings on the issues underlying the disqualification.]</i>
Period of disqualification: From: _____ To: _____

Name of the Subcontractor _____

Name of the person duly authorized to sign on behalf of the Subcontractor _____

Title of the person signing on behalf of the Subcontractor _____

Signature of the person named above _____

Date signed _____ day of _____, _____

Countersignature of authorized representative of the Supplier:

Signature: _____

Date signed _____ day of _____, _____

Section IX - Special Conditions of Contract

The following Special Conditions of Contract (SCC) shall supplement and / or amend the General Conditions of Contract (GCC). Whenever there is a conflict, the provisions herein shall prevail over those in the GCC.

GCC 1.1(i)	The Purchaser's Country is: The Republic of Ghana
GCC 1.1(j)	The Purchaser is: The Republic of Ghana represented by the Ministry of Communication, Digital Technology and Innovations
GCC 1.1 (o)	The Project Site(s): Primary Data Center in Accra and Secondary Data Center in Kumasi
GCC 1.1 (p)	The term SEA/SH where used in the Contract has the following meaning: • “Sexual Exploitation and Abuse” “(SEA)” means the following: Sexual Exploitation is defined as any actual or attempted abuse of position of vulnerability, differential power or trust, for sexual purposes, including, but not limited to, profiting monetarily, socially or politically from the sexual exploitation of another. Sexual Abuse is defined as the actual or threatened physical intrusion of a sexual nature, whether by force or under unequal or coercive conditions. • “Sexual Harassment” “(SH)” is defined as unwelcome sexual advances, requests for sexual favors, and other verbal or physical conduct of a sexual nature by supplier's personnel with other supplier's, or purchaser's personnel.
GCC 4.2 (a)	The meaning of the trade terms shall be as prescribed by Incoterms .
GCC 4.2 (b)	The version edition of Incoterms shall be 2020 .
GCC 5.1	The language shall be: English

GCC 8.1	For <u>notices</u>, the Purchaser's address shall be: The Chief Director Attention: Project Coordinator Ministry of Communication, Digital Technology and Innovations GDAP Project Fifth Floor, Rooms 38/39 Ministry of Communication, Digital Technology and Innovations Building Complex Abdul Diouf Street, Ridge, Accra Ghana Digital Address: GA-079-0539 Electronic mail address: pcu.gdap@moc.gov.gh;
GCC 9.1	The governing law shall be the law of: Republic of Ghana
GCC 10.2	The rules of procedure for arbitration proceedings pursuant to GCC Clause 10.2 shall be as follows: (a) Contract with foreign Supplier: GCC 10.2 (a) Any dispute, controversy or claim arising out of or relating to this Contract, or breach, termination or invalidity thereof, shall be settled by arbitration in accordance with the UNCITRAL Arbitration Rules as at present in force. (b) Contracts with Supplier national of the Purchaser's Country: In the case of a dispute between the Purchaser and a Supplier who is a national of the Purchaser's Country, the dispute shall be referred to adjudication or arbitration in accordance with the laws of the Purchaser's Country.
GCC 13.1	Details of Shipping and other Documents to be furnished by the Supplier are • Commercial Invoice, • Packing List, • Certificate of Origin, where required under applicable regulations or the Contract, • Manufacturer's or Supplier's warranty certificate, • inspection certificate issued by nominated inspection agency, • insurance certificate, • Supplier's factory shipping details.

	• negotiable bill of lading, • a non-negotiable sea way bill, • an airway bill, a railway consignment note, • a road consignment note, • Certificate of Origin, where required under applicable regulations or the Contract, • Evidence of customs clearance and payment of all applicable import duties and taxes at the place of destination, as required under DDP terms. The above documents shall be received by the Purchaser before arrival of the Goods and, if not received, the Supplier will be responsible for any consequent expenses.
GCC 14.9	Cyber Security <i>does not apply</i>

GCC 14.10	GCC 14.10.1 The Supplier shall have a code of conduct, and provide appropriate sensitization, for the Supplier's personnel carrying out installation, operation, maintenance, operation and maintenance that include, but not limited to, maintaining a safe working environment and not engaging in the following practices: (i) any form of sexual harassment including unwelcome sexual advances, requests for sexual favors, and other verbal or physical conduct of a sexual nature with other Supplier's or Purchaser's personnel; (ii) any form of sexual exploitation, which means any actual or attempted abuse of position of vulnerability, differential power or trust, for sexual purposes, including, but not limited to, profiting monetarily, socially or politically from the sexual exploitation of another; (iii) any form of sexual abuse, which means the actual or threatened physical intrusion of a sexual nature, whether by force or under unequal or coercive conditions; and (iv) any form of sexual activity with individuals under the age of 18, except in case of pre-existing marriage. GCC 14.10.2 The Purchaser may require the Supplier to remove (or cause to be removed), from the site or other places where the installation, operation, maintenance, operation and maintenance is being executed, a Supplier's personnel that undertakes behaviors that are inconsistent with the code of conduct stated in GCC 14.9.1. Notwithstanding any requirement from the Purchaser to replace any such person, the Supplier shall immediately remove (or cause to be removed) any such person, from the site or other places where the installation, operation, maintenance, operation and maintenance is being executed. In either case, the Supplier shall promptly appoint, as appropriate, a suitable replacement with equivalent skills and experience.
GCC 15.1	The prices charged for the Goods supplied and the related Services performed shall not be adjustable.
GCC 16.1	Sample provision GCC 16.1—The method and conditions of payment to be made to the Supplier under this Contract shall be as follows: Payment for Goods supplied from abroad:

	Payment of foreign currency portion shall be made in the currency of the Contract Price in the following manner: i. Advance Payment: Twenty (20) percent of the Contract Price shall be paid within thirty (30) days of signing of the Contract, and upon submission of a claim and a bank guarantee for equivalent amount valid until the Goods are delivered and, in the form, provided in the bidding document or another form acceptable to the Purchaser Payment for Goods shall be made in the currency specified for the Goods in the applicable Price Schedule in the following manner: ii. On Shipment: Sixty (60) percent of the Contract Price of the Goods shipped shall be paid either through irrevocable confirmed letter of credit opened in favor of the Supplier in a bank in its country, Direct Payment disbursement method, as defined in the World Bank's Disbursement Guidelines for Investment Project Financing, or through Bank Transfer upon submission of documents specified in GCC Clause 13. iii. On Delivery and Installation: Ten (10) percent of the Contract Price of Goods installed shall be paid within thirty (30) days upon submission of claim supported by the Installation certificate issued by the Supplier. iv. On Acceptance: Ten (10) percent of the Contract Price of Goods received shall be paid within thirty (30) days of receipt of the Goods upon submission of claim supported by the acceptance certificate issued by the Purchaser. Payment of local currency portion shall be made in Ghana Cedis (GH¢) within thirty (30) days of presentation of claim supported by a certificate from the Purchaser declaring that the Goods have been delivered and that all other contracted Services have been performed. Payment for Goods and Services supplied from within the Purchaser's Country: Payment for Goods and Services supplied from within the Purchaser's Country shall be made in Ghana Cedis (GH¢), as follows: (i) Advance Payment: Twenty (20) percent of the Contract Price shall be paid within thirty (30) days of signing of the Contract against a simple receipt and a bank guarantee for the equivalent amount and in the form provided in the bidding document or another form acceptable to the Purchaser.
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	(ii) On Delivery and Installation: Sixty (60) percent of the Contract Price shall be paid on receipt of the Goods and upon submission of the documents specified in GCC Clause 13. (iii) On Acceptance: The remaining twenty (20) percent of the Contract Price shall be paid to the Supplier within thirty (30) days after the date of the acceptance certificate for the respective delivery issued by the Purchaser.
GCC 16.5	The payment-delay period after which the Purchaser shall pay interest to the supplier shall be <i>[insert number]</i> days. – Not Applicable The interest rate that shall be applied is <i>[insert number]</i> % - Not Applicable
GCC 18.1	A Performance Security shall be required. The amount of the Performance Security shall be: 10% percentage of the contract price.
GCC 18.3	If required, the Performance Security shall be in the form of : a Demand Guarantee The Performance security shall be denominated in a freely convertible currency acceptable to the Purchaser .
GCC 18.4	Discharge of the Performance Security shall take place: as indicated in sub clause GCC 18.4.
GCC 23.2	The packing, marking and documentation within and outside the packages shall be: Type of packing required - ability to withstand external impact of any magnitude The markings in the packing required - GDAP/Comp2.1.1 - GH-MOCDTI-509838-GO-RFB All documentation required - Shipping documentation
GCC 24.1	The insurance coverage shall be as specified in the Incoterms.
GCC 25.1	Responsibility for transportation of the Goods shall be as specified in the Incoterms.
GCC 25.2	Incidental services to be provided are: Not Applicable
GCC 26.1	The inspections and tests shall be: Not Applicable
GCC 26.2	The Inspections and tests shall be conducted at: Primary Data Center in Accra and Secondary Data Center in Kumasi
GCC 27.1	The liquidated damage shall be: 1% per week.
GCC 27.1	The maximum amount of liquidated damages shall be: 10%

GCC 28.3	The period of validity of the Warranty shall be: 365 days For purposes of the Warranty, the place(s) of final destination(s) shall be: Primary Data Center in Accra and Secondary Data Center in Kumasi (b) pay liquidated damages to the Purchaser with respect to the failure to meet the contractual guarantees. The rate of these liquidated damages shall be 10%.
GCC 28.5 & 28.6	The period for repair or replacement shall be: 10 days.
GCC 33.4	If the value engineering proposal is approved by the Purchaser the amount to be paid to the Supplier shall be ____% (insert appropriate percentage. The percentage is normally up to 50%) of the reduction in the Contract Price. Not Applicable

Attachment: Price Adjustment Formula – Not Applicable

Section X - Contract Forms

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Notification of Intention to Award

[This Notification of Intention to Award shall be sent to each Bidder that submitted a Bid, unless the Bidder has previously received notice of exclusion from the process at an interim stage of the procurement process.]

[Send this Notification to the Bidder's Authorized Representative named in the Bidder Information Form]

For the attention of Bidder's Authorized Representative

Name: *[insert Authorized Representative's name]*

Address: *[insert Authorized Representative's Address]*

Telephone/Fax numbers: *[insert Authorized Representative's telephone/fax numbers]*

Email Address: *[insert Authorized Representative's email address]*

[IMPORTANT: insert the date that this Notification is transmitted to Bidders. The Notification must be sent to all Bidders simultaneously. This means on the same date and as close to the same time as possible.]

DATE OF TRANSMISSION: This Notification is sent by: *[email/fax]* on *[date]* (local time)

Notification of Intention to Award

Purchaser: *[insert the name of the Purchaser]*

Project: *[insert name of project]*

Contract title: *[insert the name of the contract]*

Country: *[insert country where RFB is issued]*

Loan No. /Credit No. / Grant No.: *[insert reference number for loan/credit/grant]*

RFB No: *[insert RFB reference number from Procurement Plan]*

This Notification of Intention to Award (Notification) notifies you of our decision to award the above contract. The transmission of this Notification begins the Standstill Period. During the Standstill Period you may:

- a) request a debriefing in relation to the evaluation of your Bid, and/or
- b) submit a Procurement-related Complaint in relation to the decision to award the contract.

1. The successful Bidder

Name:	<i>[insert name of successful Bidder]</i>
Address:	<i>[insert address of the successful Bidder]</i>
Contract price:	<i>[insert contract price of the successful Bid]</i>

Total combined score:	<i>[insert the total combined score of the successful Bidder]</i>
------------------------------	---

2. Other Bidders *[INSTRUCTIONS: insert names of all Bidders that submitted a Bid, Bid prices as read out and evaluated, technical scores and combined scores.]*

Name of Bidder	Technical Score	Bid Price	Evaluated Bid Cost	Combined Score
<i>[insert name]</i>	<i>[insert Technical score]</i>	<i>[insert Bid price]</i>	<i>[insert evaluated cost]</i>	<i>[insert combined score]</i>
<i>[insert name]</i>	<i>[insert Technical score]</i>	<i>[insert Bid price]</i>	<i>[insert evaluated cost]</i>	<i>[insert combined score]</i>
<i>[insert name]</i>	<i>[insert Technical score]</i>	<i>[insert Bid price]</i>	<i>[insert evaluated cost]</i>	<i>[insert combined score]</i>
<i>[insert name]</i>	<i>[insert Technical score]</i>	<i>[insert Bid price]</i>	<i>[insert evaluated cost]</i>	<i>[insert combined score]</i>
<i>[insert name]</i>	<i>[insert Technical score]</i>	<i>[insert Bid price]</i>	<i>[insert evaluated cost]</i>	<i>[insert combined score]</i>

3. Reason/s why your Bid was unsuccessful *[Delete if the combined score already reveals the reason]*

[INSTRUCTIONS: State the reason/s why this Bidder's Bid was unsuccessful. Do NOT include: (a) a point by point comparison with another Bidder's Bid or (b) information that is marked confidential by the Bidder in its Bid.]

4. How to request a debriefing

DEADLINE: The deadline to request a debriefing expires at midnight on *[insert date]* (local time).

You may request a debriefing in relation to the results of the evaluation of your Bid. If you decide to request a debriefing your written request must be made within three (3) Business Days of receipt of this Notification of Intention to Award.

Provide the contract name, reference number, name of the Bidder, contact details; and address the request for debriefing as follows:

Attention: *[insert full name of person, if applicable]*

Title/position: *[insert title/position]*

Agency: *[insert name of Purchaser]*

Email address: *[insert email address]*

Fax number: *[insert fax number] delete if not used*

If your request for a debriefing is received within the 3 Business Days deadline, we will provide the debriefing within five (5) Business Days of receipt of your request. If we are unable to provide the debriefing within this period, the Standstill Period shall be extended by five (5) Business Days after the date that the debriefing is provided. If this happens, we will notify you and confirm the date that the extended Standstill Period will end.

The debriefing may be in writing, by phone, video conference call or in person. We shall promptly advise you in writing how the debriefing will take place and confirm the date and time.

If the deadline to request a debriefing has expired, you may still request a debriefing. In this case, we will provide the debriefing as soon as practicable, and normally no later than fifteen (15) Business Days from the date of publication of the Contract Award Notice.

5. How to make a complaint

Period: Procurement-related Complaint challenging the decision to award shall be submitted by midnight, *[insert date]* (local time).

Provide the contract name, reference number, name of the Bidder, contact details; and address the Procurement-related Complaint as follows:

Attention: *[insert full name of person, if applicable]*

Title/position: *[insert title/position]*

Agency: *[insert name of Purchaser]*

Email address: *[insert email address]*

Fax number: *[insert fax number] delete if not used*

At this point in the procurement process, you may submit a Procurement-related Complaint challenging the decision to award the contract. You do not need to have requested, or received, a debriefing before making this complaint. Your complaint must be submitted within the Standstill Period and received by us before the Standstill Period ends.

Further information:

For more information see the [Procurement Regulations for IPF Borrowers \(Procurement Regulations\)](#) (Annex III). You should read these provisions before preparing and submitting your complaint. In addition, the World Bank's Guidance "[How to make a Procurement-related Complaint](#)" provides a useful explanation of the process, as well as a sample letter of complaint.

In summary, there are four essential requirements:

1. You must be an 'interested party'. In this case, that means a Bidder who submitted a Bid in this bidding process, and is the recipient of a Notification of Intention to Award.
2. The complaint can only challenge the decision to award the contract.
3. You must submit the complaint within the period stated above.
4. You must include, in your complaint, all of the information required by the Procurement Regulations (as described in Annex III).

6. Standstill Period

DEADLINE: The Standstill Period is due to end at midnight on [*insert date*] (local time).

The Standstill Period lasts ten (10) Business Days after the date of transmission of this Notification of Intention to Award.

The Standstill Period may be extended as stated in Section 4 above.

If you have any questions regarding this Notification please do not hesitate to contact us.

On behalf of the Purchaser:

Signature: _____

Name: _____

Title/position: _____

Telephone: _____

Email: _____

Beneficial Ownership Disclosure Form

INSTRUCTIONS TO BIDDERS: DELETE THIS BOX ONCE YOU HAVE COMPLETED THE FORM

This Beneficial Ownership Disclosure Form ("Form") is to be completed by the successful Bidder. In case of joint venture, the Bidder must submit a separate Form for each member. The beneficial ownership information to be submitted in this Form shall be current as of the date of its submission.

For the purposes of this Form, a Beneficial Owner of a Bidder is any natural person who ultimately owns or controls the Bidder by meeting one or more of the following conditions:

- *directly or indirectly holding 25% or more of the shares*
- *directly or indirectly holding 25% or more of the voting rights*
- *directly or indirectly having the right to appoint a majority of the board of directors or equivalent governing body of the Bidder*

RFB No.: *[insert number of RFB process]*

Request for Bid No.: *[insert identification]*

To: *[insert complete name of Purchaser]*

In response to your request in the Letter of Acceptance dated *[insert date of letter of Acceptance]* to furnish additional information on beneficial ownership: *[select one option as applicable and delete the options that are not applicable]*

(i) we hereby provide the following beneficial ownership information.

Details of beneficial ownership

Identity of Beneficial Owner	Directly or indirectly holding 25% or more of the shares (Yes / No)	Directly or indirectly holding 25 % or more of the Voting Rights (Yes / No)	Directly or indirectly having the right to appoint a majority of the board of the directors or an equivalent governing body of the Bidder (Yes / No)
<i>[include full name (last, middle, first), nationality, country of residence]</i>			

OR

(ii) *We declare that there is no Beneficial Owner meeting one or more of the following conditions:*

- directly or indirectly holding 25% or more of the shares
- directly or indirectly holding 25% or more of the voting rights
- directly or indirectly having the right to appoint a majority of the board of directors or equivalent governing body of the Bidder

OR

(iii) *We declare that we are unable to identify any Beneficial Owner meeting one or more of the following conditions. [If this option is selected, the Bidder shall provide explanation on why it is unable to identify any Beneficial Owner]*

- directly or indirectly holding 25% or more of the shares
- directly or indirectly holding 25% or more of the voting rights
- directly or indirectly having the right to appoint a majority of the board of directors or equivalent governing body of the Bidder]

Name of the Bidder: **[insert complete name of the Bidder]*_____

Name of the person duly authorized to sign the Bid on behalf of the Bidder: ***[insert complete name of person duly authorized to sign the Bid]*_____

Title of the person signing the Bid: *[insert complete title of the person signing the Bid]*_____

Signature of the person named above: *[insert signature of person whose name and capacity are shown above]*_____

Date signed *[insert date of signing]* **day of** *[insert month]*, *[insert year]*_____

* In the case of the Bid submitted by a Joint Venture specify the name of the Joint Venture as Bidder. In the event that the Bidder is a joint venture, each reference to "Bidder" in the Beneficial Ownership Disclosure Form (including this Introduction thereto) shall be read to refer to the joint venture member.

** Person signing the Bid shall have the power of attorney given by the Bidder. The power of attorney shall be attached with the Bid Schedules.

Letter of Acceptance

[letterhead paper of the Purchaser]

[date]

To: *[name and address of the Supplier]*

Subject: ***Notification of award Contract No.***

This is to notify you that your Bid dated *[insert date]* for execution of the
[insert name of the contract and identification number, as given in the SCC] for
the Accepted Contract Amount of ***[insert amount in numbers and words and name
of currency]***, as corrected and modified in accordance with the Instructions to Bidders is
hereby accepted by our Agency.

You are requested to furnish (i) the Performance Security within 28 days in accordance with
the Conditions of Contract, using for that purpose one of the Performance Security Forms
and (ii) the additional information on beneficial ownership in accordance with ITB 48.1
within eight (8) Business days using the Beneficial Ownership Disclosure Form, included in
Section X, - Contract Forms, of the Bidding Document.

Authorized Signature: _____

Name and Title of Signatory: _____

Name of Agency: _____

Attachment: Contract Agreement

Contract Agreement

[The successful Bidder shall fill in this form in accordance with the instructions indicated]

THIS AGREEMENT made the *[insert: **number**]* day of *[insert: **month**]*, *[insert: **year**]*.

BETWEEN

- (1) *[insert complete name of Purchaser]*, a *[insert description of type of legal entity, for example, an agency of the Ministry of of the Government of { insert name of Country of Purchaser }, or corporation incorporated under the laws of { insert name of Country of Purchaser }]* and having its principal place of business at *[insert address of Purchaser]* (hereinafter called “the Purchaser”), of the one part, and
- (2) *[insert name of Supplier]*, a corporation incorporated under the laws of *[insert: country of Supplier]* and having its principal place of business at *[insert: address of Supplier]* (hereinafter called “the Supplier”), of the other part:

WHEREAS the Purchaser invited Bids for certain Goods and ancillary services, viz., *[insert brief description of Goods and Services]* and has accepted a Bid by the Supplier for the supply of those Goods and Services

The Purchaser and the Supplier agree as follows:

1. In this Agreement words and expressions shall have the same meanings as are respectively assigned to them in the Contract documents referred to.
2. The following documents shall be deemed to form and be read and construed as part of this Agreement. This Agreement shall prevail over all other contract documents.
 - (a) the Letter of Acceptance
 - (b) Letter of Bid - Technical Part
 - (c) Letter of Bid - Financial Part
 - (d) the Addenda Nos. _____ (if any)
 - (e) Special Conditions of Contract
 - (f) General Conditions of Contract
 - (g) the Specification (including Schedule of Requirements and Technical Specifications)
 - (h) the completed Schedules (including Price Schedules)
 - (i) any other document listed in GCC as forming part of the Contract

3. In consideration of the payments to be made by the Purchaser to the Supplier as specified in this Agreement, the Supplier hereby covenants with the Purchaser to provide the Goods and Services and to remedy defects therein in conformity in all respects with the provisions of the Contract.
4. The Purchaser hereby covenants to pay the Supplier in consideration of the provision of the Goods and Services and the remedying of defects therein, the Contract Price or such other sum as may become payable under the provisions of the Contract at the times and in the manner prescribed by the Contract.

IN WITNESS whereof the parties hereto have caused this Agreement to be executed in accordance with the laws of *[insert the name of the Contract governing law country]* on the day, month and year indicated above.

For and on behalf of the Purchaser:

Signed: *[insert signature]*

in the capacity of *[insert title or other appropriate designation]*

in the presence of *[insert identification of official witness]*

For and on behalf of the Supplier:

Signed: *[insert signature of authorized representative(s) of the Supplier]*

in the capacity of *[insert title or other appropriate designation]*

in the presence of *[insert identification of official witness]*

Performance Security

Option 1: (Bank Guarantee)

[The bank, as requested by the successful Bidder, shall fill in this form in accordance with the instructions indicated]

[Guarantor letterhead or SWIFT identifier code]

Beneficiary: *[insert name and Address of Purchaser]*

Date: *[Insert date of issue]*

PERFORMANCE GUARANTEE No.: *[Insert guarantee reference number]*

Guarantor: *[Insert name and address of place of issue, unless indicated in the letterhead]*

We have been informed that _ *[insert name of Supplier, which in the case of a joint venture shall be the name of the joint venture]* (hereinafter called "the Applicant") has entered into Contract No. *[insert reference number of the contract]* dated *[insert date]* with the Beneficiary, for the supply of _ *[insert name of contract and brief description of Goods and related Services]* (hereinafter called "the Contract").

Furthermore, we understand that, according to the conditions of the Contract, a performance guarantee is required.

At the request of the Applicant, we as Guarantor, hereby irrevocably undertake to pay the Beneficiary any sum or sums not exceeding in total an amount of *[insert amount in figures]* (_____) *[insert amount in words]*,¹ such sum being payable in the types and proportions of currencies in which the Contract Price is payable, upon receipt by us of the Beneficiary's complying demand supported by the Beneficiary's statement, whether in the demand itself or in a separate signed document accompanying or identifying the demand, stating that the Applicant is in breach of its obligation(s) under the Contract, without the Beneficiary needing to prove or to show grounds for your demand or the sum specified therein.

This guarantee shall expire, no later than the Day of, 2...², and any demand for payment under it must be received by us at this office indicated above on or before that date.

¹ The Guarantor shall insert an amount representing the percentage of the Accepted Contract Amount specified in the Letter of Acceptance, and denominated either in the currency (ies) of the Contract or a freely convertible currency acceptable to the Beneficiary.

² Insert the date twenty-eight days after the expected completion date as described in GC Clause 18.4. The Purchaser should note that in the event of an extension of this date for completion of the Contract, the Purchaser would need to request an extension of this guarantee from the Guarantor. Such request must be in writing and must be made prior to the expiration date established in the guarantee. In preparing this

This guarantee is subject to the Uniform Rules for Demand Guarantees (URDG) 2010 Revision, ICC Publication No. 758, except that the supporting statement under Article 15(a) is hereby excluded.

[signature(s)]

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guarantee, the Purchaser might consider adding the following text to the form, at the end of the penultimate paragraph: "The Guarantor agrees to a one-time extension of this guarantee for a period not to exceed [six months] [one year], in response to the Beneficiary's written request for such extension, such request to be presented to the Guarantor before the expiry of the guarantee."

Option 2: Performance Bond – Not Applicable

By this Bond *[insert name of Principal]* as Principal (hereinafter called “the Supplier”) and *[insert name of Surety]* as Surety (hereinafter called “the Surety”), are held and firmly bound unto *[insert name of Purchaser]* as Obligee (hereinafter called “the Supplier”) in the amount of *[insert amount in words and figures]*, for the payment of which sum well and truly to be made in the types and proportions of currencies in which the Contract Price is payable, the Supplier and the Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS the Supplier has entered into a written Agreement with the Purchaser dated the _____ day of _____, 20 __, for *[name of contract and brief description of Goods and related Services]* in accordance with the documents, plans, specifications, and amendments thereto, which to the extent herein provided for, are by reference made part hereof and are hereinafter referred to as the Contract.

NOW, THEREFORE, the Condition of this Obligation is such that, if the Supplier shall promptly and faithfully perform the said Contract (including any amendments thereto), then this obligation shall be null and void; otherwise, it shall remain in full force and effect. Whenever the Supplier shall be, and declared by the Purchaser to be, in default under the Contract, the Purchaser having performed the Purchaser’s obligations thereunder, the Surety may promptly remedy the default, or shall promptly:

- (1) complete the Contract in accordance with its terms and conditions; or
- (2) obtain a Bid or Bids from qualified Bidders for submission to the Purchaser for completing the Contract in accordance with its terms and conditions, and upon determination by the Purchaser and the Surety of the lowest responsive Bidder, arrange for a Contract between such Bidder and Purchaser and make available as work progresses (even though there should be a default or a succession of defaults under the Contract or Contracts of completion arranged under this paragraph) sufficient funds to pay the cost of completion less the Balance of the Contract Price; but not exceeding, including other costs and damages for which the Surety may be liable hereunder, the amount set forth in the first paragraph hereof. The term “Balance of the Contract Price,” as used in this paragraph, shall mean the total amount payable by Purchaser to Supplier under the Contract, less the amount properly paid by Purchaser to the Supplier; or
- (3) pay the Purchaser the amount required by Purchaser to complete the Contract in accordance with its terms and conditions up to a total not exceeding the amount of this Bond.

The Surety shall not be liable for a greater sum than the specified penalty of this Bond.

Any suit under this Bond must be instituted not later than twenty-eight (28) days following the date of completion of the Supplier's performance of its obligations under the Contract, including any warranty obligations.

No right of action shall accrue on this Bond to or for the use of any person or corporation other than the Purchaser named herein or the heirs, executors, administrators, successors, and assigns of the Purchaser.

In testimony whereof, the Supplier has hereunto set his hand and affixed his seal, and the Surety has caused these presents to be sealed with his corporate seal duly attested by the signature of his legal representative, this _____ day of _____ 20_____
_____.

SIGNED ON _____ on behalf of _____

By _____ in the capacity of _____

In the presence of _____

SIGNED ON _____ on behalf of _____

By _____ in the capacity of _____

In the presence of _____

Advance Payment Security

Demand Guarantee

[Guarantor letterhead or SWIFT identifier code]

Beneficiary: *[Insert name and Address of Purchaser]*

Date: *[Insert date of issue]*

ADVANCE PAYMENT GUARANTEE No.: *[Insert guarantee reference number]*

Guarantor: *[Insert name and address of place of issue, unless indicated in the letterhead]*

We have been informed that *[insert name of Supplier, which in the case of a joint venture shall be the name of the joint venture]* (hereinafter called "the Applicant") has entered into Contract No. *[insert reference number of the contract]* dated *[insert date]* with the Beneficiary, for the execution of *[insert name of contract and brief description of Goods and related Services]* (hereinafter called "the Contract").

Furthermore, we understand that, according to the conditions of the Contract, an advance payment in the sum *[insert amount in figures]* () *[insert amount in words]* is to be made against an advance payment guarantee.

At the request of the Applicant, we as Guarantor, hereby irrevocably undertake to pay the Beneficiary any sum or sums not exceeding in total an amount of *[insert amount in figures]* (____) *[insert amount in words]*¹ upon receipt by us of the Beneficiary's complying demand supported by the Beneficiary's statement, whether in the demand itself or in a separate signed document accompanying or identifying the demand, stating either that the Applicant:

- (a) has used the advance payment for purposes other than toward delivery of Goods;
or
- (b) has failed to repay the advance payment in accordance with the Contract conditions, specifying the amount which the Applicant has failed to repay.

¹ *The Guarantor shall insert an amount representing the amount of the advance payment and denominated either in the currency(ies) of the advance payment as specified in the Contract, or in a freely convertible currency acceptable to the Purchaser.*

A demand under this guarantee may be presented as from the presentation to the Guarantor of a certificate from the Beneficiary's bank stating that the advance payment referred to above has been credited to the Applicant on its account number *[insert number]* at *[insert name and address of Applicant's bank]*.

The maximum amount of this guarantee shall be progressively reduced by the amount of the advance payment repaid by the Applicant as specified in copies of interim statements or payment certificates which shall be presented to us. This guarantee shall expire, at the latest, upon our receipt of a copy of the interim payment certificate indicating that ninety (90) percent of the Accepted Contract Amount, has been certified for payment, or on the *[insert day]* day of *[insert month]*, 2 *[insert year]*, whichever is earlier. Consequently, any demand for payment under this guarantee must be received by us at this office on or before that date.

This guarantee is subject to the Uniform Rules for Demand Guarantees (URDG) 2010 Revision, ICC Publication No.758, except that the supporting statement under Article 15(a) is hereby excluded.

[signature(s)]

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