



Government of the Independent State of Samoa

**Ministry of Natural Resources & Environment
(MNRE)**

SAMOA PACIFIC RESILIENCE PROJECT

Grant No: D077-WS

**ICT GOODS AND SERVICES FOR THE
NATIONAL EMERGENCY OPERATIONS
CENTER AND MULTI-HAZARD EARLY
WARNING SYSTEM**

International Competitive Bidding (ICB) – Bidding Document

ICB No: _PREPSamoaGoods13

JUNE 2021



Government of Samoa

FleRef:

MINISTRY OF NATURAL RESOURCES AND ENVIRONMENT

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Faamolemole faatuatusi
uma mai fesootaiga mai le
Ofisa Sili.

PACIFIC RESILIENCE PROGRAM (PREP)

PROJECT ID NO: P154839

ICT GOODS AND SERVICES FOR NATIONAL EMERGENCY OPERATIONS CENTER AND MULTI-HAZARD EARLY WARNING SYSTEM

Reference No.: WS-MNRE-DMO-217410-GO-RFB

World Bank GRANT D077-WS

Invitation for Bids: Goods

The Government of the Independent State of Samoa has received financing from the World Bank toward the cost of the Pacific Resilience Program, and intends to apply part of the proceeds toward payments under the contract for ICT Goods and Services for the National Emergency Operation Center (NEOC) and Multi-Hazard Early Warning System (MHEWS)

The Government of the Independent State of Samoa acting through and by the Ministry of Natural Resources and Environment (MNRE) now invites sealed Bids from eligible bidders for Supply, Delivery, Installation, Integration and Commissioning of the MHEWS Data Center ICT Infrastructure, Virtual Server Infrastructure, LAN/WAN Network, Performance Workstations and Peripherals, and Operational Support Services.

Bidding will be conducted through International Competitive Bidding Procedures as specified in the World Bank's *Guidelines: Procurement of Goods, Works and Non-Consulting Services under IBRD Loans and IDA Credits & Grants by World Bank Borrowers, January 2011, Revised July 2014* ("Procurement Guidelines"), and is open to all eligible Bidders as defined in the Procurement Guidelines. In addition, please refer to paragraphs 1.6 and 1.7 setting forth the World Bank's policy on conflict of interest.

Interested eligible Bidders may obtain further information from:

Name: Mr Lepale Aussie Simanu

Address: Disaster Management Office

National Emergency Operation Center

Tuana'imato, Samoa

Email: aussie.simanu@mnre.gov.ws (copy lina.esera@mnre.gov.ws)

Telephone: (+685) 67200 or 32759

and may inspect the bidding documents during office hours 0900 to 1700 hours (local time) at the address given above.

A complete set of bidding documents in the English language will be issued (electronically) upon the submission of a written application (in hardcopy or through email) to the same address indicated above. Prospective bidders who do not have a physical presence in Samoa (whether as a single entity or in the form of a JV) are encouraged to consider partnering with a local in-country company to ensure the successful implementation of the contract given current and potentially future restrictions on the movement of people to Samoa resulting from the COVID 19 global pandemic.

The deadline for submission of bids is 11.00am local Samoan time on 19 July 2021. **All bids must be addressed to the Chairperson of the Samoa National Tender Board (Attention: Secretary, Samoa National Tender Board) MUST be submitted via the Government of Samoa E-Tendering Portal (https://portal.tenderlink.com/mof_samoa/)**

Late bids will be rejected. Bids will be publicly opened in the presence of the bidders' designated representatives and anyone who chooses to attend at the above address.

All Bids must be accompanied by a Bid Securing Declaration using the form provided in Section IV of the bidding document.

A virtual pre-bid meeting will be held on 30 June, 2021 in which all interested bidders are invited to attend.

Yours sincerely,

(Frances Reupena)

CHIEF EXECUTIVE OFFICER

Summary Description

Summary

PART 1 – BIDDING PROCEDURES

Section I. Instructions to Bidders (ITB)

This Section provides information to help Bidders prepare their bids. Information is also provided on the submission, opening, and evaluation of bids and on the award of Contracts. **Section I contains provisions that are to be used without modification.**

Section II. Bid Data Sheet (BDS)

This Section includes provisions that are specific to each procurement and that supplement Section I, Instructions to Bidders.

Section III. Evaluation and Qualification Criteria

This Section specifies the criteria to determine the lowest evaluated bid and the qualifications of the Bidder to perform the contract.

Section IV. Bidding Forms

This Section includes the forms for the Bid Submission, Price Schedules, Bid Security, and the Manufacturer's Authorization to be submitted completed by the Bidder and submitted as part of his Bid.

Section V. Eligible Countries

This Section contains information regarding eligible countries.

Section VI. Bank Policy – Corrupt and Fraudulent Practices

This Section provides the Bidders with the reference to the Bank's policy in regard to corrupt and fraudulent practices applicable to this process.

PART 2 – SUPPLY REQUIREMENTS

Section VII. Schedule of Requirements

This Section includes the List of Goods and Related Services, the Delivery and Completion Schedules, the Technical Specifications and the Drawings that describe the Goods and Related Services to be procured.

PART 3 – CONDITIONS OF CONTRACT AND CONTRACT FORMS

Section VIII. General Conditions of Contract (GCC)

This Section includes the general clauses to be applied in all contracts. **The text of the clauses in this Section shall not be modified.**

Section IX. Special Conditions of Contract (SCC)

This Section consists of Contract Data and Specific Provisions which contains clauses specific to each contract. The contents of this Section modify or supplement, but not over-write, the General Conditions and shall be prepared by the Purchaser.

Section X. Contract Forms

This Section contains forms which, once completed, will form part of the Contract. The forms for **Performance Security** and **Advance Payment Security**, when required, shall only be completed by the successful Bidder after contract award.

Attachment: Invitation for Bids



Government of the Independent State of Samoa

**Ministry of Natural Resources & Environment
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**ICT GOODS AND SERVICES FOR THE
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ICB No: PREPSamoaGoods13

March 2021

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 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, telex) with proof of receipt;
 - (b) if the context so requires, “singular” means “plural” and vice versa; and
 - (c) “Day” means calendar day.
- 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 (or other financial account) account for the purpose of any payment to persons or entities, or for any import of goods, if such payment or import, to the knowledge of the Bank, is prohibited by 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 its policy in regard to corrupt and fraudulent practices, as set forth in Section VI.
- 3.2 In further pursuance of this policy, Bidders shall permit and shall cause its agents (where declared or not), subcontractors, sub-consultants, service providers or suppliers, and to permit the Bank to inspect all accounts, records and other documents relating to the submission of the application, bid submission (in case prequalified), 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 government-owned entity - subject to ITB 4.5, 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 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) participates in more than one bid in this bidding process. Participation by a Bidder in more than one Bid will result in the disqualification of all Bids in which such Bidder is involved. However, this does not limit

the inclusion of the same subcontractor in more than one bid; or

- (f) 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
- (g) or any of its affiliates has been hired (or is proposed to be hired) by the Purchaser or Borrower for the Contract implementation; or
- (h) 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 ITB 2.1 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
- (i) 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 procurement process and execution of the Contract.

4.3 A Bidder may have the nationality of any country, subject to the restrictions pursuant to ITB 4.7. 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.

4.4 A Bidder that has been sanctioned by the Bank, in accordance with the above ITB 3.1, including in accordance with the Bank's Guidelines on Preventing and Combating Corruption in Projects finance by IBRD Loans and IDA Credits and Grants ("Anti-Corruption Guidelines"), shall be ineligible to be prequalified for, initially selected for, bid 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.

- 4.5 Bidders that are Government-owned enterprises or institutions in the Purchaser's Country may participate only if they can establish that they (i) are legally and financially autonomous (ii) operate under commercial law, and (iii) are not dependent agencies of the Purchaser. To be eligible, a government-owned enterprise or institution shall establish to the Bank's satisfaction, through all relevant documents, including its Charter and other information the Bank may request, that it: (i) is a legal entity separate from the government (ii) does not currently receive substantial subsidies or budget support; (iii) operates like any commercial enterprise, and, inter alia, is not obliged to pass on its surplus to the government, can acquire rights and liabilities, borrow funds and be liable for repayment of its debts, and can be declared bankrupt; and (iv) is not bidding for a contract to be awarded by the department or agency of the government which under their applicable laws or regulations is the reporting or supervisory authority of the enterprise or has the ability to exercise influence or control over the enterprise or institution
- 4.6 A Bidder shall not be under suspension from Bidding by the Purchaser as the result of the operation of a Bid-Securing Declaration.
- 4.7 Firms and individuals may be ineligible if so indicated in Section V 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.
- 4.8 A Bidder shall provide such evidence of eligibility satisfactory to the Purchaser, as the Purchaser shall reasonably request.

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 Clause, 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 Bidding Document

6. Sections of Bidding Document

- 6.1 The bidding document consists 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 – Bank Policy -Corrupt and Fraudulent Practices

PART 2 Supply Requirements

- Section VII - Schedule of Requirements

PART 3 Contract

- Section VIII - General Conditions of Contract (GCC)
- Section IX - Special Conditions of Contract (SCC)
- Section X - Contract Forms

- 6.2 The Invitation for Bids , issued by the Purchaser is not part of the 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 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 the
Bid**

11.1 The Bid shall comprise the following:

- (a) **Letter of Bid** prepared in accordance with ITB 12;
- (b) **completed schedules** in accordance with ITB 12 and ITB 14;
- (c) **Bid Security** or **Bid-Securing Declaration**, in accordance with ITB 19.1;
- (d) **Alternative Bid**: if permissible, in accordance with ITB 13;
- (e) **written confirmation** authorizing the signatory of the Bid to commit the Bidder, in accordance with ITB 20.2;
- (f) **documentary evidence** in accordance with ITB 17 establishing the Bidder's qualifications to perform the Contract if its Bid is accepted;
- (g) **documentary evidence** in accordance with ITB 17 establishing the Bidder's eligibility to bid;
- (h) **documentary evidence** in accordance with ITB 16, that the Goods and Related Services to be supplied by the Bidder are of eligible origin;
- (i) **documentary evidence** in accordance with ITB 16 and 30, that the Goods and Related Services conform to the bidding document; and
- (j) any other document required **in the BDS**.

11.2 In addition to the requirements under ITB 11.1, 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.

- 11.3 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. Letter of Bid and Price Schedules

- 12.1. The Letter of Bid and Price Schedules shall be prepared 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 20.2. 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 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 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, 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 29. 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. Discounts shall be submitted in accordance with ITB 14.4 provided the Bids for all lots (contracts) are opened at the same time.

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 as specified **in the BDS**. 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

- 16.1 To establish the eligibility of the Goods and Related Services in accordance with ITB 5, Bidders shall complete the

**Eligibility and
Conformity of the
Goods and
Related Services**

- 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, 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 for the period **specified in the BDS** after the bid submission deadline date prescribed by the Purchaser in accordance with ITB 22.1. A bid valid for a shorter period 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 Clause 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 period, 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 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 the unconditional guarantee is issued by a financial institution located outside the Purchaser's Country, the issuing 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 validity period of the bid, or beyond any period of extension 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 42.

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 or the Bid Securing Declaration executed:

- (a) if a Bidder withdraws its Bid during the period of Bid validity specified by the Bidder on the Letter of Bid or any extension thereto provided by the Bidder; or
- (b) if the successful Bidder fails to:
 - (i) sign the Contract in accordance with ITB 41; or
 - (ii) furnish a Performance Security in accordance with ITB 42.

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 11.2.

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
- (b) if the successful Bidder fails to: sign the Contract in accordance with ITB 41; or furnish a performance security in accordance with ITB 42;

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 one original of the documents comprising the Bid as described in ITB 11 and clearly mark it "ORIGINAL." Alternative Bids, if permitted in accordance with ITB 13, shall be clearly marked "ALTERNATIVE." In addition, the Bidder shall submit copies of the Bid, in the number **specified in the BDS** and clearly mark them "COPY." In the event of any discrepancy between the original and the copies, the original shall prevail.

20.2 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.

- 20.3 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.
- 20.4 Any inter-lineation, erasures, or overwriting shall be valid only if they are signed or initialed by the person signing the Bid.

D. Submission and Opening of Bids

21. Sealing and Marking of Bids

- 21.1. The Bidder shall enclose the original and all copies of the bid, including alternative bids, if permitted in accordance with ITB 13, in separate sealed envelopes, duly marking the envelopes as “ORIGINAL”, “ALTERNATIVE” and “COPY.” These envelopes containing the original and the copies shall then be enclosed in one single envelope.
- 21.2. The inner and outer envelopes, shall:
- (a) bear the name and address of the Bidder;
 - (b) be addressed to the Purchaser in accordance with ITB 24.1;
 - (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.
- 21.3 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 20.2, (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 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 or any extension thereof.

25. Bid Opening

25.1. Except as in the cases specified in ITB 23 and ITB 24, the Purchaser shall publicly open and read out in accordance with ITB 25.3 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, 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. 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. 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.

- 25.3. All other envelopes shall be opened one at a time, reading out: the name of the Bidder and whether there is a modification; the total Bid Prices, per lot (contract) if applicable, including any discounts and alternative Bids; the presence or absence of a Bid Security, if required; and any other details as the Purchaser may consider appropriate. Only discounts and alternative Bids and discounts read out at Bid opening shall be considered for evaluation. The Letter of Bid and the Price Schedules are to be initialed by representatives of the Purchaser attending Bid opening in the manner specified **in the BDS**. The Purchaser shall neither discuss the merits of any Bid nor reject any Bid (except for late Bids, in accordance with ITB 25.1).
- 25.4. The Purchaser shall prepare a record of the Bid opening that shall include, as a minimum: the name of the Bidder and whether there is a withdrawal, substitution, or modification; the Bid Price, per lot (contract) if applicable, including any discounts; and alternative Bids; and the presence or absence of a Bid Security or Bid-Securing Declaration, if one was required. 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.

E. Evaluation and Comparison of Bids

- 26. Confidentiality** 26.1 Information relating to the evaluation of Bids and recommendation of contract award, shall not be disclosed to Bidders or any other persons not officially concerned with the Bidding process until the information on Contract Award is communication to all Bidders in accordance with ITB 40.

- 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 31.
- 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
 - (c) "Omission" is the failure to submit part or all of the information or documentation required in the bidding document.
- 29. Determination of Responsiveness**
- 29.1 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.
- 29.2 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.
- 29.3 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.
- 29.4 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.
- 30. Nonconformities, Errors and Omissions**
 - 30.1 Provided that a Bid is substantially responsive, the Purchaser may waive any nonconformities in the Bid.
 - 30.2 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.
 - 30.3 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.
- 31. Correction of Arithmetical Errors**
 - 31.1 Provided that the Bid is substantially responsive, the Purchaser shall correct arithmetical 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.

31.2 Bidders shall be requested to accept correction of arithmetical errors. Failure to accept the correction in accordance with ITB 31.1, shall result in the rejection of the Bid.

32. Conversion to Single Currency

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

33. Margin of Preference

33.1 Unless otherwise specified **in the BDS**, a margin of preference shall not apply.

34. Evaluation of Bids

34.1 The Purchaser shall use the criteria and methodologies listed in this Clause. No other evaluation criteria or methodologies shall be permitted.

34.2 To evaluate a 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 31.1;
- (c) price adjustment due to discounts offered in accordance with ITB 14.3;
- (d) converting the amount resulting from applying (a) to (c) above, if relevant, to a single currency in accordance with ITB 32;
- (e) price adjustment due to quantifiable nonmaterial nonconformities in accordance with ITB 30.3; and
- (f) the additional evaluation factors are 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 these bidding documents allows Bidders to quote separate prices for different lots (contracts), the methodology to determine the lowest evaluated price of the lot (contract) combinations, including any discounts offered in the Letter of Bid, is specified in Section III, Evaluation and Qualification Criteria.
- 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. Comparison of Bids

- 35.1 The Purchaser shall compare the evaluated prices of all substantially responsive Bids established in accordance with ITB 34.2 to determine the Bid that has the lowest evaluated bid. 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

36. Qualification of the Bidder

- 36.1 The Purchaser shall determine to its satisfaction whether the Bidder that is selected as having submitted the lowest evaluated and substantially responsive bid meets the qualifying criteria specified in Section III, Evaluation and Qualification Criteria.
- 36.2 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
- 36.3 An affirmative determination shall be a prerequisite for award of the Contract to the Bidder. A negative determination shall result in disqualification of the bid, in which event the Purchaser shall proceed to the next lowest evaluated bid to make a similar determination of that Bidder's qualifications to perform satisfactorily.

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

- 37.1 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.

F. Award of Contract

38. Award Criteria

- 38.1 Subject to ITB 37.1, the Purchaser shall award the Contract to the Bidder whose bid has been determined to be the lowest evaluated bid and is substantially responsive to the Bidding Documents, provided further that the Bidder is determined to be qualified to perform the Contract satisfactorily.

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

- 39.1 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.

40. Notification of Award

40.1 Prior to the expiration of the period of bid validity, the Purchaser shall notify the successful Bidder, in writing, that its Bid has been accepted. The notification letter (hereinafter and in the Conditions of Contract and Contract Forms called the “Letter of Acceptance”) shall specify the sum that the Purchaser will pay the Supplier in consideration of the supply of Goods (hereinafter and in the Conditions of Contract and Contract Forms called “the Contract Price”). At the same time, the Purchaser shall also notify all other Bidders of the results of the bidding and shall publish in *UNDB online* the results identifying the bid and lot (contract) numbers and the following information:

- (i) name of each Bidder who submitted a Bid;
- (ii) bid prices as read out at Bid Opening;
- (iii) name and evaluated prices of each Bid that was evaluated;
- (iv) name of bidders whose bids were rejected and the reasons for their rejection; and
- (v) name of the successful Bidder, and the Price it offered, as well as the duration and summary scope of the contract awarded.

40.2 Until a formal Contract is prepared and executed, the notification of award shall constitute a binding Contract.

40.3 The Purchaser shall promptly respond in writing to any unsuccessful Bidder who, after notification of award in accordance with ITB 40.1, requests in writing the grounds on which its bid was not selected.

41. Signing of Contract

41.1 Promptly after notification, the Purchaser shall send the successful Bidder the Contract Agreement.

41.2 Within twenty-eight (28) days of receipt of the Contract Agreement, the successful Bidder shall sign, date, and return it to the Purchaser.

41.3 Notwithstanding ITB 41.2 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 Contact 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.

42. Performance Security

- 42.1 Within twenty eight (28) days of the receipt of notification of award from the Purchaser, the successful Bidder, if required, shall furnish the Performance Security in accordance with the GCC, subject to ITB 34.5, 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.
- 42.2 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 next lowest evaluated Bidder, whose bid is substantially responsive and is determined by the Purchaser to be qualified to perform the Contract satisfactorily.

Section II - Bid Data Sheet (BDS)

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

| ITB Reference | A. General |
|---------------|--|
| ITB 1.1 | The reference number of the Request for Bids (RFB) is : <i>PREPSamoaGoods13</i> |
| ITB 1.1 | The Purchaser is: <i>Ministry of Natural Resources and Environment</i> |
| ITB 1.1 | <p>The name of the ICB is: ICT GOODS AND SERVICES FOR THE NATIONAL EMERGENCY OPERATION CENTER AND MULTI-HAZARD EARLY WARNING SYSTEM</p> <p>The identification number of the ICB is: PREPSamoaGoods13</p> <p>The number and identification of lots (contracts) comprising this ICB is: One (1)</p> <p>The Lot comprises Supply, Delivery, Installation, Integration and Commissioning of Data Center ICT Infrastructure, Virtual Server Infrastructure, LAN/WAN Network, Performance Workstations and Peripherals, and Operational Support Services.</p> |
| ITB 2.1 | The Borrower is: <i>Government of the Independent State of Samoa</i> |
| ITB 2.1 | Loan or Financing Agreement amount: <i>USD\$16.29m</i> |
| ITB 2.1 | The name of the Project is: <u>PACIFIC RESILIENCE PROJECT (PREP)</u> |

| | |
|-----------------|--|
| ITB 4.1 | <p>Maximum number of members in the Joint Venture (JV) shall be: <i>three (03)</i></p> <p>Bidders who do not have a presence in Samoa (whether as a single entity or in the form of a JV) are encouraged to sub-contract a local in-country company to facilitate local logistics and also provide related services under instruction from the Supplier, particularly in the event international travel is not possible during the contract implementation period. The local company would also provide first tier on-site support.</p> |
| ITB 4.4 | <p>A list of debarred firms and individuals is available on the Bank's external website: http://www.worldbank.org/debarr.</p> |
| | <p>B. Contents of Bidding Document</p> |
| ITB 7.1 | <p>For <u>Clarification of Bid purposes</u> only, the Purchaser's address is:</p> <p>To: The Chief Executive Officer</p> <p>Ministry of Natural Resources and Environment</p> <p>Street Address: Level 3, TATTE Building, Sogi</p> <p>City: Apia</p> <p>Country: Samoa</p> <p>Telephone: : +685 67200 / +685 32759</p> <p>Attention: The Acting Assistant Chief Executive Officer – Disaster Management Office (DMO) & copy PREP Procurement Officer</p> <p>Electronic mail address: aussie.simanu@mnre.gov.ws and copy: lina.esera@mnre.gov.ws</p> <p>Requests for clarification should be received by the Purchaser no later than: 14 days prior to the deadline for submission of bids.</p> |
| ITB 7.1 | <p>Web page: www.mnre.gov.ws and www.mof.gov.ws</p> |
| | <p>C. Preparation of Bids</p> |
| ITB 10.1 | <p>The language of the Bid is: <i>English</i></p> <p>All correspondence exchange shall be in English language.</p> |

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| ITB 11.1 (j) | <p>The Bidder shall submit the following additional documents in its bid:</p> <ul style="list-style-type: none"> (i) Preliminary Network and Virtual Infrastructure Design (ii) Each major component should be supported by product brochure (iii) Manufacturer's Warranty Certificates (iv) A brief methodology and a detailed work plan for the implementation of the Contract, to demonstrate that the bidder can design, supply, transport, install, commission and deliver training and support services on schedule. In addition, bidders should describe how potential travel restrictions due to the current COVID pandemic will be addressed, in particular for in-country services. (v) The bidder shall also furnish a list of the proposed Supplier's Technical Personnel including their CVs (qualification and experience), in line with personnel specified in the technical specifications. At least one of the personnel should have manufacturer certification and qualified with a minimum of two (2) years' experience in the installation, maintenance and support of the equipment being supplied. (vi) The bidder is to show evidence that there is or will be an established service center in Samoa that is certified as an authorized agent for manufacturer/s (OEM) equipment suppliers to provide warranty service, technical support or at a minimum coordination of claims with brand manufacturer's for the delivered equipment (if not already established, the bidder may choose to directly set up its own service center, in which case the bidder should enter the cost for setting up such facilities in the price schedule for Related Services. If the bidder intends to set up its own services center rather than go with an already established center, only then should the bidder include costs in their bid for setting up the center. If the bidder chooses an already established local center, then no costs are needed and they only need provide the name and business registration of the identified local center). (vii) Proposed arrangements for the provision of application software, firmware updates, device drivers and software patches and updates. (viii) <u>Code of Conduct for Supplier's Personnel (ES)</u>: The Bidder shall submit the Code of Conduct that will apply to the Supplier's Personnel employed for the execution of Installation and Operational Support Services at the Final Destination, to ensure compliance with the Supplier's Environmental and Social (ES) obligations under the Contract. The Bidder 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 Bidder may introduce additional requirements, including as necessary to take into account specific Contract issues/risks. |
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| ITB 13.1 | Alternative Bids <i>shall not be</i> 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 | <p>Prices quoted for each component shall correspond to 100 percent of the items specified for each component.</p> <p>Prices quoted for each item of a component shall correspond to 100 percent of the quantities specified for this item of a component.</p> <p>Costs for replacements and spares required during the operational support period to meet required service levels should be included in the price schedule for related services. The Bidder should provide a list of recommended spares for a five-year operational support period.</p> |
| ITB 14.7 | The Incoterms edition is: INCOTERMS 2020 . |
| ITB 14.8 (b)(i) | CIP Place of destination: Apia, Samoa |
| ITB 14.8 (a)(iii), (b)(ii) and (c)(v) | <p>Final Destination (Project Site): as specified in the delivery schedules in Section VII.</p> <p>The Supplier (successful bidder) will be required under the Contract to transport the Goods to the specified place of final destination/s within the Purchaser's Country, defined as the Project Site/s, including provision for insurance and storage.</p> <p>The bidder shall include such related costs in the Price Schedules.</p> <p>In the case of Goods to be imported, the Supplier (successful bidder) will be required to clear and offload the Goods at the port of destination, and pay for customs duties and related taxes. Such duties and taxes will be reimbursed by the Purchaser, at cost.</p> |
| ITB 15.1 | The Bidder <i>is</i> 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): 60 months |

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| ITB 17.2 (a) | Manufacturer's authorization is: <i>“required”, this is to include items listed in the goods schedule inclusive of: G1-1 MicroDC rack; Network appliances as per G2-3 to G2-10; NAS & IPSAN appliances as per G3-1 and G3-2; Rack Servers as per G4-1; Computer Workstations as per G5-1; and UPS systems as per G6-1 and G6-2.</i> |
| ITB 17.2 (b) | After sales service is: <i>“required”</i> |
| ITB 18.1 | The Bid shall be valid until: one hundred and twenty six (126) days from the bid submission deadline date. |
| ITB 18.3 (a) | The Bid price shall be adjusted by the following factor(s): 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 adjusted as follows: <i>The local currency portion of the Contract price shall be adjusted by a factor reflecting local inflation during the period of extension, and the foreign currency portion of the Contract price shall be adjusted by a factor reflecting the international inflation (in the country of the foreign currency) during the period of extension.</i> |
| ITB 19.1 | The Bidder shall furnish a <i>Bid Securing Declaration in the form included in Section 4 (Bidding Forms)</i> |
| ITB 19.3 (d) | Other types of acceptable securities: <i>None</i> |
| ITB 19.9 | If the Bidder incurs any of the actions prescribed in subparagraphs (a) or (b) of this provision, the Borrower will declare the Bidder ineligible to be awarded contracts by the Purchaser for a period of three (03) years starting from the deadline date for submission of bids. |
| ITB 20.1 | In addition to the original of the Bid, the number of copies is: <i>4 hardcopies plus 1 softcopy</i> |
| ITB 20.2 | The written confirmation of authorization to sign on behalf of the Bidder shall consist of: (a) Power of Attorney or Article of Association in the case of Company Directors; and (b) In the case of Bids submitted by an existing or intended JV an undertaking signed by all parties (i) stating that all parties shall be jointly and severally liable, and (ii) nominating a Representative who shall have the authority to conduct all business for and on behalf of any and all the parties of the JV during the bidding process and, in the event the JV is awarded the Contract, during contract execution. |

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| | D. Submission and Opening of Bids |
| ITB 22.1 | <p>For Bid submission purposes only, the Purchaser's address is:</p> <p>Attention: The Secretary, Tenders Board</p> <p>Street Address: Central Bank of Samoa Building</p> <p>Floor/Room number: Level 4</p> <p>City: Apia</p> <p>Country: Samoa</p> <p>The deadline for bid submission is:</p> <p>Date: 19 July 2021</p> <p>Time: 11:00am (Apia time)</p> <p>Bidders <i>shall NOT</i> have the option of submitting their Bids electronically.</p> |
| ITB 25.1 | <p>The Bid opening shall take place at:</p> <p>The Secretary, Tenders Board</p> <p>Street Address: Central Bank of Samoa Building</p> <p>Floor/Room number: Level 4</p> <p>City: Apia</p> <p>Country: Samoa</p> <p>Date: 19 July 2021</p> <p>Time: 11:15am</p> |
| ITB 25.3 | <p>The Letter of Bid and Price Schedules shall be initialed by the secretary and members of the Tenders Board conducting Bid opening. <i>Each 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></p> |
| | E. Evaluation and Comparison of Bids |
| ITB 29 | Specific additional criteria for evaluating technical responsiveness: |

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| | <p>i. Bidder's preliminary Network and Virtual Infrastructure Design, for determining suitability of bidder solution.</p> <p>ii. Bidder's methodology and work plan for the implementation of the Contract, to demonstrate that the bidder can design, supply, transport, install, commission and deliver training and support services on schedule; and to address potential travel restrictions due to the current COVID pandemic.</p> <p>iii. Bidder's proposed arrangements for the provision of application software, firmware updates, device drivers and software patches and updates.</p> <p>iv. Suitability and adequacy of proposed Technical Personnel</p> <p>v. Sub-contracting arrangements, if any, proposed.</p> <p>vi. Bidder's proposed training program.</p> |
| ITB 32.1 | <p>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: <i>Samoan Tala (SAT)</i></p> <p>The source of exchange rate shall be: <i>Central Bank of Samoa exchange rates</i></p> <p>The date for the exchange rate shall be: <i>28 days prior to the bid submission deadline date.</i></p> |
| ITB 33.1 | A margin of domestic preference <i>shall not</i> apply. |
| ITB 34.2(a) | <p>Evaluation will be done on a single responsibility basis, for <i>all Items of all components</i></p> <p><i>If a Price Schedule shows items listed but not priced, their prices shall be assumed to be included in the prices of other items. An item not listed in the Price Schedule shall be assumed to be not included in the Bid, and provided that the Bid is substantially responsive, the average or highest price (as specified in the BDS) of the item quoted by substantially responsive Bidders will be added to the Bid price and the equivalent total cost of the Bid so determined will be used for price comparison.</i></p> |
| ITB 34.6 | <p>The adjustments shall be determined using the following criteria, from amongst those set out in Section III, Evaluation and Qualification Criteria:</p> <p>(a) Deviation in Delivery schedule: <i>No</i></p> <p>(b) Deviation in payment schedule: <i>No</i></p> <p>(c) the cost of major replacement component, mandatory spare parts, and service: <i>Yes</i>. Costs for replacements and spares required during</p> |

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| | <p>the operational support period to meet required service levels should be included in the price schedule for related services.</p> <p>(d) the availability in the Purchaser's Country of spare parts and after-sales services for the equipment offered in the Bid: <i>Yes</i>. If such facilities are not currently available, and the bidder intends to set up its own local service center, the bidder should include the cost for setting up such facilities in the price schedule for Related Services.</p> <p>(e) the projected and maintenance costs during the life of the equipment: <i>No</i></p> <p>(f) the performance and productivity of the equipment offered; <i>No</i></p> |
| | F. Award of Contract |
| ITB 39.1 | <p>The maximum percentage by which quantities may be increased is: <i>15%</i></p> <p>The maximum percentage by which quantities may be decreased is: <i>15%</i></p> |

Section III - Evaluation and Qualification Criteria

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1. Margin of Preference (ITB 33) NOT APPLICABLE

2. Evaluation (ITB 34)

2.1. Evaluation Criteria (ITB 34.6)

The Purchaser's evaluation of a Bid may take into account, in addition to the Bid Price quoted in accordance with ITB 14.8, one or more of the following factors as specified in ITB 34.2(f) and in BDS referring to 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. Within this acceptable period, an adjustment, as specified in BDS 34.6, will be added, for evaluation purposes only, to the bid price of bids offering deliveries later than the "Earliest Delivery Date" specified in Section VII, Schedule of Requirements.

- (b) Deviation in payment schedule: **Not applicable**
- (c) Cost of major replacement components, mandatory spare parts, and service: Costs for replacements and spares required during the operational support period to meet required service levels should be included in the price schedule for related services.
- (d) Bidder's facilities (available or to be provided) during the (i) warranty and operational support period, and (ii) repair and replacement services period., in line with sub-section 3.1 (a) (ii) (c) below. If such facilities are not currently available, the bidder should include the cost for setting up such services in the price schedule for related services.
- (e) Projected operating and maintenance costs: **Not applicable**
- (f) Performance and productivity of the equipment: **Not applicable**

2.2. Multiple Contracts (ITB 34.4) NOT APPLICABLE

2.3. Alternative Bids (ITB 13.1) NOT APPLICABLE

3. Qualification (ITB 36)

3.1 Post-qualification Requirements (ITB 36.1)

After determining the lowest-evaluated bid in accordance with ITB 35.1 the Purchaser shall carry out the post-qualification of the Bidder in accordance with ITB 36, using only the

requirements specified. Requirements not included in the text below shall not be used in the evaluation of the Bidder's qualifications.

(a) If the Bidder is the manufacturer of the goods and equipment offered:

(i) Financial Capability

The Bidder shall furnish documentary evidence that it meets the following financial requirement(s):

(a) Average annual turnover should not be less than: US\$ 2,000,000 in last three years.

Note: In case of Joint Venture, which are jointly and severally responsible for contract execution, the amount with regards to Turn-over requirement may be combined and averaged for the recent three (3) years (2017, 2018, 2019) years, however one member of the JV must meet at least 50% of the requirement.

(b) A form of credit line from a commercial bank or a bank account statement to demonstrate that the Bidder has following amounts available for the respective contract if awarded to the Bidder: US\$ 1,000,000.

Note: In case of Joint Venture, which are jointly and severally responsible for contract execution, the amount with regards to credit line from a commercial bank or a bank-account statement, requirement may be combined and averaged.

(ii) Experience and Technical Capacity

The Bidder shall furnish documentary evidence to demonstrate that it meets the following experience requirement(s):

(a) The Bidder should be an established Information Technology Company/ IT System Integrator, with a valid company registration certificate, and have successfully completed at least two (2) contracts of similar nature and complexity including supply, installation, commissioning, training and maintenance in any year over the last five (5) years with the value of each contract not less than (50%) of the bid price, and which the equipment has been operating successfully in accordance to international standards. The Bidder shall also provide the name and contact information of the client sites.

(b) The Bidder should have commissioned and installed at least two (2) Data Centres, or two (2) connected enterprise scaled network and virtual infrastructure installations and integrated office system projects or similar project with similar complexity during the last five (5) years.

(c) The Bidder should show evidence that there is or will be an established service center in Samoa that is certified as an authorized agent for

manufacturer/s (OEM) equipment suppliers to provide warranty service, technical support or at a minimum coordination of claims with brand manufacturer's for the delivered equipment.

If not already established, the bidder should include the cost for setting up the facility in the price schedule for Related Services.

(iii) Documentary Evidence

The Bidder shall furnish documentary evidence to demonstrate that the Goods it offers meet the following usage requirement:

- (a) Documentary evidence demonstrating that the Bidder satisfies the minimum requirements for experience.
- (b) The Bidder shall confirm availability of spare parts and after sale services.

(b) If Bidder is not a manufacturer:

If a Bidder is not a manufacturer, but is offering the Goods on behalf of the Manufacturer under Manufacturer's Authorization Form (Section IV, Bidding Forms), the Manufacturer shall demonstrate the above qualifications (i), (ii), (iii) and the Bidder shall demonstrate that it has: (a) successfully completed at least two (2) contracts of (Supply, Delivery, Installation and Commissioning) in the past 5 years; and (b) an average annual turnover not less than: US\$ 2m equivalent in the last three years.

Section IV - Bidding Forms

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Letter of Bid

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

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

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

ICB No.: PREPSamoaGoods13

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

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

**To: Chief Executive Officer,
Ministry of Natural Resources & Environment
Level 3, TATTE Building
Sogi, Apia
SAMOA**

- (a) We have examined and have no reservations to the bidding document, including Addenda issued in accordance with Instructions to Bidders (ITB 8);
- (b) We meet the eligibility requirements and have no conflict of interest in accordance with ITB 4;
- (c) We have not been suspended nor declared ineligible by the Purchaser based on execution of a Bid-Securing Declaration in the Purchaser's Country in accordance with ITB 4.6;
- (d) 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: Supply, Delivery, Installation, Integration and Commissioning of the MHEWS Data Center ICT Infrastructure, Virtual Server Infrastructure, LAN/WAN Network, Performance Workstations and Peripherals and operational support services.;
- (e) The total price of our Bid, excluding any discounts offered in item (f) below is:

Total price is: *[insert the total price of the Bid in words and figures, indicating the various amounts and the respective currencies];*

- (f) 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];*

- (g) Our Bid shall be valid for a period of *126 days from the date fixed for the bid submission deadline in accordance with the bidding documents*, and it shall remain binding upon us and may be accepted at any time before the expiration of that period;
- (h) If our Bid is accepted, we commit to obtain a performance security in accordance with the bidding documents;
- (i) We are not participating, as a bidder or as a subcontractor, in more than one bid in this bidding process in accordance with ITB 4.2 (e) other than alternative Bids submitted in accordance with ITB 13;
- (j) 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 a member of 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;
- (k) [*We are not a government-owned entity*] / [*We are a government-owned entity but meet the requirements of ITB 4.5*];
- (l) 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 |
|-------------------|---------|--------|--------|
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(If none has been paid or is to be paid, indicate “none.”)

- (m) We understand that this Bid, together with your written acceptance thereof included in your notification of award, shall constitute a binding contract between us, until a formal contract is prepared and executed; and
- (n) We understand that you are not bound to accept the lowest evaluated Bid, or any other Bid that you may receive; and
- (o) We hereby certify that we have taken steps to ensure that no person acting for us or on our behalf will engage in any type of Fraud and Corruption.

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.

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]*

ICB No.: *PREPSamoaGoods13*

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> <input type="checkbox"/> 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 4.3. <input type="checkbox"/> In case of JV, letter of intent to form JV or JV agreement, in accordance with ITB 4.1. <input type="checkbox"/> In case of government-owned enterprise or institution, in accordance with ITB 4.5 documents establishing: <ul style="list-style-type: none"> • Legal and financial autonomy • Operation under commercial law • Establishing that the Bidder is not under the supervision of the Purchaser |
| 2. Included are the organizational chart, a list of Board of Directors, and the beneficial ownership. |

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]*

ICB No.: PREPSamoaGoods13

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

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| 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> <input type="checkbox"/> Articles of Incorporation (or equivalent documents of constitution or association), and/or registration documents of the legal entity named above, in accordance with ITB 4.3. <input type="checkbox"/> In case of a government-owned enterprise or institution, documents establishing legal and financial autonomy, operation in accordance with commercial law, and absence of dependent status, in accordance with ITB 4.5. 2. Included are the organizational chart, a list of Board of Directors, and the beneficial ownership. |

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: _____ ICB No: PREPSamoaGoods13 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 CIP [Apia, Samoa] in accordance with ITB 14.8(b)(i) | CIP 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 CIP per unit]</i> | <i>[insert total CIP 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: _____ ICB No: PREPSamoaGoods13 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 SAMOA | | | | | (Group A and B Bids) Currencies in accordance with ITB 15 | | | Date: _____ ICB No: PREPSamoaGoods13 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. 4x5) | 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 within 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 Schedule: Replacements and Spares During Operational Support Period (ITB 14.6)

| Purchaser's Country SAMOA | | | | Currencies in accordance with ITB 15 | | Date: _____ ICB No: PREPSamoaGoods13 Alternative No: _____ Page N° _____ of _____ | |
|---|------------------------------|--|----------------------------|--|---|--|--|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
| Line Item N° | Description of Goods | Quantity and physical unit | Unit price | Total price per line item (CIP/EXW) (Col. 3×4) | Price per line item for inland transportation and other services required in the Purchaser's Country to convey the Goods to their final destination | Total Price per line item (Col.5+ 6) | |
| <i>[insert number of the item]</i> | <i>[insert name of Good]</i> | <i>[insert number of units to be supplied and name of the physical unit]</i> | <i>[insert unit price]</i> | <i>[insert total EXW price per line item]</i> | <i>[insert the corresponding price per line item]</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: _____ ICB No: PREPSamoaGoods13 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) ¹ | 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> |
| | | | | | | |
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| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| Total Bid Price | | | | | | |

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

¹ Include cost for setting up in-country after-sales service facilities, if not already available, and the bidder intends to set up its own local service center.

TECHNICAL PROPOSAL FORMS

TP-1. PRELIMINARY NETWORK AND VIRTUAL INFRASTRUCTURE DESIGN

TP-2. METHODOLOGY AND WORK PLAN FOR IMPLEMENTATION OF THE CONTRACT

TP-3. SUPPLIER'S TECHNICAL PERSONNEL

TP-4. PLAN FOR ESTABLISHMENT OF SERVICE CENTER IN SAMOA

TP-5. ARRANGEMENTS FOR PROVISION OF APPLICATION SOFTWARE, FIRMWARE UPDATES, DEVICE DRIVERS AND SOFTWARE PATCHES AND UPDATES

TP-6. LIST OF RECOMMENDED 5-YEAR REPLACEMENTS AND SPARES FOR ALL MAJOR SYSTEM COMPONENTS

TP-7: OTHER RELATED TECHNICAL PROVISIONS

CODE OF CONDUCT FOR SUPPLIER'S PERSONNEL (ES) FORM

TP-1: PRELIMINARY NETWORK AND VIRTUAL INFRASTRUCTURE DESIGN

**TP-2: METHODOLOGY AND WORK PLAN FOR IMPLEMENTATION OF THE
CONTRACT**

**TP-3: SUPPLIER'S TECHNICAL PERSONNEL
(including CVs)**

TP-4: PLAN FOR ESTABLISHMENT OF SERVICE CENTER IN SAMOA
(if not already established)

(The Bidder should provide a detailed plan for the establishment of warranty (service centers) to allow support to be provided in the country of Samoa, for the equipment authorised by manufacturer, to provide warranty service and technical support for the delivered equipment)

**TP-5: ARRANGEMENTS FOR PROVISION OF APPLICATION SOFTWARE,
FIRMWARE UPDATES, DEVICE DRIVERS AND SOFTWARE PATCHES AND
UPDATES**

**TP-6: LIST OF RECOMMENDED 5-YEAR REPLACEMENTS AND SPARES FOR ALL
MAJOR SYSTEM COMPONENTS**

TP-7: OTHER RELATED TECHNICAL PROVISIONS

Code of Conduct for Supplier's Personnel (ES) Form

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.

CODE OF CONDUCT FOR SUPPLIER'S AND SUBCONTRACTOR'S PERSONNEL

We are the Supplier, *[enter name of Supplier]*. We intend to sign a contract with *[enter name of Employer]* for *[enter description of the Facilities]*. The ICT Goods will be installed at *[enter the Site]*. Our contract requires us to implement measures to address environmental and social risks, related to the Installation and Operational Support Services i.e. services ancillary to the supply of the Goods, such as inland transportation, site preparation works/ associated civil works, installation, testing, precommissioning, commissioning, operations and maintenance etc. as the case may require.

This Code of Conduct is part of our measures to deal with environmental and social risks related to the Installation and Operational Support Services.

All personnel that we utilize in the execution of the Contract, including staff, labor and other employees of us and of each Subcontractor, and any other personnel assisting us in the execution of the Contract, are referred to as Supplier's personnel.

This Code of Conduct identifies the behavior that we require from the Supplier's Personnel employed for the execution of Installation and Operational Support Services at the Site (or other places in the country where the Site is located).

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

Supplier's Personnel employed for the execution of Installation and Operational Support Services at the Site (or other places in the country where the Site is located) 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 Contractor's and Subcontractor'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. 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 Supplier's or Purchaser'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 Sexual Abuse, which means the actual or threatened physical intrusion of a sexual nature, whether by force or under unequal or coercive conditions;
9. not engage in any form of sexual activity with individuals under the age of 18, except in case of pre-existing marriage;
10. 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);
11. report violations of this Code of Conduct; and
12. not retaliate against any person who reports violations of this Code of Conduct, whether to us or the Employer, or who makes use of the grievance mechanism for Supplier'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 Supplier's Social Expert with relevant experience in handling sexual exploitation, sexual abuse and sexual harassment cases, or if such person is not required under the Contract, another individual designated by the Supplier to handle these matters*] in writing at this address [] or by telephone at [] or in person at []; or
2. Call [] to reach the Supplier'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 Supplier's Personnel may result in serious consequences, up to and including termination and possible referral to legal authorities.

FOR SUPPLIER'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 Supplier's contact person(s) with relevant experience*] requesting an explanation.

Name of Supplier's Personnel: [insert name]

Signature:

Date: (day month year): _____

Countersignature of authorized representative of the Supplier:

Signature: _____

Date: (day month year): _____

ATTACHMENT 1: Behaviors constituting SEA and behaviors constituting SH

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 Contractor'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 Contractor'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 Contractor's Personnel rapes, or otherwise sexually assaults a member of the community.
- A Contractor's Personnel denies a person access to the Site unless he/she performs a sexual favor.
- A Contractor'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 Contractor's Personnel comment on the appearance of another Installation Services Personnel (either positive or negative) and sexual desirability.
- When a Contractor's Personnel complains about comments made by another Contractor's Personnel on his/her appearance, the other Contractor's Personnel comment that he/she is "asking for it" because of how he/she dresses.
- Unwelcome touching of a Contractor's Personnel or Employer's Personnel by another Contractor's Personnel.
- A Contractor's Personnel tells another Contractor'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

Form of Bid-Securing Declaration

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

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

Bid No.: *PREPSamoaGoods13*

Alternative No.: *NIL*

To: *Ms. Frances Reupena*

Chief Executive Officer

Ministry of Natural Resources and Environment

Level 3, TATTE Building,

Sogi, Apia, Samoa

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 in any contract with the Purchaser for the period of time of *three years* starting on *19 July 2021* if we are in breach of our obligation(s) under the Bid conditions, because we:

- (a) have withdrawn our Bid during the period of Bid validity specified in the Letter of Bid; or
- (b) having been notified of the acceptance of our Bid by the Purchaser during the period of Bid validity, (i) fail or refuse to execute 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 expiration of our Bid.

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.]

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]*

ICB No.: *PREPSamoaGoods13*

Alternative No.: *NIL*

To: *Ms. Frances Reupena*
Chief Executive Officer
Ministry of Natural Resources and Environment
Level 3, TATTE Building,
Sogi, Apia, Samoa

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]*

Section V - Eligible Countries

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

In reference to ITB 4.7 and 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 4.7(a) and ITB 5.1: **None**

Under ITB 4.7(b) and ITB 5.1: **None**

Section VI. Bank Policy - Corrupt and Fraudulent Practices

Guidelines for Procurement of Goods, Works, and Non-Consulting Services under IBRD Loans and IDA Credits & Grants by World Bank Borrowers, dated January 2011.

“Fraud and Corruption:

1.16 It is the Bank’s policy to require that Borrowers (including beneficiaries of Bank loans), bidders, suppliers, contractors and their agents (whether declared or not), sub-contractors, sub-consultants, service providers or suppliers, and any personnel thereof, observe the highest standard of ethics during the procurement and execution of Bank-financed contracts.¹ In pursuance of this policy, 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;²
 - (ii) “fraudulent practice” is any act or omission, including a misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain a financial or other benefit or to avoid an obligation;³
 - (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;⁴
 - (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;⁵

¹ In this context, any action to influence the procurement process or contract execution for undue advantage is improper.

² For the purpose of this sub-paragraph, “another party” refers to a public official acting in relation to the procurement process or contract execution. In this context, “public official” includes World Bank staff and employees of other organizations taking or reviewing procurement decisions.

³ For the purpose of this sub-paragraph, “party” refers to a public official; the terms “benefit” and “obligation” relate to the procurement process or contract execution; and the “act or omission” is intended to influence the procurement process or contract execution.

⁴ For the purpose of this sub-paragraph, “parties” refers to participants in the procurement process (including public officials) attempting either themselves, or through another person or entity not participating in the procurement or selection process, to simulate competition or to establish bid prices at artificial, non-competitive levels, or are privy to each other’s bid prices or other conditions.

⁵ For the purpose of this sub-paragraph, “party” refers to a participant in the procurement process or contract execution.

- (v) "obstructive practice" is:
 - (aa) 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
 - (bb) acts intended to materially impede the exercise of the Bank's inspection and audit rights provided for under paragraph 1.16(e) below.
- (b) will reject a proposal for award if it determines that the bidder recommended for award, or 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) will declare misprocurement and cancel the portion of the loan allocated to a contract if it 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 or the implementation 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) will sanction a firm or individual, at any time, in accordance with the prevailing Bank's sanctions procedures,⁶ including by publicly declaring such firm or individual ineligible, either indefinitely or for a stated period of time: (i) to be awarded a Bank-financed contract; and (ii) to be a nominated⁷;
- (e) will require that a clause be included in bidding documents and in contracts financed by a Bank loan, requiring bidders, suppliers and contractors, and their sub-contractors, agents, personnel, consultants, service providers, or suppliers, to permit the Bank to inspect all accounts, records, and other documents relating to the submission of bids and contract performance, and to have them audited by auditors appointed by the Bank."

⁶ A firm or individual may be declared ineligible to be awarded a Bank financed contract upon: (i) completion of the Bank's sanctions proceedings as per its sanctions procedures, including, inter alia, cross-debarment as agreed with other International Financial Institutions, including Multilateral Development Banks, and through the application the World Bank Group corporate administrative procurement sanctions procedures for fraud and corruption; and (ii) as a result of temporary suspension or early temporary suspension in connection with an ongoing sanctions proceeding. See footnote 14 and paragraph 8 of Appendix 1 of these Guidelines.

⁷ A nominated sub-contractor, consultant, manufacturer or supplier, or service provider (different names are used depending on the particular bidding document) is one which has either 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.

PART 2 – Supply Requirements

Section VII - Schedule of Requirements

Contents

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1. General Description

This Contract is for the supply, delivery, installation, integration and commissioning of individual Units and a fully integrated Multi-Hazard Early Warning System (MHEWS) to facilitate the digital transformation of MNRE operational services relating to multi-hazard warning. The focus of this Contract is to equip the new NEOC facility and implement a MHEWS wide area network (WAN) between NEOC, SMD and WRD sites to ensure operational data is shared and available to all emergency warning services. The Contract will also include operational support services for up to five (5) years on critical infrastructure and operational systems equipment, following successful commissioning of the System.

All ICT goods, software and related services for this Contract have been packaged into a single procurement lot. The Contract must be managed on a single responsibility basis, so contractor demarcation does not occur and eliminates implementation order dependencies.

The Contract comprises the following components:

Component 1: Datacenter and Computer Room Facilities **Error! Reference source not found.**

Component 2: Network WAN and LAN Infrastructure **Error! Reference source not found.**

Component 3: Storage Infrastructure **Error! Reference source not found.**

Component 4: Virtual Server Infrastructure (VI) **Error! Reference source not found.**

Component 5: Forecaster Workstations **Error! Reference source not found.**

Component 6: Uninterruptible Power Supply for Workstations and Equipment Racks **Error! Reference source not found.**

Component 7: Contractor Project Responsibilities: Management, Training and Operational Support Services.

The Bidder is required to include a **preliminary Network and Virtual Infrastructure Design** as part of the bid, for determining suitability of bidder solution.

At start of the Contract, the Supplier (successful bidder) will be required to meet with the System Integrator and the Purchaser's ICT Department to finalize and formalize network design, IP addressing, routing approach, authentication and security requirements and configuration. The Supplier should not order any goods without agreement of the Purchaser's, such authorization will not be given until there is finalization of the network and virtual infrastructure designs. This precaution is to avoid equipment being ordered that does not meet the final accepted design.

Detailed description of each component and its requirements is provided in the Technical Specifications.

References to brand names, catalogue numbers, or similar classifications, if any, in the Specifications or elsewhere are provided for the purpose of specifying equivalence. Bidders may offer goods which have similar characteristics and performance at least substantially equivalent to those specified.

All software and hardware supplied under the Contract shall be new, unused, and incorporate all recent improvements in design that materially affect the System's or Subsystem's ability to fulfill the Technical Requirements.

Wherever "Contractor" is referred to, it means "Supplier", as defined in the GCC.

1. List of Goods and Delivery Schedule

The List of Goods and Delivery Schedule is listed below and forms part of the Bidding Document

An electronic copy of the List of Goods and Delivery Schedule may be issued for the convenience of Bidders and has no status under the Contracts. It is the Bidder's sole responsibility to validate the electronic copy of the List of Goods and Delivery Schedule against the printed hard copy issued for bidding

[The Bidder's offered Delivery date to be filled by the Bidder]

| Line Item N° | Description of Goods | Quantity | Physical unit | Final (Project Site) Destination as specified in BDS | Delivery (as per Incoterms) (No. of days from Contract Signing) | | |
|--------------|---|----------|---------------|--|---|---------------|--|
| | | | | | | Delivery Date | Bidder's offered Delivery date [<i>to be provided by the bidder</i>] |
| | | | | | | | |
| G1-1.1 | MicroDC Equipment Rack 5kVA/6kVA UPS with 3kW cooling | 2 | Set | NEOC Server Room | | 180 | |
| G1-1.2 | MicroDC Equipment Rack 5kVA/6kVA UPS with 3kW cooling | 1 | Set | SMD ESOC | | 180 | |
| | | | | | | | |
| G1-2.1 | 19” 47RU ICT Equipment Server Rack | 1 | Set | WRD Tatte Building Computer Room | | 180 | |
| G1-2.2 | 19” 47RU ICT Equipment Server Rack | 1 | Set | SMD Server Room | | 180 | |
| G1-2.3 | 19” 47RU ICT Equipment Server Rack | 1 | Set | SMD Seismic Computer Room | | 180 | |
| | | | | | | | |
| G1-3.1 | 19” Equipment Rack – Vertical Smart Power Distribution Unit | 1 | Set | SMD Server Room | | 180 | |

| Line Item N° | Description of Goods | Quantity | Physical unit | Final (Project Site) Destination as specified in BDS | Delivery (as per Incoterms) (No. of days from Contract Signing) | | |
|--------------|--|----------|---------------|--|---|---------------|---|
| | | | | | | Delivery Date | Bidder's offered Delivery date [to be provided by the bidder] |
| G1-3.2 | 19" Equipment Rack – Vertical Smart Power Distribution Unit | 1 | Set | SMD Seismic Computer Room | | 180 | |
| G1-3.3 | 19" Equipment Rack – Vertical Smart Power Distribution Unit | 1 | Set | WRD Tatte Building Computer Room | | 180 | |
| G1-4.1 | 19" Rack Mount–KVM Standalone Controller over IP – 16 Ports | 1 | Set | SMD ESOC Room | | 180 | |
| G1-5.1 | 19" Rack Mount–KVM 19" LCD Console with embedded Controller over IP – 16 Ports | 2 | Set | NEOC Server Room | | 180 | |
| G1-5.2 | 19" Rack Mount–KVM 19" LCD Console with embedded Controller over IP – 16 Ports | 1 | Set | SMD Computer Room | | 180 | |
| G1-5.3 | 19" Rack Mount–KVM LCD Console with embedded Controller over IP – 16 Ports | 1 | Set | SMD Seismic Computer Room | | 180 | |
| G1-5.4 | 19" Rack Mount–KVM 19" LCD Console with embedded Controller over IP – 16 Ports | 1 | Set | WRD Tatte Building Computer Room | | 180 | |
| G1-6.1 | KVM VGA/PS-2 device media adapter | 10 | Set | NEOC Server Room | | 180 | |
| G1-7.1 | KVM DVI/USB device media adapter | 15 | Set | NEOC Server Room | | 180 | |
| G1-8.1 | KVM HDMI/USB device media adapter | 15 | Set | NEOC Server Room | | 180 | |
| G1-9.1 | KVM DisplayPort/USB device media adapter | 10 | Set | NEOC Server Room | | 180 | |
| G1-10.1 | KVM controller Daisy chain 5m cable | 2 | Set | NEOC Server Room | | 180 | |
| G1-11.1 | 19" Rack Accessories – Rack Cage M6 Nuts with Screws and washes Bag of 50 sets | 2 | Bag | NEOC Server Room | | 180 | |
| G1-11.2 | 19" Rack Accessories – Rack Cage M6 Nuts with Screws and washes Bag of 50 sets | 2 | Bag | SMD | | 180 | |

| Line Item N° | Description of Goods | Quantity | Physical unit | Final (Project Site) Destination as specified in BDS | Delivery (as per Incoterms) (No. of days from Contract Signing) | | |
|--------------|--|----------|---------------|--|---|---------------|---|
| | | | | | | Delivery Date | Bidder's offered Delivery date [to be provided by the bidder] |
| G1-11.3 | 19" Rack Accessories – Rack Cage M6 Nuts with Screws and washes Bag of 50 sets | 2 | Bag | WRD Tatte Building Computer Room | | 180 | |
| G1-12.1 | 19" Rack Accessories -Fixed Rack Tray | 2 | Ea. | NEOC Server Room | | 180 | |
| G1-12.2 | 19" Rack Accessories -Fixed Rack Tray | 3 | Ea. | SMD | | 180 | |
| G1-12.3 | 19" Rack Accessories -Fixed Rack Tray | 1 | Ea. | WRD Tatte Building Computer Room | | 180 | |
| G1-13.1 | 19" Rack Accessories -Sliding Tray Shelf | 2 | Ea. | NEOC Server Room | | 180 | |
| G1-13.2 | 19" Rack Accessories -Sliding Tray Shelf | 3 | Ea. | SMD | | 180 | |
| G1-13.3 | 19" Rack Accessories -Sliding Tray Shelf | 1 | Ea. | WRD Tatte Building Computer Room | | 180 | |
| G1-14.1 | 19" Rack Accessories - 3RU Rack mounted drawer | 1 | Ea. | NEOC Server Room | | 180 | |
| G1-14.2 | 19" Rack Accessories - 3RU Rack mounted drawer | 1 | Ea. | SMD | | 180 | |
| G1-14.3 | 19" Rack Accessories - 3RU Rack mounted drawer | 1 | Ea. | WRD Tatte Building Computer Room | | 180 | |
| G1-15.1 | 19" Rack Accessories - 2RU VERTICAL Mount Cable Management Rail | 4 | Ea. | NEOC Server Room | | 180 | |
| G1-15.2 | 19" Rack Accessories - 2RU VERTICAL Mount Cable Management Rail | 3 | Ea. | SMD | | 180 | |
| G1-15.3 | 19" Rack Accessories - 2RU VERTICAL Mount Cable Management Rail | 1 | Ea. | WRD Tatte Building Computer Room | | 180 | |
| G1-16.1 | 19" Rack Accessories - 2RU horizontal high-density guide | 4 | Ea. | NEOC Server Room | | 180 | |
| G1-16.2 | 19" Rack Accessories - 2RU horizontal high-density guide | 3 | Ea. | SMD | | 180 | |

| Line Item N° | Description of Goods | Quantity | Physical unit | Final (Project Site) Destination as specified in BDS | Delivery (as per Incoterms) (No. of days from Contract Signing) | | |
|--------------|--|----------|---------------|--|---|---------------|---|
| | | | | | | Delivery Date | Bidder's offered Delivery date [to be provided by the bidder] |
| G1-16.3 | 19" Rack Accessories - 2RU horizontal high-density guide | 1 | Ea. | WRD Tatte Building Computer Room | | 180 | |
| G1-17.1 | 19" Rack Accessories - -- Cable management – 1RU horizontal D-Ring Plastic | 2 | Ea. | NEOC Server Room | | 180 | |
| G1-17.2 | 19" Rack Accessories - -- Cable management – 1RU horizontal D-Ring Plastic | 3 | Ea. | SMD | | 180 | |
| G1-17.3 | 19" Rack Accessories - -- Cable management – 1RU horizontal D-Ring Plastic | 1 | Ea. | WRD Tatte Building Computer Room | | 180 | |
| G1-18.1 | 19" Rack Accessories - -- Cable management – 2RU horizontal D-Ring Plastic | 2 | Ea. | NEOC Server Room | | 180 | |
| G1-18.2 | 19" Rack Accessories - -- Cable management – 2RU horizontal D-Ring Plastic | 3 | Ea. | SMD | | 180 | |
| G1-18.3 | 19" Rack Accessories - -- Cable management – 2RU horizontal D-Ring Plastic | 1 | Ea. | WRD Tatte Building Computer Room | | 180 | |
| G1-19.1 | 19" Rack Accessories - Cable Fastener Strap 30m x 15mm wide Black | 2 | Roll | NEOC Server Room | | 180 | |
| G1-19.2 | 19" Rack Accessories - Cable Fastener Strap 30m x 15mm wide Black | 3 | Roll | SMD | | 180 | |
| G1-19.3 | 19" Rack Accessories - Cable Fastener Strap 30m x 15mm wide Black | 1 | Roll | WRD Tatte Building Computer Room | | 180 | |
| G1-20.1 | 19" Rack 1RU 48 Port UTP Angled 'V' Style Patch Panel - Unloaded | 2 | Ea. | NEOC Server Room | | 180 | |
| G1-20.2 | 19" Rack 1RU 48 Port UTP Angled 'V' Style Patch Panel - Unloaded | 3 | Ea. | SMD | | 180 | |
| G1-20.3 | 19" Rack 1RU 48 Port UTP Angled 'V' Style Patch Panel - Unloaded | 1 | Ea. | SMD | | 180 | |

| Line Item N° | Description of Goods | Quantity | Physical unit | Final (Project Site) Destination as specified in BDS | Delivery (as per Incoterms) (No. of days from Contract Signing) | | |
|--------------|---|----------|---------------|--|---|---------------|---|
| | | | | | | Delivery Date | Bidder's offered Delivery date [to be provided by the bidder] |
| G1-21.1 | 19" Rack Accessories – 1RU 24 Port Unloaded Patch Panel | 4 | Ea. | NEOC Server Room | | 180 | |
| G1-21.2 | 19" Rack Accessories – 1RU 24 Port Unloaded Patch Panel | 3 | Ea. | WRD Computer Room | | 180 | |
| G1-21.3 | 19" Rack Accessories – 1RU 24 Port Unloaded Patch Panel | 1 | Ea. | SMD | | 180 | |
| G1-22.1 | CAT6 UTP RJ45 SNAP-IN KEYSTONE COUPLER Black, Pack of 10 | 15 | Pack | NEOC Server Room | | 180 | |
| G1-22.2 | CAT6 UTP RJ45 SNAP-IN KEYSTONE COUPLER Black, Pack of 10 | 5 | Pack | WRD Computer Room | | 180 | |
| G1-22.3 | CAT6 UTP RJ45 SNAP-IN KEYSTONE COUPLER Black, Pack of 10 | 2 | Pack | SMD | | 180 | |
| G1-23.1 | CAT 6 RJ45 KEYSTONE JACK. PUSH DUST COVER. UNIVERSAL PUNCH DOWN TERMINATION BLACK, 10 PACK. | 10 | Pack | NEOC Server Room | | 180 | |
| G1-23.2 | CAT 6 RJ45 KEYSTONE JACK. PUSH DUST COVER. UNIVERSAL PUNCH DOWN TERMINATION BLACK, 10 PACK. | 5 | Pack | WRD Computer Room | | 180 | |
| G1-23.3 | CAT 6 RJ45 KEYSTONE JACK. PUSH DUST COVER. UNIVERSAL PUNCH DOWN TERMINATION BLACK, 10 PACK. | 2 | Pack | SMD | | 180 | |
| G1-24.1 | 19" Rack Accessories - Keystone F-Connector (10 in pack) | 2 | Pack | NEOC Server Room | | 180 | |
| G1-24.2 | 19" Rack Accessories - Keystone F-Connector (10 in pack) | 1 | Pack | WRD Computer Room | | 180 | |
| G1-24.3 | 19" Rack Accessories - Keystone F-Connector (10 in pack) | 1 | Pack | SMD | | 180 | |
| G1-25.1 | 19" Rack Accessories - KEYSTONE Blanking Inserts BLACK (10 in pack) | 5 | Pack | NEOC Server Room | | 180 | |

| Line Item N° | Description of Goods | Quantity | Physical unit | Final (Project Site) Destination as specified in BDS | Delivery (as per Incoterms) (No. of days from Contract Signing) | | |
|--------------|---|----------|---------------|--|---|---------------|---|
| | | | | | | Delivery Date | Bidder's offered Delivery date [to be provided by the bidder] |
| G1-25.2 | 19" Rack Accessories - KEYSTONE Blanking Inserts BLACK (10 in pack) | 3 | Pack | SMD | | 180 | |
| G1-25.3 | 19" Rack Accessories - KEYSTONE Blanking Inserts BLACK (10 in pack) | 1 | Pack | WRD Tatte Building Computer Room | | 180 | |
| G1-26.1 | 19" Rack Accessories - KEYSTONE RCA socket coupler (10 in pack) | 3 | Pack | NEOC Server Room | | 180 | |
| G1-26.2 | 19" Rack Accessories - KEYSTONE RCA socket coupler (10 in pack) | 2 | Pack | SMD | | 180 | |
| G1-26.3 | 19" Rack Accessories - KEYSTONE RCA socket coupler (10 in pack) | 1 | Pack | WRD Tatte Building Computer Room | | 180 | |
| G1-27.1 | 19" Rack Accessories – Fibre Keystone Insert for LC and SC 10 in pack | 3 | Pack | NEOC Server Room | | 180 | |
| G1-27.2 | 19" Rack Accessories – Fibre Keystone Insert for LC and SC 10 in pack | 2 | Pack | SMD | | 180 | |
| G1-27.3 | 19" Rack Accessories – Fibre Keystone Insert for LC and SC 10 in pack | 1 | Pack | WRD Tatte Building Computer Room | | 180 | |
| G1-28.1 | CAT6 8 Position RJ45 plug stranded Modular Crimp Plug 100 Pack | 1 | Pack | NEOC Server Room | | 180 | |
| G1-29.1 | CAT6 8 Position RJ45 plug solid Modular Crimp Plug 100 Pack | 2 | Pack | NEOC Server Room | | 180 | |
| | | | | | | | |
| G1-30.1 | Cable Patch Lead – 1/10GbE CAT6A RJ45 to RJ45 Stranded LSZH Cover Various Lengths=0.5 - 15 metres, Colours=White, Purple, Blue, LightBlue, Yellow, Green, Orange, Red, Grey, Black. | 1 | Set | NEOC Server Room | | 180 | |

| Line Item N° | Description of Goods | Quantity | Physical unit | Final (Project Site) Destination as specified in BDS | Delivery (as per Incoterms) (No. of days from Contract Signing) | | |
|--------------|---|----------|---------------|--|---|---------------|---|
| | | | | | | Delivery Date | Bidder's offered Delivery date [to be provided by the bidder] |
| G1-30.2 | Cable Patch Lead – 1/10GbE CAT6A RJ45 to RJ45 Stranded LSZH Cover Various Lengths=0.5 - 15 metres, Colours=White, Purple, Blue, LightBlue, Yellow, Green, Orange, Red, Grey, Black. | 1 | Set | SMD | | 180 | |
| G1-30.3 | Cable Patch Lead – 1/10GbE CAT6A RJ45 to RJ45 Stranded LSZH Cover Various Lengths=0.5 - 15 metres, Colours=White, Purple, Blue, LightBlue, Yellow, Green, Orange, Red, Grey, Black. | 1 | Set | WRD (Tatte) | | 180 | |
| G1-31.1 | Cable Roll CAT6 LSZH, Reel of ~300metres, Colour=Blue | 1 | Roll | NEOC Server Room | | 180 | |
| G1-31.2 | Cable Roll CAT6 LSZH, Reel of ~300metres, Colour=Grey | 1 | Roll | NEOC Server Room | | 180 | |
| G1-32.1 | RJ45 Cable Boot (10 in pack), Colour Grey | 10 | Pack | NEOC Server Room | | 180 | |
| G1-32.2 | RJ45 Cable Boot (10 in pack), Colour Blue | 10 | Pack | NEOC Server Room | | 180 | |
| G1-33.1 | Fibre Patch Cable Multimode LC-LC Fibre Cable OM4 flexiboot, duplex, length 1-15 metres as required for datacentre/server room device patching | 1 | Set. | NEOC Server Room | | 180 | |
| G1-33.2 | Fibre Patch Cable Multimode LC-LC Fibre Cable OM4 flexiboot, duplex, length 1-15 metres as required for datacentre/server room device patching | 1 | Set. | SMD | | 180 | |
| G1-33.3 | Fibre Patch Cable Multimode LC-LC Fibre Cable OM4 flexiboot, duplex, length 1-15 metres as required for datacentre/server room device patching | 1 | Set. | WRD (Tatte) | | 180 | |
| G1-34.1 | Power Cable - IEC C13 to C14 Cord 10A <u>3 metre Red</u> | 10 | Ea. | NEOC Server Room | | 180 | |
| G1-34.2 | Power Cable - IEC C13 to C14 Cord 10A <u>3 metre Black</u> | 10 | Ea. | NEOC Server Room | | 180 | |

| Line Item N° | Description of Goods | Quantity | Physical unit | Final (Project Site) Destination as specified in BDS | Delivery (as per Incoterms) (No. of days from Contract Signing) | | |
|--------------|--|----------|---------------|--|---|---------------|---|
| | | | | | | Delivery Date | Bidder's offered Delivery date [to be provided by the bidder] |
| | | | | | | | |
| G1-35.1 | Brother labeller | 1 | Set | NEOC Server Room | | 180 | |
| G1-36.1 | Cable Continuity Tester | 1 | Set | NEOC Server Room | | 180 | |
| G1-37.1 | HDMI Cable Tester | 1 | Set | NEOC Server Room | | 180 | |
| G1-38.1 | Professional 5 ¼” Precise Flush Cut Pliers | 1 | Ea. | NEOC Server Room | | 180 | |
| G1-39.1 | Crescent Insulated Electrical Screwdriver set 8 Piece | 1 | Set | NEOC Server Room | | 180 | |
| G1-40.1 | Crescent Self Adjustable Wire Stripper | 1 | Set | NEOC Server Room | | 180 | |
| G1-41.1 | Crescent Ratcheting Crimping Tool Set 10 piece | 1 | Set | NEOC Server Room | | 180 | |
| G1-42.1 | Professional 110 Punch Down Tool | 1 | Ea. | NEOC Server Room | | 180 | |
| G1-42.2 | Professional 110 Punch Down Tool | 1 | Ea. | SMD | | 180 | |
| G1-42.3 | Professional 110 Punch Down Tool | 1 | Ea. | WRD (Tatte) | | 180 | |
| G1-43.1 | Disposable Cable Stripper with 110 IDC Tool | 2 | Ea. | NEOC Server Room | | 180 | |
| G1-43.2 | Disposable Cable Stripper with 110 IDC Tool | 2 | Ea. | SMD | | 180 | |
| G1-43.3 | Disposable Cable Stripper with 110 IDC Tool | 2 | Ea. | WRD (Tatte) | | 180 | |
| G1-44.1 | Refill Tape to suit for Industrial labeller 24mm | 5 | Ea. | NEOC Server Room | | 180 | |
| G1-45.1 | Refill Tape to suit for Industrial labeller 12mm | 5 | Ea. | NEOC Server Room | | 180 | |
| G1-46.1 | Refill Tape to suit for Industrial labeller 24mm TZE Tape x 8m | 5 | Ea. | NEOC Server Room | | 180 | |
| | | | | | | | |
| G2-1.1 | G1-11: Communications Serial to IP Terminal Server 8 Ports | 2 | Ea. | NEOC Server Room | | 180 | |
| G2-1.2 | G1-11: Communications Serial to IP Terminal Server 8 Ports | 1 | Ea. | SMD ESOC Room | | 180 | |

| Line Item N° | Description of Goods | Quantity | Physical unit | Final (Project Site) Destination as specified in BDS | Delivery (as per Incoterms) (No. of days from Contract Signing) | | |
|--------------|---|----------|---------------|--|---|---------------|---|
| | | | | | | Delivery Date | Bidder's offered Delivery date [to be provided by the bidder] |
| G2-1.3 | G1-11: Communications Serial to IP Terminal Server 8 Ports | 1 | Ea. | SMD Computer Room | | 180 | |
| G2-1.4 | G1-11: Communications Serial to IP Terminal Server 8 Ports | 1 | Ea. | SMD Seismic Computer Room | | 180 | |
| G2-1.5 | G1-11: Communications Serial to IP Terminal Server 8 Ports | 1 | Ea. | Tatte Building Computer Room | | 180 | |
| G2-1.6 | G1-11: Communications Serial to IP Terminal Server 8 Ports - SPARE | 1 | Ea. | NEOC Server Room | | 180 | |
| | | | | | | | |
| G2-2.1 | G1-12: Central Management Software - KVM Controller, Serial to IP Terminal Server and PDU | 1 | Ea. | NEOC Server Room | | 180 | |
| G2-2.2 | G1-12: Central Management Software - KVM Controller, Serial to IP Terminal Server and PDU | 1 | Ea. | Tatte Building Computer Room | | 180 | |
| | | | | | | | |
| G2-3.1 | Network Edge Firewall/VPN/Router for MHEWS WAN | 2 | Ea. | NEOC Server Room | | 180 | |
| G2-3.2 | Network Edge Firewall/VPN/Router for MHEWS WAN | 2 | Ea. | SMD Computer Room | | 180 | |
| G2-3.3 | Network Edge Firewall/VPN/Router for MHEWS WAN | 2 | Ea. | WRD Tatte Building Computer Room | | 180 | |
| G2-4.1 | Network Core Firewall/VPN/Router for Datacentre | 2 | Ea. | NEOC Server Room | | 180 | |
| G2-5.1 | Network Firewall Router Central Management Appliance/VM | 1 | Ea. | NEOC Server Room | | 180 | |
| G2-6.1 | Network Core Switch L2/L3 48 Port 10GbE, 4 Port SPF+ Performance Smart Stackable Managed Switch | 2 | Ea. | NEOC Server Room | | 180 | |

| Line Item N° | Description of Goods | Quantity | Physical unit | Final (Project Site) Destination as specified in BDS | Delivery (as per Incoterms) (No. of days from Contract Signing) | | |
|--------------|---|----------|---------------|--|---|---------------|---|
| | | | | | | Delivery Date | Bidder's offered Delivery date [to be provided by the bidder] |
| G2-7.1 | Network LAN Core/ToR Switch L2/L3 24 Port 10GbE, 4 Port 40Gbps uplink SPF+ Performance Smart Stackable Managed Switch | 3 | Ea. | SMD Computer Room | | 180 | |
| G2-7.2 | Network LAN Core/ToR Switch L2/L3 24 Port 10GbE, 4 Port 40Gbps uplink SPF+ Performance Smart Stackable Managed Switch | 1 | Ea. | Tatte Building Computer Room | | 180 | |
| G2-7.1 | Network LAN Access Layer 2 24 Port 1GbE/ Port 10GbE Smart Stackable Managed Switch | 2 | Ea. | NEOC Server Room | | 180 | |
| G2-8.2 | Network LAN Access 24 Port 1GbE/ Port 10GbE Smart Stackable Managed Switch with 10G/25G uplink | 1 | Ea. | SMD Computer Room | | 180 | |
| G2-8.3 | Network LAN Access 24 Port 1GbE/ Port 10GbE Smart Stackable Managed Switch with 10G/25G uplink | 1 | Ea. | Tatte Building Computer Room | | 180 | |
| G2-8.4 | Network LAN Access 24 Port 1GbE/ Port 10GbE Smart Stackable Managed Switch with 10G/25G uplink - SPARE | 1 | Ea. | NEOC- | | 180 | |
| G2-9.1 | Network DMZ Router Access Switch L2 8 Port 1GbE/ Port 1GbE Smart Stackable Managed Switch | 2 | Ea. | NEOC Server Room | | 180 | |
| G2-9.2 | Network DMZ Router Access Switch L2 8 Port 1GbE/ Port 1GbE Smart Stackable Managed Switch | 2 | Ea. | SMD Computer Room | | 180 | |
| G2-9.3 | Network DMZ Router Access Switch L2 8 Port 1GbE/ Port 1GbE Smart Stackable Managed Switch | 2 | Ea. | Tatte Building Computer Room | | 180 | |
| G2-10.1 | Network IPSAN Switch L2/L3 12 Port 10GbE, 4 port 40Gbps uplink SPF+ Performance Smart Stackable Managed Switch | 2 | Ea. | NEOC Server Room | | 180 | |

| Line Item N° | Description of Goods | Quantity | Physical unit | Final (Project Site) Destination as specified in BDS | Delivery (as per Incoterms) (No. of days from Contract Signing) | | |
|--|--|----------|---------------|--|---|---------------|---|
| | | | | | | Delivery Date | Bidder's offered Delivery date [to be provided by the bidder] |
| Component 3 – Goods SpecificationsError! Reference source not found. | | | | | | | |
| G3-1.1 | Active-Passive Dual Controller IPSAN for DMZ with rack rail kit | 1 | Set | NEOC Server Room | | 180 | |
| G3-1.2 | Active-Active IPSAN for Virtual Infrastructure Cluster in LAN with rack rail kit | 1 | Set | NEOC Server Room | | 180 | |
| G3-2.1 | Active-Passive Dual Controller NAS for DMZ Data Exchange with rack rail kit | 1 | Set | NEOC Server Room | | 180 | |
| G3-2.2 | Active-Passive Dual Controller NAS for LAN Collaboration with rack rail kit | 1 | Set | NEOC Server Room | | 180 | |
| G3-2.3 | Active-Passive Dual Controller NAS for DMZ Data Exchange with rack rail kit | 1 | Set | SMD Computer Room | | 180 | |
| G3-2.4 | Active-Passive Dual Controller NAS for LAN Collaboration with rack rail kit | 1 | Set | SMD Computer Room | | 180 | |
| G3-2.5 | Active-Passive Dual Controller NAS for DMZ Data Exchange with rack rail kit | 1 | Set | Tatte Building Computer Room | | 180 | |
| G3-2.6 | Active-Passive Dual Controller NAS for LAN Collaboration with rack rail kit | 1 | Set | Tatte Building Computer Room | | 180 | |
| G3-3.1 | RAM 16GB DDR4 ECC DIMM for G3-1 SAN Pack of two identical DIMM Pairs Synology 16GB DDR4 ECC DIMM 2666MHz Memory Module D4EC-2666-16G for UC3200. Pack of two identical DIMM Pairs | 6 | Pack | NEOC Server Room | | 180 | |
| G3-3.2 | RAM 16GB DDR4 ECC DIMM for G3-1 SAN Pack of two identical DIMM Pairs Synology 16GB DDR4 ECC DIMM 2666MHz Memory Module D4EC-2666-16G for UC3200. Pack of two identical DIMM Pairs | 2 | Pack | SMD Computer Room | | 180 | |

| Line Item N° | Description of Goods | Quantity | Physical unit | Final (Project Site) Destination as specified in BDS | Delivery (as per Incoterms) (No. of days from Contract Signing) | | |
|--------------|---|----------|---------------|--|---|---------------|---|
| | | | | | | Delivery Date | Bidder's offered Delivery date [to be provided by the bidder] |
| G3-3.3 | RAM 16GB DDR4 ECC DIMM for G3-1 SAN Pack of two identical DIMM Pairs Synology 16GB DDR4 ECC DIMM 2666MHz Memory Module D4EC-2666-16G for UC3200. Pack of two identical DIMM Pairs | 2 | Pack | Tatte Building Computer Room | | 180 | |
| G3-4.1 | RAM 16GB DDR4 ECC DIMM for G3-2 NAS Pack of two identical DIMM Pairs Synology 16GB DDR4 ECC DIMM 2666MHz Memory Module D4EC-2666-16G for SA3200D. Pack of two identical DIMM Pairs | 6 | Pack | NEOC Server Room | | 180 | |
| G3-4.2 | RAM 16GB DDR4 ECC DIMM for G3-2 NAS Pack of two identical DIMM Pairs Synology 16GB DDR4 ECC DIMM 2666MHz Memory Module D4EC-2666-16G for SA3200D. Pack of two identical DIMM Pairs | 2 | Pack | SMD Computer Room | | 180 | |
| G3-4.3 | RAM 16GB DDR4 ECC DIMM for G3-2 NAS Pack of two identical DIMM Pairs Synology 16GB DDR4 ECC DIMM 2666MHz Memory Module D4EC-2666-16G for SA3200D. Pack of two identical DIMM Pairs | 2 | Pack | Tatte Building Computer Room | | 180 | |
| G3-5.1 | Network Adapter Dual Port 10 Gigabit RJ45 PCI Express Ethernet Adapter | 8 | Ea. | NEOC Server Room | | 180 | |
| G3-5.2 | Network Adapter Dual Port 10 Gigabit RJ45 PCI Express Ethernet Adapter | 4 | Ea. | SMD Computer Room | | 180 | |
| G3-5.3 | Network Adapter Dual Port 10 Gigabit RJ45 PCI Express Ethernet Adapter | 4 | Ea. | Tatte Building Computer Room | | 180 | |

| Line Item N° | Description of Goods | Quantity | Physical unit | Final (Project Site) Destination as specified in BDS | Delivery (as per Incoterms) (No. of days from Contract Signing) | | |
|--------------|---|----------|---------------|--|---|---------------|---|
| | | | | | | Delivery Date | Bidder's offered Delivery date [to be provided by the bidder] |
| G3-6.1 | Enterprise Server/NAS/SAN Class Hard drive 12TB SAS3 7200RPM 3.5" 256MB Cache 5 Year Warranty | 24 | Ea. | NEOC Server Room | | 180 | |
| G3-6.2 | Enterprise Server/NAS/SAN Class Hard drive 12TB SAS3 7200RPM 3.5" 256MB Cache 5 Year Warranty | 10 | Ea. | SMD Computer Room | | 180 | |
| G3-6.3 | Enterprise Server/NAS/SAN Class Hard drive 12TB SAS3 7200RPM 3.5" 256MB Cache 5 Year Warranty | 10 | Ea. | Tatte Building Computer Room | | 180 | |
| G3-7.1 | Enterprise Server/NAS/SAN Class Solid State Drive (SSD) 12TB SAS3 2.5" 5 Year Warranty | 8 | Ea. | NEOC Server Room | | 180 | |
| G3-7.2 | Enterprise Server/NAS/SAN Class Solid State Drive (SSD) 12TB SAS3 2.5" 5 Year Warranty | 4 | Ea. | SMD Computer Room | | 180 | |
| G3-7.3 | Enterprise Server/NAS/SAN Class Solid State Drive (SSD) 12TB SAS3 2.5" 5 Year Warranty | 4 | Ea. | Tatte Building Computer Room | | 180 | |
| | | | | | | | |
| G4-1.1 | VI - Host Server Node, DMZ Cluster min 4 x 10GbE RJ45, 2 x 1GbE ILOM, 2 x 8C/16T Xeon Silver 4215 CPU, 128GB RAM (8 x 16GB) 3200MT/s RDIMMS performance optimised, 1 RU, 2 x PSU, 2 x Fan, chassis support for 12 hot plug drives. TPM v2.0, RAID controller, 5 x 2TB SATA 7200RPM 6Gbps hot plug drive, ESXi v7.0 loaded onto embedded flash storage, 5 warranty/maintenance/support. | 2 | Set | NEOC Server Room | | 180 | |

| Line Item N° | Description of Goods | Quantity | Physical unit | Final (Project Site) Destination as specified in BDS | Delivery (as per Incoterms) (No. of days from Contract Signing) | | |
|--------------|--|----------|---------------|--|---|---------------|---|
| | | | | | | Delivery Date | Bidder's offered Delivery date [to be provided by the bidder] |
| G4-1.2 | VI - Host Server Node, Ops Internal Cluster min 4 x 10GbE RJ45, 2 x 1GbE ILOM, 2 x 8C/16T Xeon Silver 4215 CPU, 128GB RAM (8 x 16GB) 3200MT/s RDIMMS performance optimised, 1 RU, 2 x PSU, 2 x Fan, chassis support for 12 hot plug drives. TPM v2.0, RAID controller, 5 x 2TB SATA 7200RPM 6Gbps hot plug drive, ESXi v7.0 loaded onto embedded flash storage, 5 warranty/maintenance/support. | 3 | Set | NEOC Server Room | | 180 | |
| G4-2.1 | Virtual Infrastructure Hypervisor and Management Software with HA, Distr. Network, vMotion for Remote Office Branch Office (ROBO) with Advanced feature. Licenced for 25 VMs across Branch Offices without cluster host size restrictions. Production Level support and 5 years Support and Maintenance. | 1 | Licence | NEOC Server Room | | 180 | |
| G4-3.1 | VI Manager for Management and Monitoring of all Hosts, Storage, virtual servers and networks across LAN and WAN branch Offices. Licence to have no Restrictions, Production Level support and 5 years Support and Maintenance. | 1 | Licence | NEOC Server Room | | 180 | |
| G4-4.1 | Virtual Workstation Development System latest version available. For VM build and testing | 1 | Ea. | NEOC Server Room | | 180 | |

| Line Item N° | Description of Goods | Quantity | Physical unit | Final (Project Site) Destination as specified in BDS | Delivery (as per Incoterms) (No. of days from Contract Signing) | | |
|--------------|--|----------|---------------|--|---|---------------|---|
| | | | | | | Delivery Date | Bidder's offered Delivery date [to be provided by the bidder] |
| G4-5.1 | VI - virtual machine operating system software – Windows 10 Professional x64 Edition licence. For OPS LAN Cluster. Full Retail Licence. | 8 | Ea. | NEOC Server Room | | 180 | |
| G4-6.1 | VI - virtual machine Antivirus/Cyber Protection Software – Windows 10 Professional x64 Edition. Licence Key/s only for 2 years support and maintenance, 3 Devices per Key (Kaspersky or Trend Micro Internet Security) | 20 | Ea. | NEOC Server Room | | 180 | |
| G4-7.1 | VI - virtual machine Antivirus/Cyber Protection Software – Windows Server 2019 Standard x64 Edition. Licence Key/s only for 2 years support and maintenance | 5 | Ea. | NEOC Server Room | | 180 | |
| G4-8.1 | VI - virtual machine Antivirus/Cyber Protection Software – Linux Server Sophos for 2 years support and maintenance per Server/VM | 10 | Ea. | NEOC Server Room | | 180 | |
| G4-9.1 | 10-pack Windows Server 2016/2019 Device CALs | 4 | Pk. | NEOC Server Room | | 180 | |
| G4-10.1 | Windows Server 2019 Standard Ed licence, 16 Core, No CAL | 5 | Ea. | NEOC Server Room | | 180 | |
| | | | | | | | |
| G5-1.1 | Computer Workstation - "Computer for Forecasting | 4 | Ea. | NEOC EOC | | 180 | |
| G5-1.2 | Computer Workstation - "Computer for Forecasting | 2 | Set | SMD ESOC Room | | 180 | |
| G5-1.3 | Computer Workstation - "Computer for Forecasting | 2 | Set | SMD Seismic Computer Room | | 180 | |
| G5-4.1 | "27-inch-High Definition Display Screen" | 8 | Set | NEOC EOC | | 180 | |
| G5-4.2 | "27-inch-High Definition Display Screen" | 4 | Set | SMD ESOC Room | | 180 | |

| Line Item N° | Description of Goods | Quantity | Physical unit | Final (Project Site) Destination as specified in BDS | Delivery (as per Incoterms) (No. of days from Contract Signing) | | |
|--------------|--|----------|---------------|--|---|---------------|---|
| | | | | | | Delivery Date | Bidder's offered Delivery date [to be provided by the bidder] |
| G5-4.3 | "27-inch-High Definition Display Screen" | 4 | Set | SMD Seismic Computer Room | | 180 | |
| G5-5.1 | Automated Desktop Deployment System (software) perpetual licence - 1 device | 10 | Ea. | NEOC EOC | | 180 | |
| G5-5.2 | Automated Desktop Deployment System (software) perpetual licence - 1 device | 20 | Ea. | SMD ESOC Room | | 180 | |
| G5-5.3 | Automated Desktop Deployment System (software) perpetual licence - 1 device | 10 | Ea. | SMD Seismic Computer Room | | 180 | |
| G5-6.1 | Workstation Cyber Protection Backup/Restore (Acronis True Image 2021 Advanced) Perpetual Pack of 5, Windows 10 | 3 | Pk | NEOC EOC | | 180 | |
| G5-6.2 | Workstation Cyber Protection Backup/Restore (Acronis True Image 2021 Advanced) Perpetual Pack of 5, Windows 10 | 5 | Pk | SMD ESOC Room | | 180 | |
| G5-6.3 | Workstation Cyber Protection Backup/Restore (Acronis True Image 2021 Advanced) Perpetual Pack of 5, Windows 10 | 3 | Pk | SMD Seismic Computer Room | | 180 | |
| | | | | | | | |
| G6-1.1 | Tower UPS 1kVA Full-Online Sinusoidal Output 240volt | 2 | | SMD ESOC | | 180 | |
| G6-1.2 | Tower UPS 1kVA Full-Online Sinusoidal Output 240volt | 2 | | SMD Seismic OPS | | 180 | |
| G6-2.1 | Smart UPS Rack model 1kVA Full-Online Double Conversion Sinusoidal Output 240volt | 1 | Set | SMD Admin Computer Room | | 180 | |

| Line Item N° | Description of Goods | Quantity | Physical unit | Final (Project Site) Destination as specified in BDS | Delivery (as per Incoterms) (No. of days from Contract Signing) | | |
|--------------------|--|----------|------------------|---|---|------------------|---|
| | | | | | | Delivery Date | Bidder's offered Delivery date [<i>to be provided by the bidder</i>] |
| G6-2.2 | Smart UPS Rack model 1kVA Full-Online Double Conversion Sinusoidal Output 240volt | 1 | Set | SMD Seismic Computer Room | | 180 | |
| G6-2.3 | Smart UPS Rack model 1kVA Full-Online Double Conversion Sinusoidal Output 240volt | 1 | Set | WRD (Tatte Building) | | 180 | |

2. List of Related Services and Completion Schedule

The List of Related Services and Completion Schedule is listed below and forms part of the Bidding Document

An electronic copy of the List of Related Services and Completion Schedule may be issued for the convenience of Bidders and has no status under the Contracts. It is the Bidder's sole responsibility to validate the electronic copy of the List of Related Services and Completion Schedule against the printed hard copy issued for bidding

| Service | Description of Service | Quantity ¹ | Physical Unit | Place where Services shall be performed | Final Completion Date(s) of Services (No. of days from Contract Signing) |
|---|------------------------|-----------------------|---------------|---|---|
| Component 1: Technical Specification for Datacentre and Computer Room Facilities Error! Reference source not found. | | | | | |

| Service | Description of Service | Quantity¹ | Physical Unit | Place where Services shall be performed | Final Completion Date(s) of Services (No. of days from Contract Signing) |
|----------------|--|-----------------------------|----------------------|--|---|
| RS1-1.1 | <p>Micro Datacentre 19” Equipment Rack Delivery, unpack and installation. Installation of Micro Data Centre Rack, external condenser unit, required electricals and plumbing. Fix racks to floor and ensure properly earthed. Test rack to building earthing and electrical connections to ensure rack, electricals, sensors and cooling are working to specification before mounting any equipment.</p> <p>Connect network management interfaces to configured switches and configure devices for SNMP logging to designated system log server.</p> | 1 | Package | NEOC Server Room | 200 |

| Service | Description of Service | Quantity¹ | Physical Unit | Place where Services shall be performed | Final Completion Date(s) of Services (No. of days from Contract Signing) |
|----------------|---|-----------------------------|----------------------|--|---|
| RS1-1.2 | <p>Micro Datacentre 19” Equipment Rack Delivery, unpack and installation. Installation of Micro Data Centre Rack, external condenser unit, required electricals and plumbing. Fix racks to floor and level, ensure rack is properly earthed. Test rack to building earthing and electrical connections to ensure rack, electricals, sensors and cooling are working to specification before mounting any equipment.</p> <p>Connect network management interfaces to configured switches and configure devices for SNMP logging to designated system log server.</p> | 1 | Package | SMD ESOC Room | 200 |

| Service | Description of Service | Quantity¹ | Physical Unit | Place where Services shall be performed | Final Completion Date(s) of Services (No. of days from Contract Signing) |
|----------------|---|-----------------------------|----------------------|--|---|
| RS1-2.1 | <p>19” ICT Equipment Server Rack delivery, unpack and installation. Installation of rack in advised position, fix rack to floor and level, ensure rack is properly earthed, connect to nominated building electrical point. Install rack UPS, Smart PDU and required electrical leads. Test rack to building earthing and electrical connections to ensure rack and electricals are working to specification before mounting any equipment.</p> <p>Connect network management interfaces to configured switches and configure devices for SNMP logging to designated system log server.</p> | 1 | Package | SMD Computer Room | 200 |

| Service | Description of Service | Quantity¹ | Physical Unit | Place where Services shall be performed | Final Completion Date(s) of Services (No. of days from Contract Signing) |
|----------------|---|-----------------------------|----------------------|--|---|
| RS1-2.2 | <p>19” ICT Equipment Server Rack delivery, unpack and installation. Installation of rack in advised position, fix rack to floor and level, ensure rack is properly earthed, connect to nominated building electrical point. Install rack UPS, Smart PDU and required electrical leads. Test rack to building earthing and electrical connections to ensure rack and electricals are working to specification before mounting any equipment.</p> <p>Connect network management interfaces to configured switches and configure devices for SNMP logging to designated system log server.</p> | 1 | Package | SMD Seismic Computer Room | 200 |

| Service | Description of Service | Quantity¹ | Physical Unit | Place where Services shall be performed | Final Completion Date(s) of Services (No. of days from Contract Signing) |
|----------------|---|-----------------------------|----------------------|--|---|
| RS1-2.3 | <p>19” ICT Equipment Server Rack delivery, unpack and installation. Installation of rack in advised position, fix rack to floor and level, ensure rack is properly earthed, connect to nominated building electrical point. Install rack UPS, Smart PDU and required electrical leads. Test rack to building earthing and electrical connections to ensure rack and electricals are working to specification before mounting any equipment.</p> <p>Connect network management interfaces to configured switches and configure devices for SNMP logging to designated system log server.</p> | 1 | Package | WRD Tatte ICT Computer Room | 200 |

| Service | Description of Service | Quantity¹ | Physical Unit | Place where Services shall be performed | Final Completion Date(s) of Services (No. of days from Contract Signing) |
|----------------|--|-----------------------------|----------------------|--|---|
| RS1-3.1 | <p>Installation of KVM Console, Rack shelves, trays, Cable Management patch panels, tool drawer, rails and cable organisation slots into each supplied rack.</p> <p>Connect network management interfaces to configured switches and configure devices for SNMP logging to designated system log server.</p> | 3 | Package | NEOC Server Room | 210 |
| RS1-3.2 | <p>Installation of KVM Console, Rack shelves, trays, Cable Management patch panels, tool drawer, rails and cable organisation slots into each supplied rack.</p> <p>Connect network management interfaces to configured switches and configure devices for SNMP logging to designated system log server.</p> | 1 | Package | SMD Computer Room | 210 |

| Service | Description of Service | Quantity¹ | Physical Unit | Place where Services shall be performed | Final Completion Date(s) of Services (No. of days from Contract Signing) |
|----------------|--|-----------------------------|----------------------|--|---|
| RS1-3.3 | <p>Installation of KVM Console, Rack shelves, trays, Cable Management patch panels, tool drawer, rails and cable organisation slots into each supplied rack.</p> <p>Connect network management interfaces to configured switches and configure devices for SNMP logging to designated system log server.</p> | 1 | Package | SMD ESOC | 210 |
| RS1-3.4 | <p>Installation of KVM Console, Rack shelves, trays, Cable Management patch panels, tool drawer, rails and cable organisation slots into each supplied rack.</p> <p>Connect network management interfaces to configured switches and configure devices for SNMP logging to designated system log server.</p> | 1 | Package | SMD Seismic Computer Room | 210 |

| Service | Description of Service | Quantity¹ | Physical Unit | Place where Services shall be performed | Final Completion Date(s) of Services (No. of days from Contract Signing) |
|---|--|-----------------------------|----------------------|--|---|
| RS1-3.5 | <p>Installation of KVM Console, Rack shelves, trays, Cable Management patch panels, tool drawer, rails and cable organisation slots into each supplied rack.</p> <p>Connect network management interfaces to configured switches and configure devices for SNMP logging to designated system log server.</p> | 1 | Package | WRD Tatte ICT Computer Room | 210 |
| Component 2: Network WAN and LAN Infrastructure Error! Reference source not found. | | | | | |

| Service | Description of Service | Quantity¹ | Physical Unit | Place where Services shall be performed | Final Completion Date(s) of Services (No. of days from Contract Signing) |
|----------------|---|-----------------------------|----------------------|--|---|
| RS2-1 | <p>[Bidder to supply preliminary Network and Virtual Infrastructure design as part of bid for determining suitability of bidder solution.]</p> <p>At start of project meet with System Integrator and Client ICT Department to finalise and formalise network design, IP addressing, routing approach, authentication and security requirements and configuration.</p> <p>Two deliverables:</p> <ol style="list-style-type: none"> 1. ICT design and build/configuration document, 2. Contractor Project Plan, resourcing and schedule, Test Plans. | 2 | Team | NEOC | 30 |

| Service | Description of Service | Quantity¹ | Physical Unit | Place where Services shall be performed | Final Completion Date(s) of Services (No. of days from Contract Signing) |
|----------------|--|-----------------------------|----------------------|--|---|
| RS2-2.1 | <p>Install, build and configure network terminal server, switches, router/s and patch across racks using 1G CAT6 and 10G CAT6A cables to be supplied. Test and commission ready for operational use.</p> <p>Connect network management interfaces to configured switches and configure devices for SNMP logging to designated system log server.</p> | 1 | Package | NEOC | 240 |
| RS2-2.2 | <p>Install, build and configure network terminal server, switches, router/s and patch across racks using 1G CAT6 and 10G CAT6A cables to be supplied. Test and commission ready for operational use.</p> <p>Connect network management interfaces to configured switches and configure devices for SNMP logging to designated system log server.</p> | 1 | Package | SMD Computer Room | 240 |

| Service | Description of Service | Quantity¹ | Physical Unit | Place where Services shall be performed | Final Completion Date(s) of Services (No. of days from Contract Signing) |
|----------------|--|-----------------------------|----------------------|--|---|
| RS2-2.3 | <p>Install, build and configure network terminal server, switches, router/s and patch across racks using 1G CAT6 and 10G CAT6A cables to be supplied. Test and commission ready for operational use.</p> <p>Connect network management interfaces to configured switches and configure devices for SNMP logging to designated system log server.</p> | 1 | Package | SMD ESOC | 240 |
| RS2-2.4 | <p>Install, build and configure network terminal server, switches, router/s and patch across racks using 1G CAT6 and 10G CAT6A cables to be supplied. Test and commission ready for operational use.</p> <p>Connect network management interfaces to configured switches and configure devices for SNMP logging to designated system log server.</p> | 1 | Package | SMD Seismic Computer Room | 240 |

| Service | Description of Service | Quantity¹ | Physical Unit | Place where Services shall be performed | Final Completion Date(s) of Services (No. of days from Contract Signing) |
|----------------|--|-----------------------------|----------------------|--|---|
| RS2-2.5 | <p>Install, build and configure network terminal server, switches, router/s and patch across racks using 1G CAT6 and 10G CAT6A cables to be supplied. Test and commission ready for operational use.</p> <p>Connect network management interfaces to configured switches and configure devices for SNMP logging to designated system log server.</p> | 1 | Package | WRD Tatte ICT Computer Room | 240 |

| Service | Description of Service | Quantity¹ | Physical Unit | Place where Services shall be performed | Final Completion Date(s) of Services (No. of days from Contract Signing) |
|----------------|--|-----------------------------|----------------------|--|---|
| RS2-3 | <p>Install, test and commission two (2) Optical Fibre interbuilding cable runs and connections. Cable runs are to be from SMD designated main distribution rack, connect SMD ESOC, SMD Seismic and SMD Admin buildings with a fibre IDF and then Fibre cable tail to each building racks fibre patch panel.</p> <p>Fibre cables are to connect SMD LAN switch uplink ports to allow single smart management and provide a single SMD LAN.</p> <p>All external cables to be properly fastened onto catenary between buildings to ensure cabling does into any hazards, meets height requirements to not interfere with working areas and able to withstand severe winds.</p> <p>Any entry and exit points into buildings are to be weather sealed with non-toxic sealant materials.</p> <p>(Contractor is responsible for pre tender assessment to determine method, materials and whether reuse of existing catenary wiring suitable).</p> | 1 | Package | SMD | 240 |

| Service | Description of Service | Quantity ¹ | Physical Unit | Place where Services shall be performed | Final Completion Date(s) of Services (No. of days from Contract Signing) |
|---|---|-----------------------|---------------|---|--|
| Component 3: Storage Infrastructure Error! Reference source not found. | | | | | |
| RS3-1.1 | <p>DMZ – External Data Share NAS. Rack and stack NAS devices into new supplied racks, for dual power units connect power unit (1) to rack UPS and power unit (2) to mains power or building UPS if one exists.</p> <p>Install cables and patch network data ports to 10GB network and console ports to 1GB network ports on switches. Cabling to be installed as per network colour code standard. Switch ports and connections to be as per VLAN and port group mapping agreed and finalised in contract network design kick-off meeting. Test and commission ready for operational use.</p> <p>Connect network management interfaces to configured switches and configure devices for SNMP logging to designated system log server.</p> | 1 | Package | NEOC | 240 |

| Service | Description of Service | Quantity¹ | Physical Unit | Place where Services shall be performed | Final Completion Date(s) of Services (No. of days from Contract Signing) |
|----------------|---|-----------------------------|----------------------|--|---|
| RS3-1.2 | <p>DMZ – External Data Share NAS. Rack and stack NAS devices into new supplied racks, for dual power units connect power unit (1) to rack UPS and power unit (2) to mains power or building UPS if one exists.</p> <p>Install cables and patch network data ports to 10GB network and console ports to 1GB network ports on switches. Cabling to be installed as per network colour code standard. Switch ports and connections to be as per VLAN and port group mapping agreed and finalised in contract network design kick-off meeting. Test and commission ready for operational use.</p> <p>Connect network management interfaces to configured switches and configure devices for SNMP logging to designated system log server.</p> | 1 | Package | SMD Computer Room | 240 |

| Service | Description of Service | Quantity ¹ | Physical Unit | Place where Services shall be performed | Final Completion Date(s) of Services (No. of days from Contract Signing) |
|---------|---|-----------------------|---------------|---|--|
| RS3-1.3 | <p>LAN – Virtual Server Infrastructure SAN and NAS. Rack and stack storage devices across two supplied MicroDC racks, for dual power units connect power unit (1) to rack UPS and power unit (2) to mains power or building UPS if one exists.</p> <p>Install cables and patch network data ports to 10GB network and console ports to 1GB network ports across switches in each racks for high availability configuration. Cabling to be installed as per network colour code standard. Switch ports and connections to be as per VLAN and port group mapping agreed and finalised in contract network design kick-off meeting. Test and commission ready for operational use.</p> <p>Connect network management interfaces to configured switches and configure devices for SNMP logging to designated system log server.</p> | 1 | Package | WRD Tatte ICT Computer Room | 240 |

| Service | Description of Service | Quantity¹ | Physical Unit | Place where Services shall be performed | Final Completion Date(s) of Services (No. of days from Contract Signing) |
|----------------|--|-----------------------------|----------------------|--|---|
| RS3-2.1 | <p>LAN – Rack and stack NAS device for dual power units connect power unit (1) to rack UPS and power unit (2) to mains power or building UPS if one exists.</p> <p>Install cables and patch network data ports to 10GB network and console ports to 1GB network ports across switches in each racks for high availability configuration. Cabling to be installed as per network colour code standard. Switch ports and connections to be as per VLAN and port group mapping agreed and finalised in contract network design kick-off meeting. Test and commission ready for operational use.</p> <p>Connect network management interfaces to configured switches and configure devices for SNMP logging to designated system log server.</p> | 1 | Package | NEOC | 240 |

| Service | Description of Service | Quantity¹ | Physical Unit | Place where Services shall be performed | Final Completion Date(s) of Services (No. of days from Contract Signing) |
|---|--|-----------------------------|----------------------|--|---|
| RS3-2.3 | <p>LAN – Rack and stack NAS device for dual power units connect power unit (1) to rack UPS and power unit (2) to mains power or building UPS if one exists.</p> <p>Install cables and patch network data ports to 10GB network and console ports to 1GB network ports across switches in each racks for high availability configuration. Cabling to be installed as per network colour code standard. Switch ports and connections to be as per VLAN and port group mapping agreed and finalised in contract network design kick-off meeting. Test and commission ready for operational use.</p> <p>Connect network management interfaces to configured switches and configure devices for SNMP logging to designated system log server.</p> | 1 | Package | <p>WRD</p> <p>Tatte ICT Computer Room</p> | 240 |
| Component 4: Virtual Server Infrastructure (VI) Error! Reference source not found. | | | | | |

| Service | Description of Service | Quantity¹ | Physical Unit | Place where Services shall be performed | Final Completion Date(s) of Services (No. of days from Contract Signing) |
|----------------|---|-----------------------------|----------------------|--|---|
| RS4-1 | <p>[Bidder to supply preliminary design as part of bid for determining suitability of bidder solution.]</p> <p>At start of project meet with System Integrator and Client ICT Department to finalise and formalise VI design, including N+1 host, network and storage design, IP addressing, routing approach, authentication and security requirements and configuration.</p> <p>Deliverables:</p> <ul style="list-style-type: none"> • ICT VI design and build/configuration document. | 1 | Package | NEOC | 40 |

| | | | | | |
|-------|--|---|---------|---------------------|-----|
| RS4-2 | <ul style="list-style-type: none">• Install, Build and Configure NEOC virtual infrastructure cluster on MicroDC nominated for DMZ and external delivery operations.• Rack and stack host Servers, cable and patch to network switches with each host having direct NIC port to each rack switch.• SAN to have their own iSCSI 10GbE to each switch and vLAN group.• DMZ Data virtual distributed network to have own 10GbE pair to each rack switch and vLAN group.• vMotion virtual network to have own 10GbE pair to each rack switch and vLAN group.• Management/Console virtual network to have 10GbE pair if available 1GbE to each rack switch and vLAN group• Install vSphere ESXi on all server nodes.• Configure vCenter with initial user accounts.• Create Datacentre and OPs and DMZ Cluster Groups adding hosts. Enable HA configuration. | 1 | Package | NEOC Server Room | 240 |
|-------|--|---|---------|---------------------|-----|

| Service | Description of Service | Quantity ¹ | Physical Unit | Place where Services shall be performed | Final Completion Date(s) of Services (No. of days from Contract Signing) |
|---------|--|-----------------------|---------------|---|--|
| | <ul style="list-style-type: none"> • Build a Linux and Windows Server VM for testing. • Configure host configurations in vCenter. • Fully test every cable and network configuration with removal of physical cable alternating testing from each switch to validate seamless failover and port NIC, vNICs, groups are configured to recommended VMware setting for HA. • Connect network management interfaces to configured switches and configure devices for SNMP logging to designated system log server. | | | | |

| | | | | | |
|---|---|---|---------|---------------------|-----|
| RS4-3 | <ul style="list-style-type: none"> • Install vSphere Esxi on all server nodes. • Configure vCenter with initial user accounts. • Create Datacentre and OPS and DMZ Cluster Groups adding hosts. Enable HA configuration. • Build a Linux and Windows Server VM for testing. • Configure host configurations in vCenter. • Fully test every cable and network configuration with removal of physical cable alternating testing from each switch to validate seamless failover and port NIC, vNICs, groups are configured to recommended VMware setting for HA. • Connect network management interfaces to configured switches and configure devices for SNMP logging to designated system log server. | 1 | Package | NEOC Server Room | 240 |
| Component 5: Component Workstations Error! Reference source not found. | | | | | |
| RS5-1.1 | On-site unpack, installation and burn-in tests to ensure system is 100% healthy and operations ready for client | 4 | Package | NEOC | 200 |

| Service | Description of Service | Quantity ¹ | Physical Unit | Place where Services shall be performed | Final Completion Date(s) of Services (No. of days from Contract Signing) |
|---------|---|-----------------------|---------------|---|--|
| | <p>acceptance. Configure Forecaster Workstation, monitor displays, UPS (if supplied for that site), peripheral hardware and software with all operating system and supporting software ready for operations. Configure UPS monitoring software on computer system to ensure safe and automated shutdown on low battery. Connect to network LAN and ensure it is connected to correct Windows domain and users can login and authenticate correctly.</p> <p>If requested, join each workstation to the purchaser network, configure printers with specified printer set as default (as nominated) for each workstation. These services are for all workstations supplied at that site.</p> | | | | |

| Service | Description of Service | Quantity¹ | Physical Unit | Place where Services shall be performed | Final Completion Date(s) of Services (No. of days from Contract Signing) |
|----------------|---|-----------------------------|----------------------|--|---|
| RS5-1.2 | <p>On-site unpack, installation and burn-in tests to ensure system is 100% healthy and operations ready for client acceptance. Configure Forecaster Workstation, monitor displays, UPS (if supplied for that site), peripheral hardware and software with all operating system and supporting software ready for operations. Configure UPS monitoring software on computer system to ensure safe and automated shutdown on low battery. Connect to network LAN and ensure it is connected to correct Windows domain and users can login and authenticate correctly.</p> <p>If requested, join each workstation to the purchaser network, configure printers with specified printer set as default (as nominated) for each workstation. These services are for all workstations supplied at that site.</p> | 2 | Package | SMD ESOC | 200 |

| Service | Description of Service | Quantity ¹ | Physical Unit | Place where Services shall be performed | Final Completion Date(s) of Services (No. of days from Contract Signing) |
|---------|---|-----------------------|---------------|---|--|
| RS5-1.3 | <p>On-site unpack, installation and burn-in tests to ensure system is 100% healthy and operations ready for client acceptance. Configure Forecaster Workstation, monitor displays, UPS (if supplied for that site), peripheral hardware and software with all operating system and supporting software ready for operations. Configure UPS monitoring software on computer system to ensure safe and automated shutdown on low battery. Connect to network LAN and ensure it is connected to correct Windows domain and users can login and authenticate correctly.</p> <p>If requested, join each workstation to the purchaser network, configure printers with specified printer set as default (as nominated) for each workstation. These services are for all workstations supplied at that site.</p> | 2 | Package | SMD Seismic Ops Room | 200 |

| Service | Description of Service | Quantity ¹ | Physical Unit | Place where Services shall be performed | Final Completion Date(s) of Services (No. of days from Contract Signing) |
|---------|---|-----------------------|---------------|---|--|
| RS5-2.1 | <p>Scheduled on-site training and instruction course to nominated support staff:</p> <ul style="list-style-type: none"> • detailed technical explanation of workstation image deployment systems; • how to deploy selected image to one, a selection or all workstations; • how to make and maintain different images and keep them current (software updates, patches, etc.) • best practices in ensuring a created image is free from malware, etc. • work through typical scenario that all organization workstations are corrupted with malware. Actions to take, safeguards, how to recover. • Multi-PC image deployment: On-site setup and configuration of distribution hub/deployment server on VM. Test deployment to at least 2 workstations (Windows & Linux images). • Workshop for up to 8 Client IT/Support Staff using NEOC EOC room facilities | 3 | Days | NEOC | 250 |

| Service | Description of Service | Quantity ¹ | Physical Unit | Place where Services shall be performed | Final Completion Date(s) of Services (No. of days from Contract Signing) |
|--|--|-----------------------|---------------|---|--|
| Component 6: Uninterruptible Power Supplies for Workstations and Equipment Racks Error! Reference source not found. | | | | | |
| RS6-1.1 | Unpack and connect UPS to workstation. | 2 | Package | SMD ESOC | 200 |
| RS6-1.2 | Unpack and connect UPS to workstation. | 2 | Package | SMD Seismic Ops Room | 200 |
| RS6-2.1 | Unpack and assemble UPS, installed into rack. Conduct device system tests including stability period charge/discharge testing. Connect network management interfaces to configured switches and configure devices for SNMP logging to designated system log server. | 1 | Package | SMD ESOC | 200 |
| RS6-2.2 | Unpack and assemble UPS, installed into rack. Conduct device system tests including stability period charge/discharge testing. Connect network management interfaces to configured switches and configure devices for SNMP logging to designated system log server. | 1 | Package | SMD Seismic Computer Room | 200 |

| Service | Description of Service | Quantity ¹ | Physical Unit | Place where Services shall be performed | Final Completion Date(s) of Services (No. of days from Contract Signing) |
|---|--|-----------------------|---------------|---|--|
| RS6-2.2 | Unpack and assemble UPS, installed into rack. Conduct device system tests including stability period charge/discharge testing. Connect network management interfaces to configured switches and configure devices for SNMP logging to designated system log server. | 1 | Package | WRD Tatte ICT Computer Room | 200 |
| Component 7: Contractor Project Responsibilities: Management, Training and Operational Support Services Error! Reference source not found. | | | | | |
| RS7-1 | Project Services as per Component 7 Specification | 1 | Team | NEOC | 260 |
| RS7-2 | Training Seminar in MHEW ICT Operation for Senior Managers. Overview providing insight to new installed facilities and capabilities. Key points for Managers and considerations for Operating and On-going funding. Presentation only, no hands-on, real-live use and demonstrations of systems and environment. 2 x 1/2 Day Seminars for Managers, Executives and Stakeholders. | 1 | Days | NEOC | 240 |

| Service | Description of Service | Quantity¹ | Physical Unit | Place where Services shall be performed | Final Completion Date(s) of Services (No. of days from Contract Signing) |
|----------------|--|-----------------------------|----------------------|--|---|
| RS7-3 | Training Courses in Operation in assessing all console management of NEOC Datacentre and Facilities including: MicroDC management and monitoring, Network Switch and Routers, Servers, KVM, SAN, vCenter, smart PDUs, UPS. Total of 4 days Course content broken into 3 separate workshops for 10 Client Staff using NEOC EOC room facilities. | 4 | Days | NEOC | 240 |
| RS7-4 | After full commissioning contractor System Engineer to be available on-site for MNRE ICT, Support staff and SIC acceptance testing, defect resolution and dashboard monitoring system integration of all systems. | 3 | Days | NEOC | 240 |
| RS7-5 | After full commissioning contractor System Engineer to be available on-site for MNRE ICT, Support staff and SIC acceptance testing, defect resolution and dashboard monitoring system integration of all systems. | 1 | Days | SMD | 240 |

| Service | Description of Service | Quantity¹ | Physical Unit | Place where Services shall be performed | Final Completion Date(s) of Services (No. of days from Contract Signing) |
|----------------|---|-----------------------------|----------------------|--|---|
| RS7-6 | After full commissioning contractor System Engineer to be available on-site for MNRE ICT, Support staff and SIC acceptance testing, defect resolution and dashboard monitoring system integration of all systems. | 1 | Days | WRD (Tatte Building) | 240 |
| RS7-4.1 | After full commissioning contractor System Engineer to be available on-site for MNRE ICT, Support staff and SIC acceptance testing, defect resolution and dashboard monitoring system integration of all systems. | 10 | days | NEOC | 240 |
| RS7-4.2 | After full commissioning contractor System Engineer to be available on-site for MNRE ICT, Support staff and SIC acceptance testing, defect resolution and remote monitoring integration of all systems. | 2 | days | SMD | 240 |
| RS7-4.2 | After full commissioning contractor System Engineer to be available on-site for MNRE ICT, Support staff and SIC acceptance testing, defect resolution and remote monitoring integration of all systems. | 2 | days | WRD (Tatte Building) | 240 |

| Service | Description of Service | Quantity¹ | Physical Unit | Place where Services shall be performed | Final Completion Date(s) of Services (No. of days from Contract Signing) |
|----------------|---|-----------------------------|----------------------|--|---|
| | System operational support services, including additional technical support, as necessary, and all parts replacement costs. | | | | Upto five years, commencing from commissioning of the System |

3. Technical Specifications

The Technical Specifications for the Goods and Related Services is listed below and forms part of the Bidding Documents.

An electronic copy of the Technical Specifications for the Goods and Related Services may be issued for the convenience of Bidders and has no status under the Contracts. It is the Bidder's sole responsibility to validate the electronic copy of the Technical Specifications for the Goods and Related Services against the printed hard copy issued for bidding.

- **Background**

Samoa is exposed to a range of hydro-meteorological and geo-hazards, including tropical cyclones and associated storm surges and flooding, earthquakes and tsunamis. Climate change is exacerbating the vulnerabilities through increased frequency and possibly intensity of climate-related events. There is widespread acceptance of the need to strengthen disaster early warning and preparedness, and to mainstream disaster risk and climate change into development planning and financing. The Pacific Resilience Program (PREP) is Phase I of a 'Series of Projects' that will focus on providing technical and management assistance to the project and complement the national investments, particularly in the area of resilient infrastructure in Samoa and other island states in the Pacific.

Component 1 of PREP focuses on early warning and disaster preparedness and aims to strengthen the ability of Samoa to make warning information actionable by those at risk, in order to minimize adverse impacts to vulnerable communities. It will enable people to make informed decisions about what to do to protect themselves from hazards and help emergency services target limited resources to where they are most needed, in order to maximize the impact of their response efforts.

PREP Component 1 includes the following key elements:

- Detection, forecasting and warning of the impact of natural hazards
- Dissemination of timely warnings to the population, including last mile communication
- Strengthening of emergency preparedness and response mechanisms

This would involve the introduction of a multi-hazard impact forecast and warning system, which would build on existing capabilities in meteorological, hydrological and seismological monitoring, forecasting and warning, to establish a fully functioning Multi-Hazard Impact-based Early Warning System (MHEWS) for Samoa. The aim is to strengthen both national and regional early warning systems, creating common approaches to warning services among the participating countries wherever possible.

The General Consultant/System Integrator Early Warning Preparedness project is part of abovementioned Component 1. It will provide comprehensive and integrated assistance to the Government of Samoa to improve the capacity to cope with potential emergencies arising from hydrometeorological and geophysical hazards. This capacity improvement will include the following tasks:

- Institutional and regulatory strengthening, capacity building and implementation support.
- Modernization of the Observation Infrastructure, Data Management Systems, Forecasting and Warning Systems.
- Enhancement of the MHEWS Service Delivery System.

• Summary of Current Situation

An overview of the current ICT infrastructure supporting MHEWS components is shown in Figure 1. The current situation is discussed in more detail for various aspects hereafter.

The core issues with respect to ICT systems for MHEWS in Samoa can be characterised in general as follows:

- Meteorological and hydrological observing systems are quite fragile and dated.
- Limited automated observing network, differing technologies within divisions and across divisions leading to management complexity and business continuity risks.
- ICT network, server and storage which are of different ages and condition. There is no capability to provide uniform ICT management due to the differing operating versions, hardware configurations, and no standardised or uniform IT support. High availability and disaster recovery capability is low to zero placing operations at risk due to multiple points of failure. Of most concern is critical operational ICT infrastructure has failed or operating on equipment that is very old, has no original equipment manufacturer (OEM) vendor support in place and is a single point of failure.

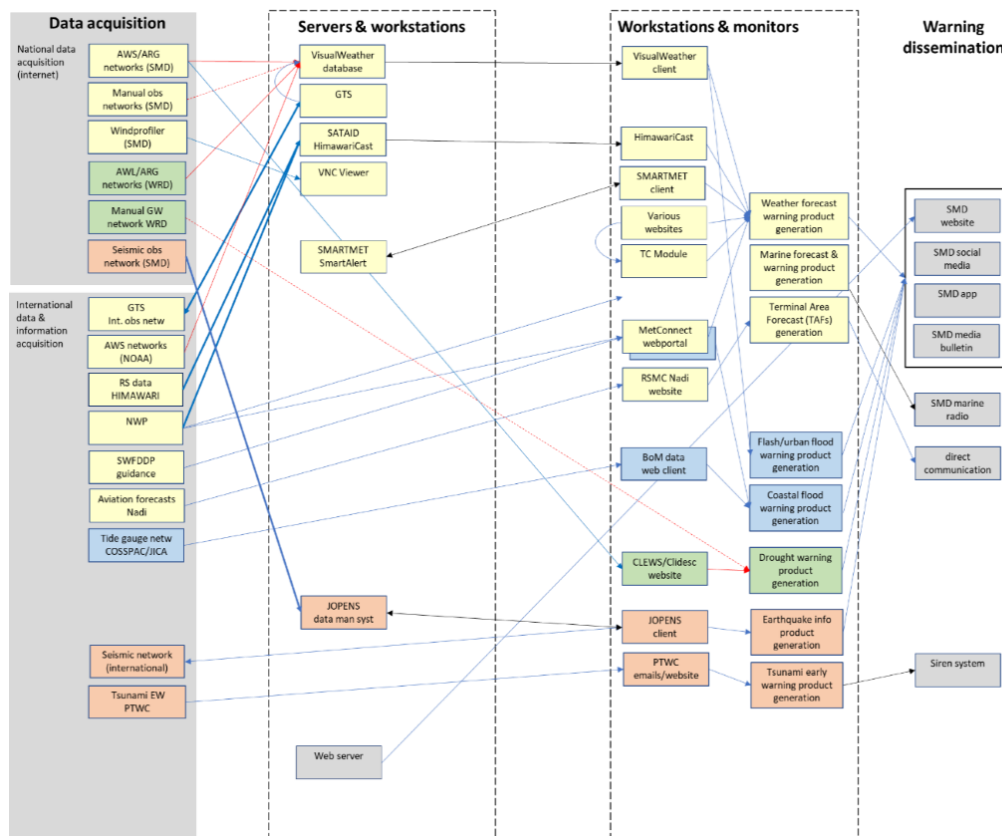


Figure 1: Schematic representation of current component design supporting the MHEWS components in Samoa

- Network architecture and security for both internal and external zones are not robust enough

to ensure stable and uncompromised operation.

- Forecasting, warning and emergency management functions are operated from different locations with no central adequate facility and supporting infrastructure for all agency emergency management.
- Staff availability skilled in ICT with domain experience and an understanding in 24x7 maintenance and support are very limited in numbers

In terms of network and physical systems there is limited processing systems and intranet connectivity as can be seen in figure 2 and figure 3 which is the objective to be addressed by this contract under the PREP project.

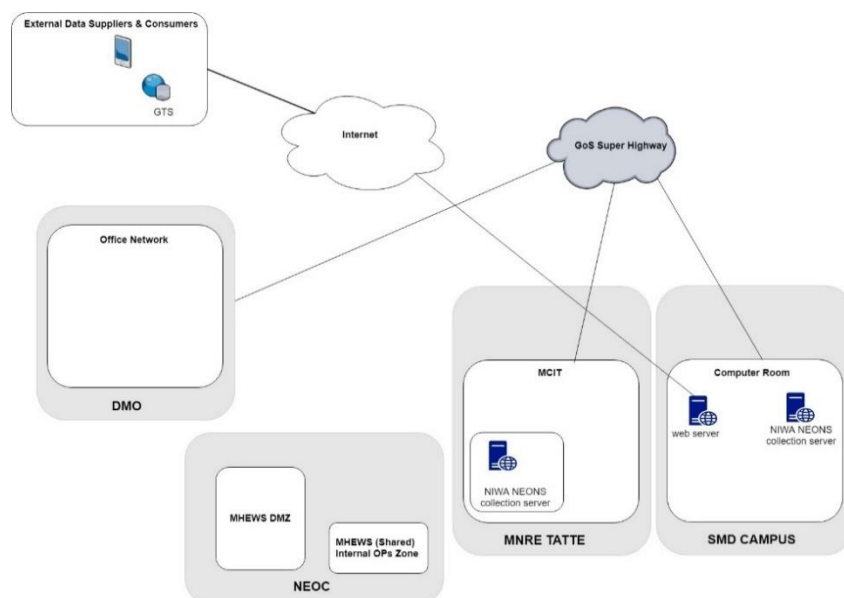


Figure 2: Current Ministry Network Connections between Divisions

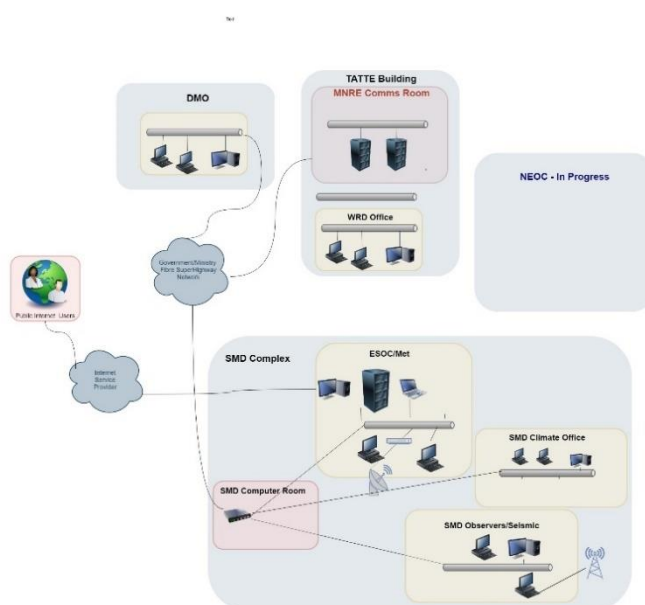


Figure 3: Current Systems Architecture

• Scope of Works

The project focus is to deliver a fully functional and operational NEOC with an Emergency Operations Centre (EOC), primary datacentre to support MHEWS, EOC and DMO operations. The required ICT infrastructure and related services to deliver the core ICT systems for a MHEWS primary datacentre (DC) and upgrade of the Samoa Meteorological Department (SMD) and Water Resources Department (WRD) operations areas have been detailed in the MHEWS design document and has been approved by the Government of Samoa (GoS) to proceed to the procurement stage.

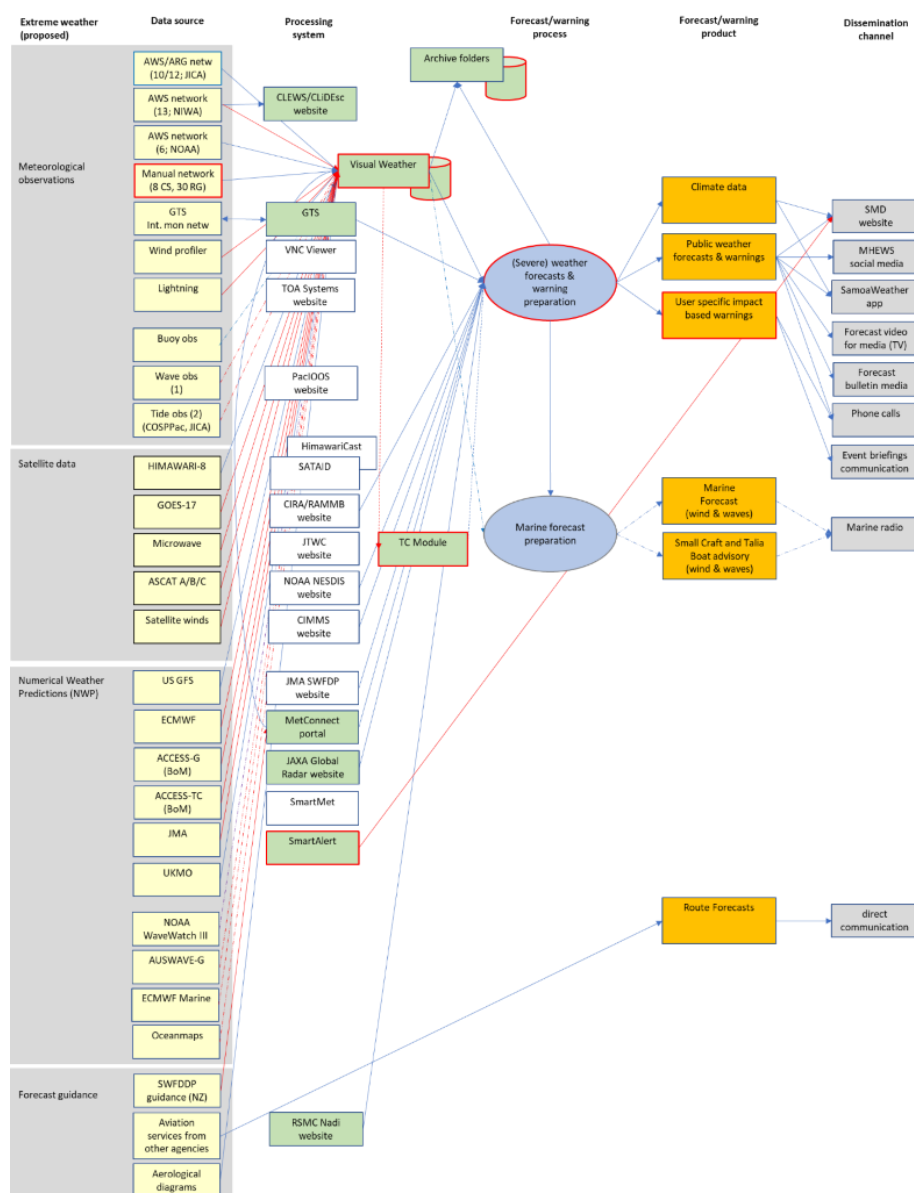


Figure 4: Schematic representation of proposed weather forecasting and warning system for the MHEWS.

Figure 4Error! Reference source not found. shows an overview of the MNRE departments and

intended services and systems that will be implemented as part of the final project. Each of the key operational departments will have their computer room or operations room installed with new operational forecasting performance workstations with multiple monitors, equipment racks, router/firewall edge networks, local area network switches, Network Attached Storage (NAS) to provide data redundancy with simplified management as depicted in Figure 5 **Error! Reference source not found..**

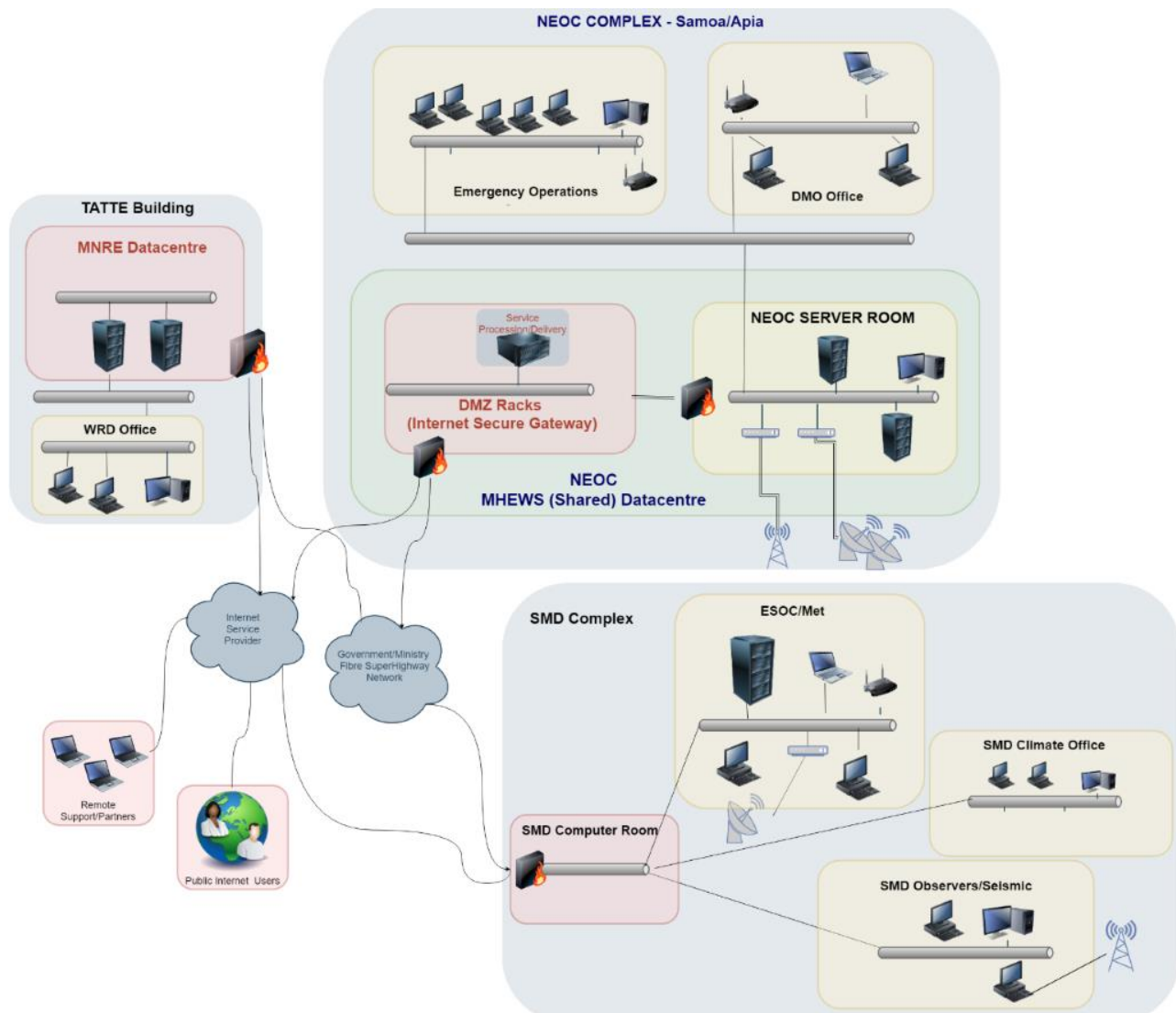


Figure 5: Schematic representation of proposed IT end-state architecture supporting the MHEWS components in Samoa.

A newly built NEOC building has been commissioned and is available to the bid contractor to commence installation immediately on completion of the tender process. The end goal for MHEWS is to facilitate a digital transformation of MNRE operational services relating to Multi-Hazard Warning which will include a NEOC datacentre for MHEWS services as depicted in Figure 5 **Error! Reference source not found..** For now, the focus is to equip the new NEOC facility and implement a MHEWS wide area network (WAN) between NEOC, SMD and WRD sites to ensure operational

data is shared and available to all emergency warning services.

An assessment was conducted of the current server/computer rooms which highlighted vulnerabilities at the SMD and WRD sites. The new NEOC datacentre has been designed to operate during severe weather events and will be the most secure and robust site for operations, for this primary reason the decision has been made to host the MHEWS shared server infrastructure and external hosting servers at NEOC. The physical location of the servers is secondary as this contract is about providing a secure and robust MHEWS connected network for the key operational agencies to operate and access ICT resources including shared observing systems.

This bid specification details the MHEWS ICT procurement of required goods and related services. All ICT goods and related services have been packaged into a single procurement lot. This approach has been adopted so contractor demarcation does not occur, eliminates implementation order dependencies as the project must be managed by a single bidder or Joint Venture (JV) under a lead partner.

As the implementation order of some goods is critically important, the procurement bidder will be required to carefully manage the project to deliver a turn-key fully integrated system of all bid components.

This procurement bid has seven (7) components that are grouped by their category of function:

- Component 1: Technical Specification for Datacenter and Computer Room Facilities**Error! Reference source not found.**
- Component 2: Network WAN and LAN Infrastructure**Error! Reference source not found.**
- Component 3: Storage Infrastructure**Error! Reference source not found.**
- Component 4: Virtual Server Infrastructure (VI)**Error! Reference source not found.**
- Component 5: Forecaster Workstations**Error! Reference source not found.**
- Component 6: Uninterruptible Power Supplies for Workstations and Equipment Racks**Error! Reference source not found.**
- Component 7: Contractor Project Responsibilities: Management, Training and Operational Support Services**Error! Reference source not found.**

Virtual server Infrastructure (VI) providing backend server forecast processing on multiple operating systems within the same shared physical hosts will be required at the NEOC datacentre for MHEWS operations. This bid will focus on delivering a shared ICT infrastructure at NEOC providing a VI capability for all operations via a secure WAN. SMD and WRD will have a site upgrade of its network and data sharing between operational divisions.

These works will include:

- ICT equipment's racks at each site cabled to professional standard;
- Establish a secure and robust MHEWS Wide Area Network (WAN) through installation of VPN firewall routers at each MHEWS site. This WAN will operate over the existing departmental fibre high speed network;
- Implement new managed and highly available network LAN switches at each site that will provide network reliability and centralised ICT management capability;

- Implement Network Attached Storage (NAS) attached to the MHEWS WAN at each site. These NAS devices will have redundant power and disk controllers working in an active-passive manner. This data network will provide the capability, not present now, to share and replicate data between sites in near real-time. This will provide a data redundancy capability and most importantly access to all datasets for decision support at each operations site.
- The base infrastructure delivered through this procurement will provide the essential core for MHEWS to build upon in future projects.
- A virtual server cluster will be implemented at the NEOC datacentre allowing this new facility to become the main site for forecast processing and will also provide a redundant observations collection site designed and implemented with high availability as a key principle.

VI clusters for forecast operations will most likely expand and develop with future projects. If required, this will then allow ICT management from any location, seamless sharing of compute and storage across the Regional Office Branch Office (ROBO) WAN providing full business continuity. In the longer term the Government of Samoa may also wish to consider an external datacentre allowing a hybrid cloud capability to be adopted as part of its eGovernment strategy.

Establishing this core infrastructure platform using industry leading virtual infrastructure hardware and software is critical for the success of MHEWS operations and agility, it will also assist the GoS digital transformation strategy through a technology aligned implementation.

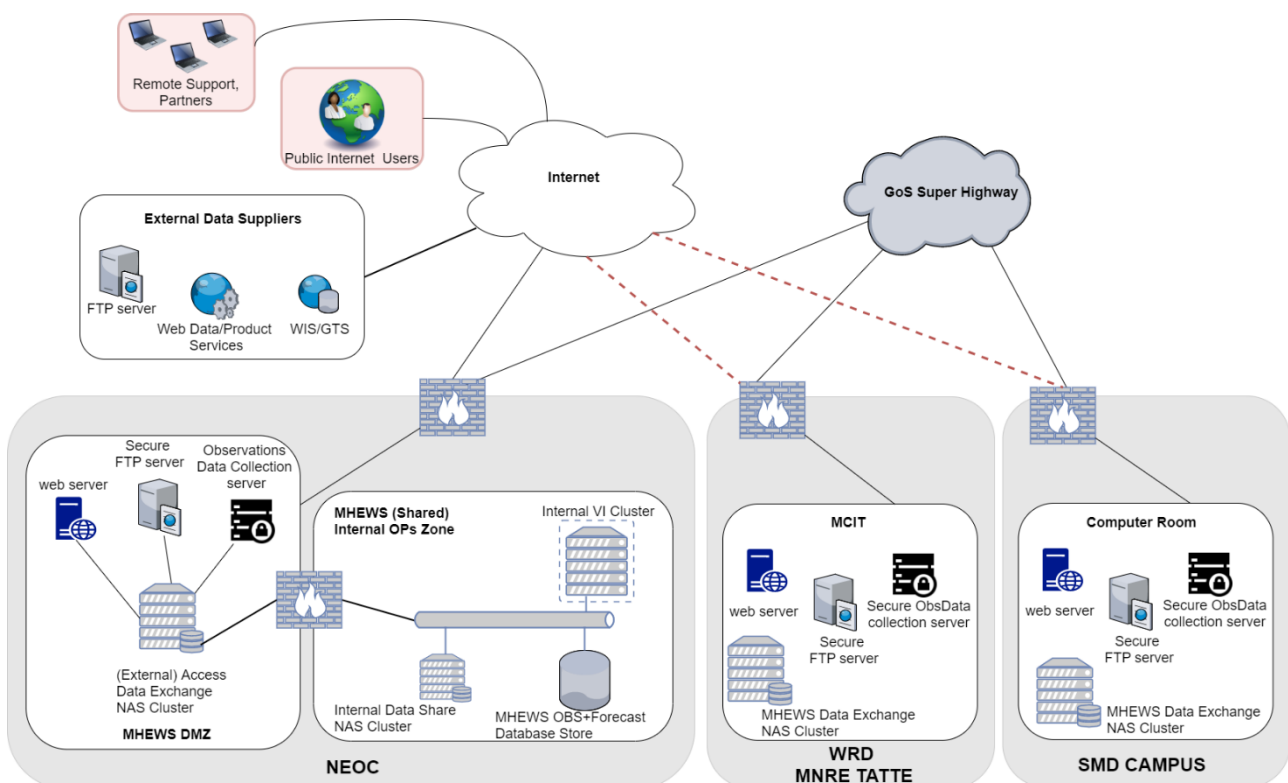


Figure 6: Schematic representation of MHEWS IT architecture for this contract.

The successful bidder is expected,

- to deliver a full turn-key solution through a mix of supplying quality manufacturer goods and related professional services;
- to work with the Purchaser and the MHEWS project System Integrator to finalise the physical design and build plan prior to the on-site install, build, configure, test and commission of the integrated MHEWS ICT data collection, forecasting and delivery ICT platform for emergency and public services;
- to project manage delivery of all the components of this bid ensuring suitably trained and experienced industry professionals are scheduled to deliver the required solution;
- to manage all supply contract relationships to ensure a smooth-running project;
- to provide an on-going customer relationship to ensure the ICT environment meets operational reliability requirements through support and maintenance supply;
- to supply goods and services to assist in the priority ICT supply and fit out of the NEOC building to ensure a resilient MHEWS operations centre capability;
- to upgrade core ICT infrastructure for SMD and WRD and connectivity to NEOC datacentre via MHEWS WAN;
- to ensure connectivity to NEOC operations and departmental data centres and server rooms allowing data transfer and redundancy of critical observations, forecast data and product service delivery.

The preliminary solutions architecture (SA) is provided in Figure 7**Error! Reference source not found.**, this SA will need to be reviewed and finalised by the bidder with the PREP Systems Integrator and Ministry ICT Division. The following factors will influence the final design and build plan and will need to be take into account by the bidding contractor at the start of the project:

- SA fit for bidder proposed ICT devices;
- Virtual Infrastructure architecture and vendor being proposed;
- WAN connections and current state including speed and bandwidth;
- Volume of external data to be collected, shared and replicated over MHEWS WAN;
- Elapsed time between specification and implementation and whether any goods items have become supplier end of life.

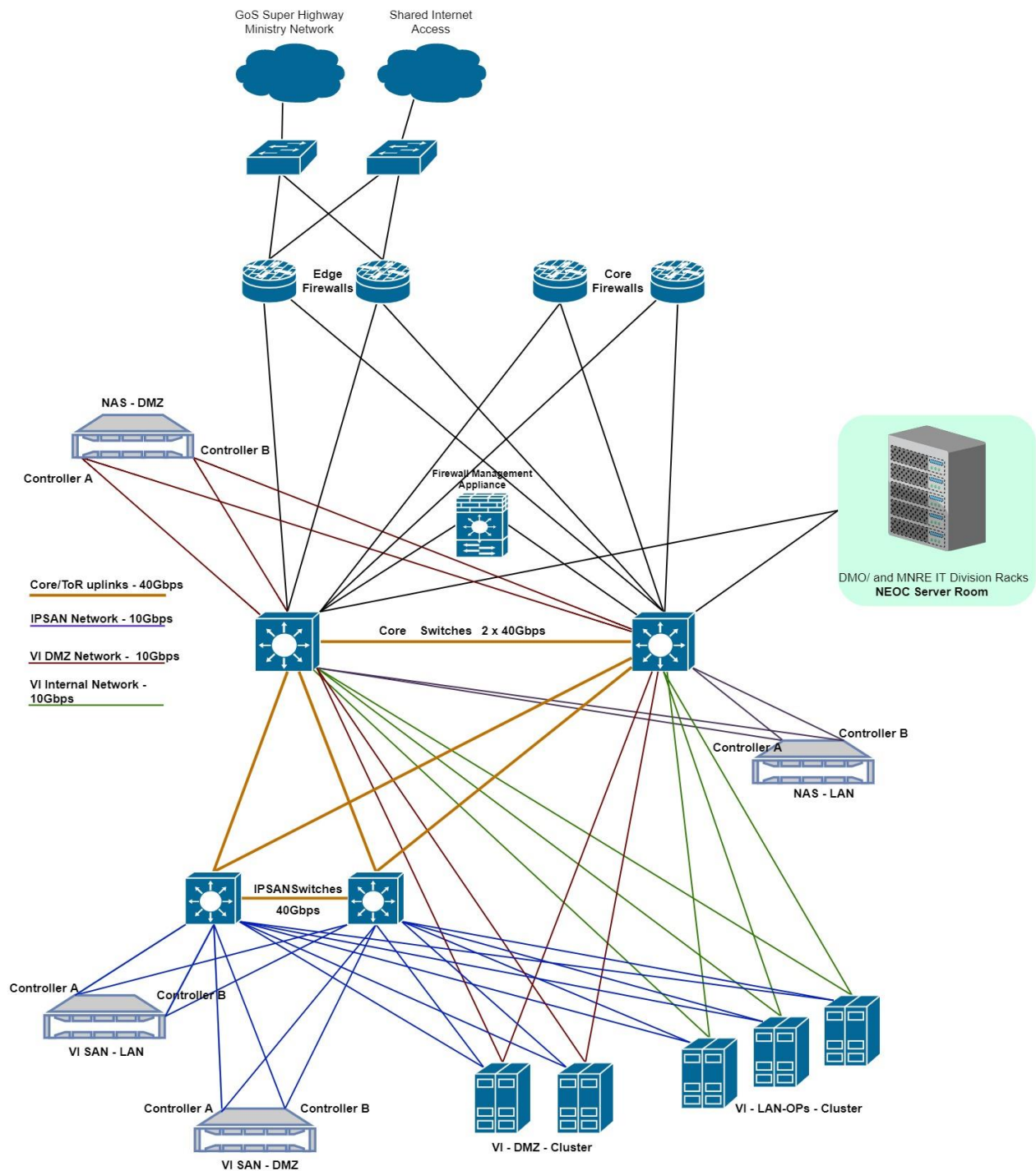


Figure 7: NEOC Datacentre Solutions Architecture

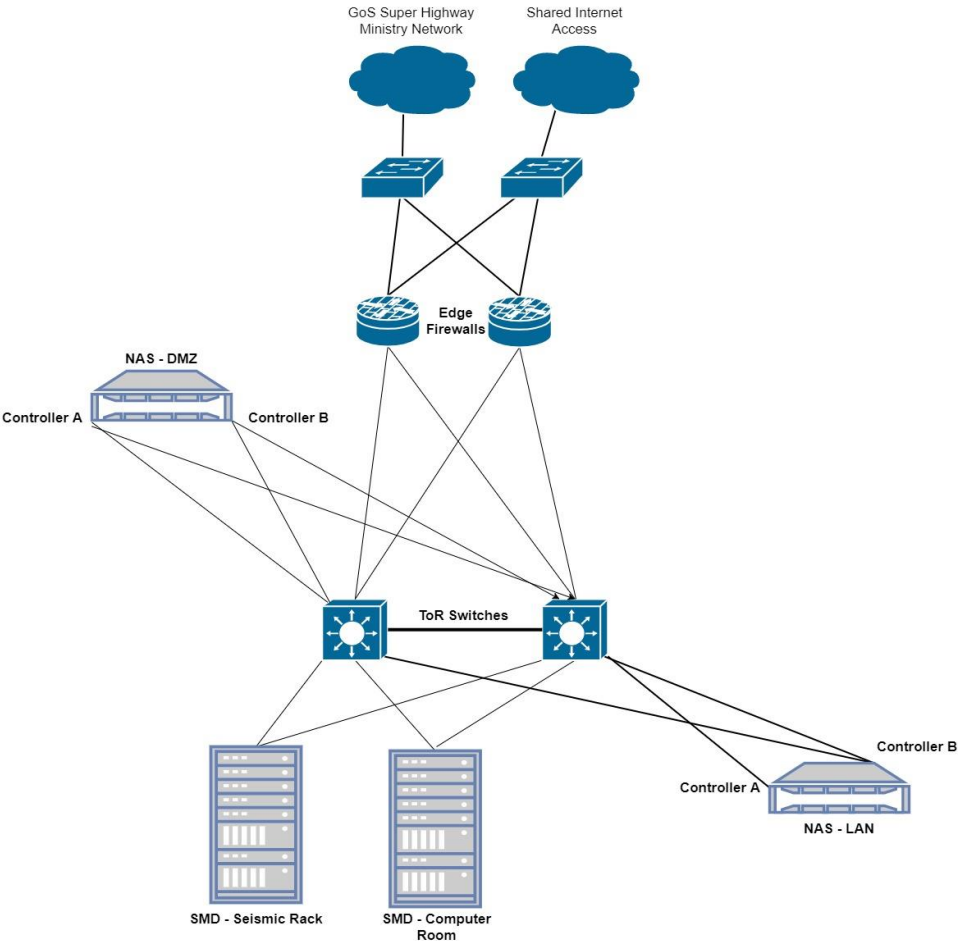


Figure 8: SMD Campus Solutions Architecture

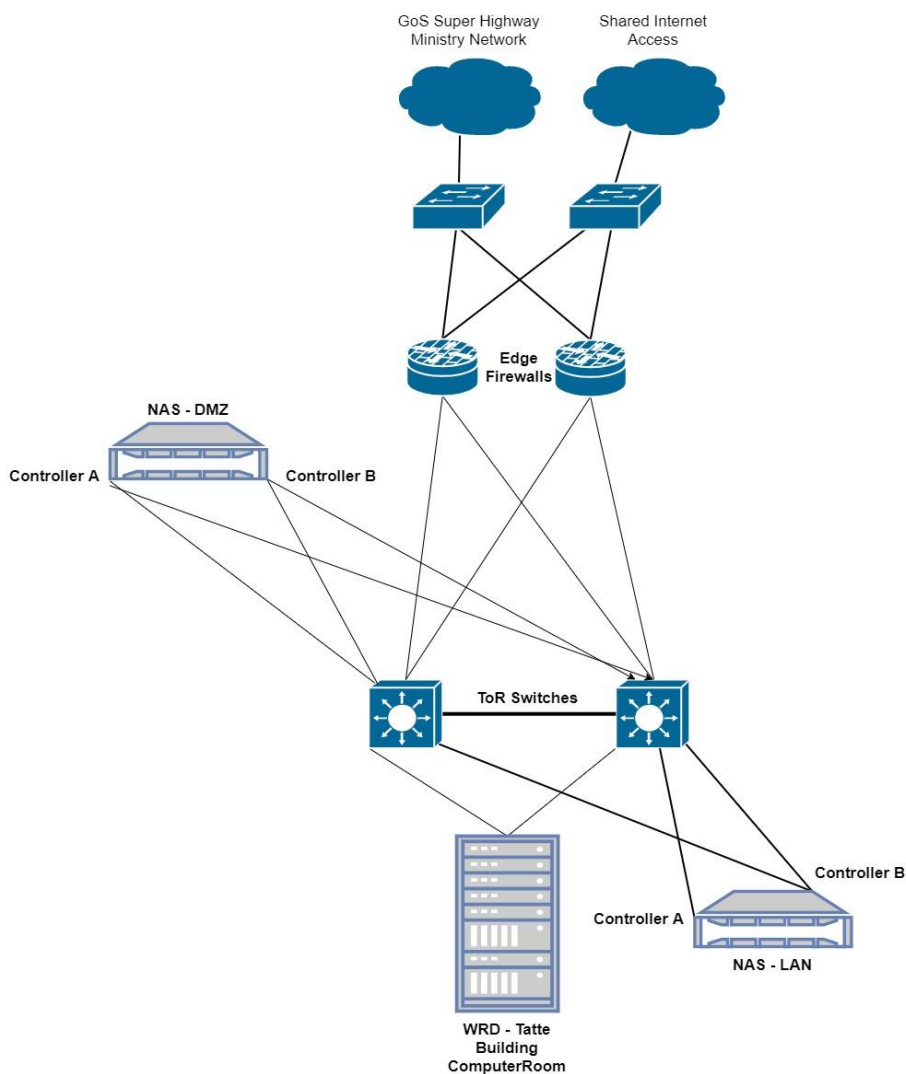


Figure 9: WRD (Ministry Tatte Building) Solutions Architecture

Error! Reference source not found. to Error! Reference source not found. Error! Reference source not found. are pictured to give indicative layouts of equipment and rack layout supplied by this bid for the NEOC, SMD and WRD sites. The rack layouts are based on the components specified in the following sections. However, the goods and related services schedules are to be the guide to determine the actual quantities and requirements, as well, the actual type of equipment, rack sizing, etc. in these the diagrams are for illustrative purposes only.

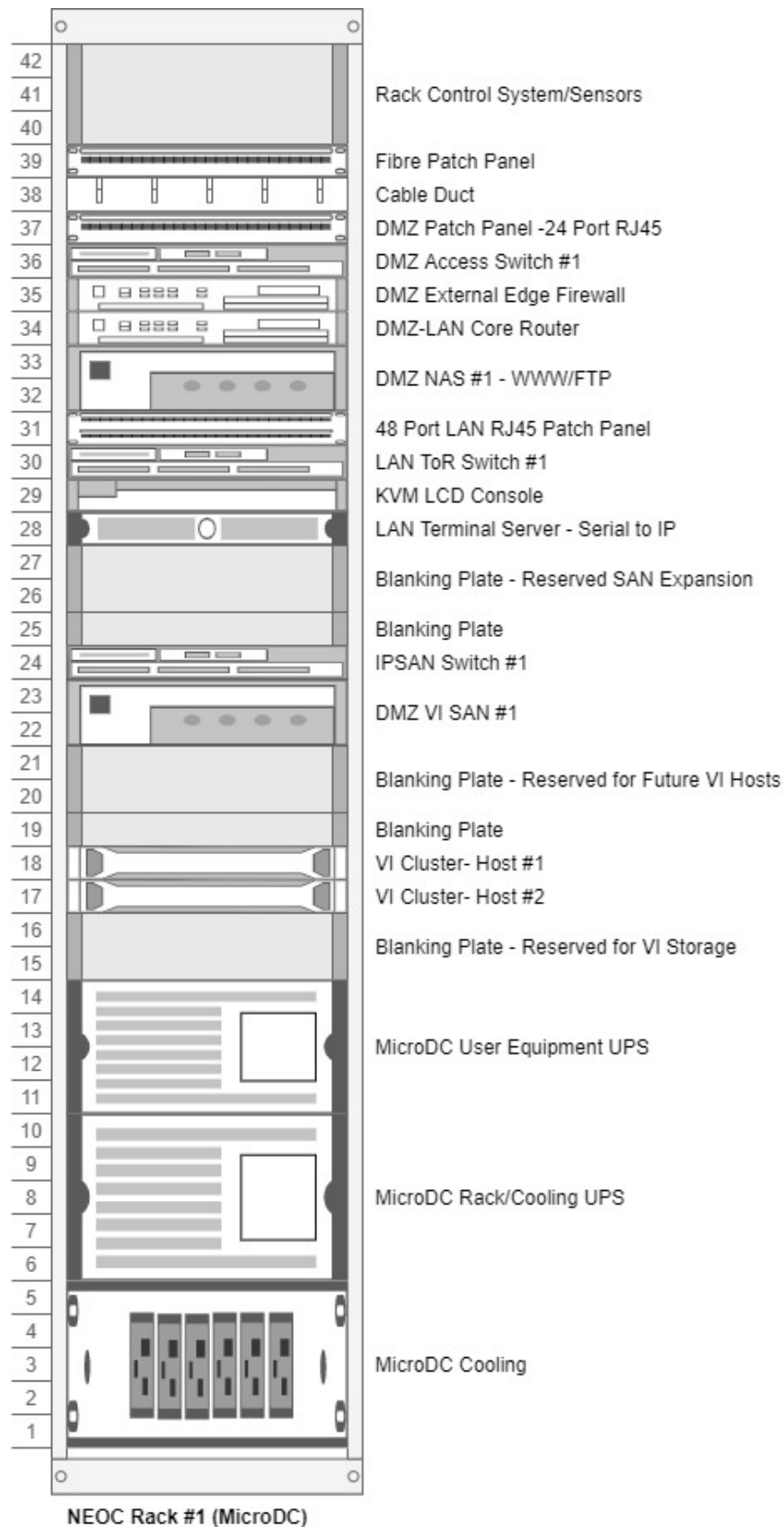


Figure 10: NEOC MicroDC Rack #1 Layout

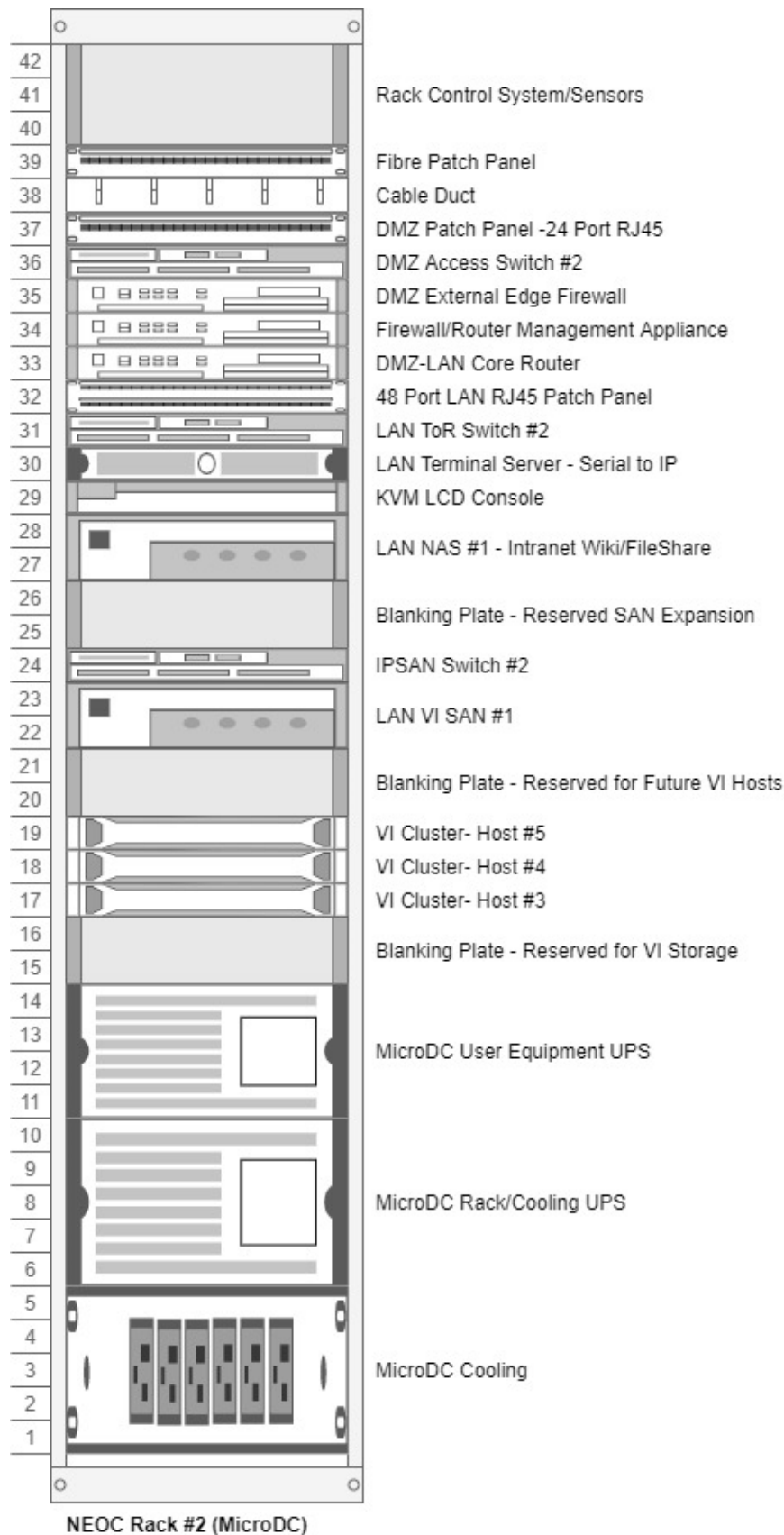


Figure 11: NEOC MicroDC Rack #2 Layout

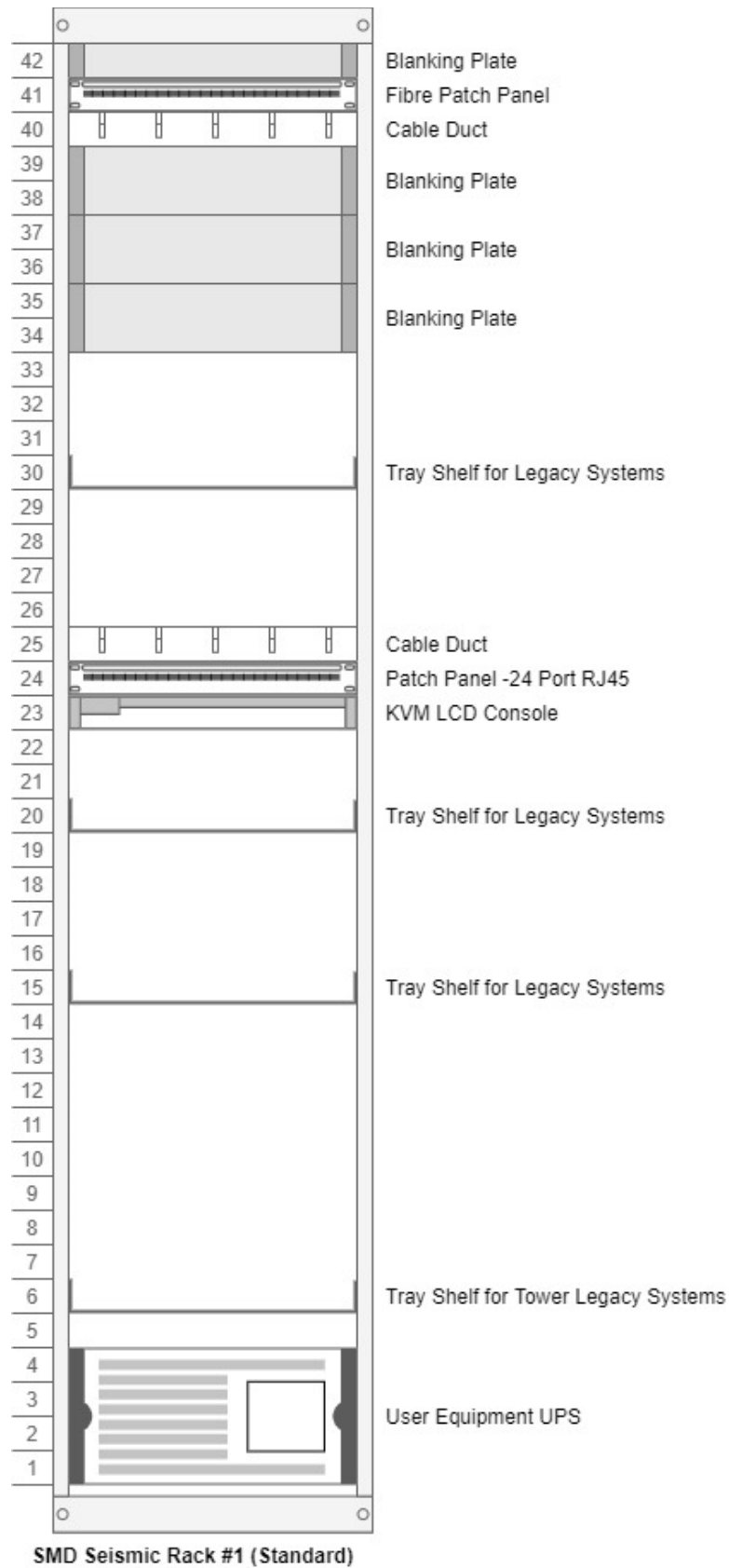


Figure 12: SMD-Seismic Server Room (standard) Rack #1

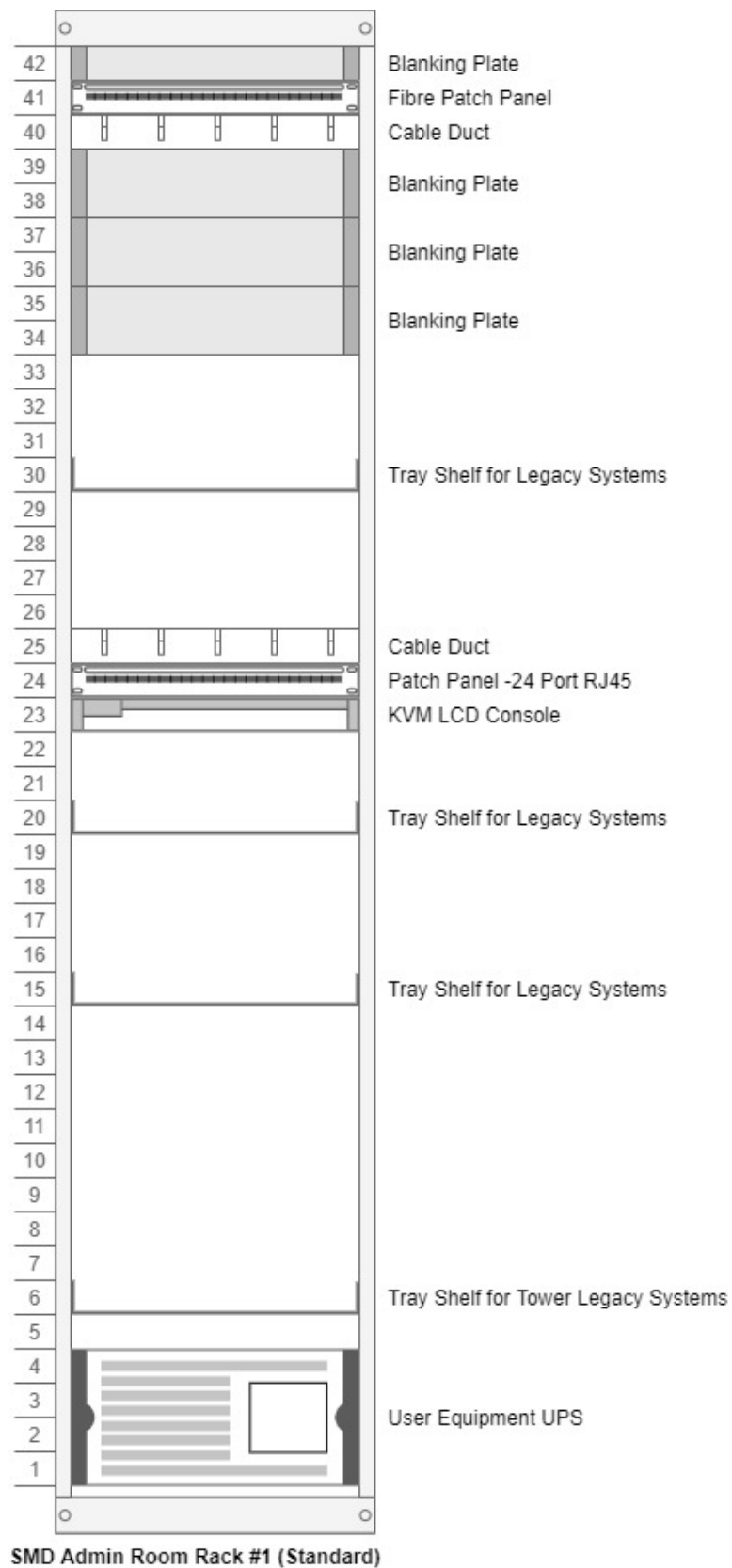


Figure 13: SMD (Admin Building) Server Room (standard) Rack #1

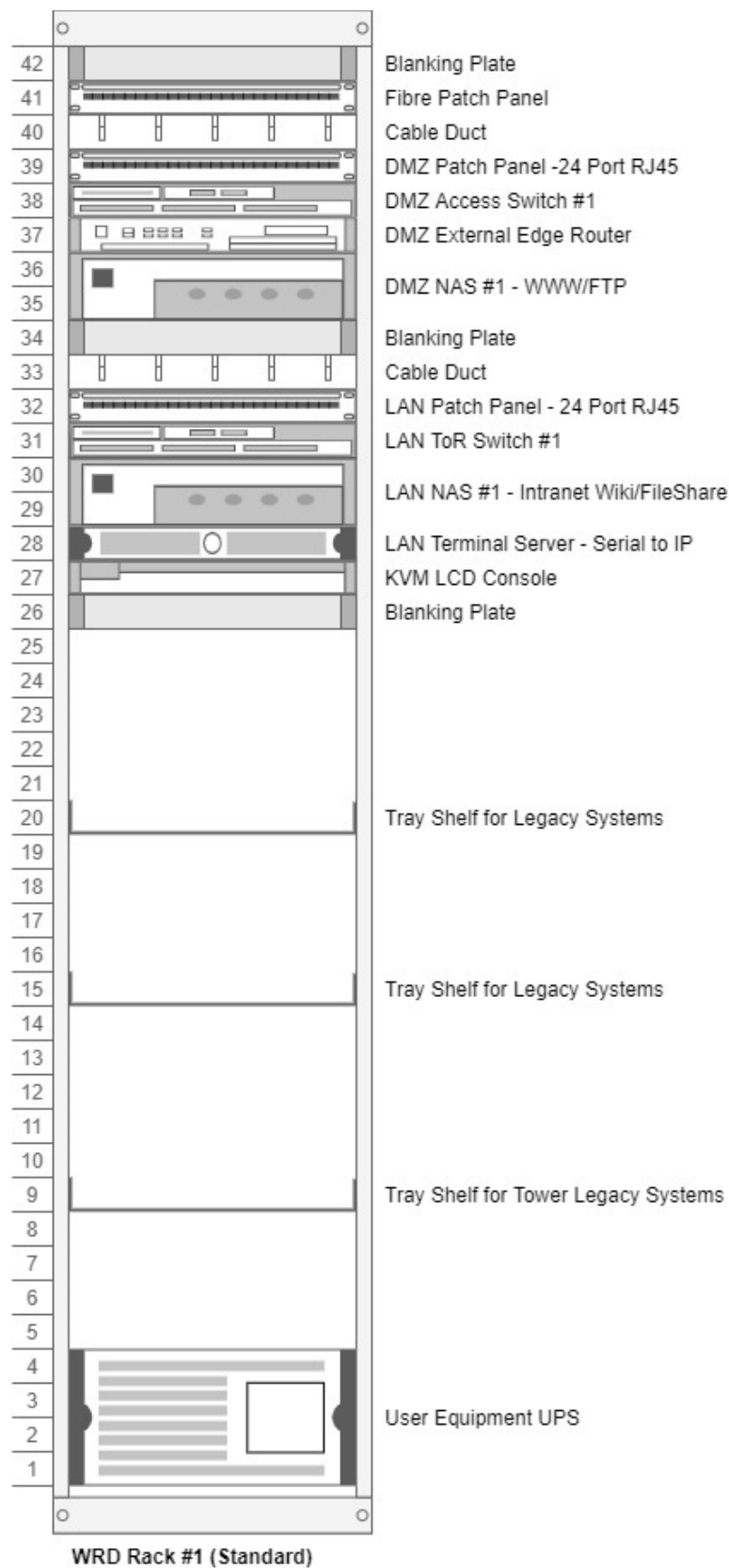


Figure 14: Tatte Building - WRD (standard) Rack #1

- **Specifications for Goods**

The following sections provide the technical specifications for goods and related services for each delivery component. Each item is referenced by an identifier such as “Gn-x.y” where “n” is the component category number, where “x” being the unique goods identifier within the category to be purchased and “y” being the item count/instance (of same type) for purchase and delivery at a location. This identifier will be used for cross referencing in pricing and delivery tables.

Component 1: Technical Specification for Datacentre and Computer Room Facilities

A new combined forecast and emergency management operations centre is being configured at the new NEOC building. This Centre will host the physical server infrastructure for Meteorological and Hydrological forecasting groups together with emergency management during critical events. It will also act as a disaster recovery site for the SMD and WRD departments providing backend ICT infrastructure, replicated data for forecasting operations and forecaster workstations.

This component one (1) specification is for the supply of:

- 19" specialised and standardised equipment racks with smart monitoring of equipment and racks;
- Backup power cabled from the building UPS (if available) to the equipment room racks;
- Backup power cabled from the UPS to the proposed workstation furniture stations;
- UTP data cabled from the cable patch management rack/s;
- Fibre data cable from the cable patch management rack to the equipment room LAN switch with fibre uplink connections to new and existing switches.

The NEOC datacentre (server room) layout as provided by the building contractor is shown in Figure 15 **Error! Reference source not found..** The final layout to be used for installed racks by this bid will require a site survey and is reliant on the bidder to confirm what they specify can feasibly be installed and any works required to allow this to happen. The two intended microDC racks for NEOC will need to be oriented within the NEOC server room to ensure front and rear rack access is clear for equipment. Note that overhead cable trays are installed above the racks on each side of the rooms.

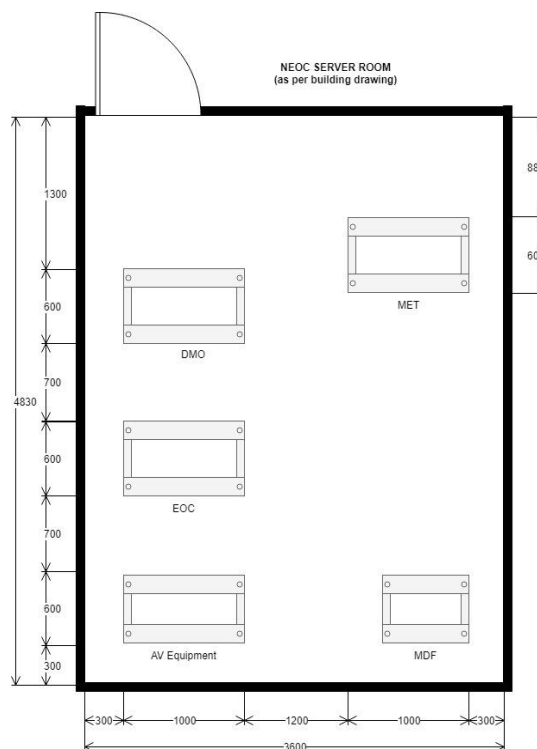


Figure 15: NEOC Server Room (MHEWS Datacentre)

- **Component 1 - Goods Specifications**

G1-1: MicroDC Equipment Racks in 3kVA & 5kVA/6kVA UPS with 3kW Cooling

A pre-fabricated secure turnkey Micro Datacentre (MicroDC) self-contained rack enclosure will provide the core colocation capability for equipment at the NEOC and SMD department computer rooms.

The enclosure is to be self-contained, minimum 42RU up to 47RU with built-in UPS, power distribution, air cooling unit with temperature, humidity, water leakage and smoke sensor monitoring, keypad operated door locks and system management/monitoring front panel display with keypad.

There are a number of suitable such enclosures available in the ICT market, to name a few “Eaton Micro Datacentre – Single Enclosure Integrated Solution for IT Equipment”, “APC/Schneider MicroDC Xpress”, “Vertiv” or equivalent.





- 19” Industry standard equipment up to 47U high, 42U is the minimal acceptable rack height.
- Self-contained 19” rack fitted with built-in UPS and cooling.
- Dimensions: H ~2000mm x 600mm W x minimum 1000mm D
- MUST meet OEM server depth dimension recommendation proposed by bidder in G4.1.
- PUE (full Load): 1.2 (optimal)
- Input Power: AC 220-240V, 50/60Hz +/-5%
- Installation type will be general ground installation
- Security: lockable front and rear door. electronic door control from local panel or remote control.
- Rack is to be fully supplied with front blanking plates in 1RU, 2 RU, 4RU sizes to ensure rack front is fully sealed for air flow efficiency. Adequate combinations and spares are to be supplied to infill when equipment is inserted.
- UPS –
 - Enclosure UPS rating to be supplied as specified in Goods Schedule as either:
 - 3kVA model, or
 - 5kVA/6kVA model.
 - Maximum “User” Equipment Load is to be provided as per chosen model (3kVA or 5kVA/6kVA), UPS capacity rating is to be the available power for user equipment in addition to any UPS power requirements to operate the enclosure subsystems.
 - UPS to be of double on-line conversion type with pure sinusoidal wave output.
 - Air Conditioning: Power by dedicated minimum 3kVA UPS or as rating required by cooling system
 - Input Voltage Range: 176-276 without derating (up to 100-276 with derating)
 - Input Frequency Range: 40-70Hz, 50/60Hz auto selection
 - Power Selection: 1.0
 - Installation: Rackmount, 2RMU or up to 4RMU depending on the UPS capacity requested.
- Power Distribution System
 - Installation Dimensions: Rack mount, 3RMU
 - Power Distribution: Mains input and UPS output, lightning protection and maintenance bypass
 - PDU: Managed 0RU, plugs to suit Internal Brand Servers and switches, combination minimum 1 x C20 16A, 14 x C13, 4 x C19 Outlets
- Cooling and Airflow Management System:
 - Total Cooling Capacity: minimum 3.0kW
 - A/C Total Air Volume: minimum 580m³/h
 - A/C Power Supply (Voltage): 220 – 240 VAC +/- 5%
 - A/C Installation: Rack-mountable, bottom of the enclosure interior, 5RMU
 - Environmentally friendly refrigerant
- Enclosure Subsystem:
 - Load Rating: 1500kg

- User Available equipment rack space, minimum of 25 RMU
- Internal Lighting: Standard – rear mounted
- Colour: Black
- Front Door: Solid steel door
- Rear Door: Double steel Door (solid)
- Monitoring System:
 - Host monitoring: Rack Mount, 1U Height
 - Monitoring interface: minimum 7-inch Colour Touch Screen
 - Remote Monitoring: Web Page Integrated Monitoring Software
 - Content: System Power, Cooling, Smoke, Flood, Door Status
 - Sensors: Flood (1), Temperature and Humidity (1), Smoke (1), Doors Closure (2).

Environmental Operating Conditions:

- Temperature range:
 - Non-operating: 0 to 45 degrees Celsius +/- 5% tolerance
 - Operating: 10 to 45 degrees Celsius +/- 5% tolerance

Operating Systems Compatibility:

- Monitoring system, UPS and all software is to be supplied on DVD with installation software and documentation. Access to monitoring system and receiving of alarms to operate from MS-Windows version 10 or later and preferred Linux distributions Red-Hat Enterprise Linux (RHEL), Ubuntu Linux and Centos Linux.

Warranty and Support:

- Minimum 5-year (5/5/5 - material/labour/onsite) Warranty
- Operating continuously on a 24x7 basis will not void the warranty

G1-2: 19" 47RU ICT Equipment Server Rack

This item is an industry standard server rack with width and depth to allow for broad range of large servers and network equipment. Relocation and stacking of legacy computer workstations and servers will also be required with supplied fixed and sliding trays specified elsewhere.

Equipment Rack Specification:

- Fully enclosed 19" standard industry equipment rack
- Equipment rack should be 42RU to 47RU x 800mm x minimum 1000mm (height, width, depth). Rack Unit height to match the RU height of the MicroDC supplied.
- MUST meet OEM server depth dimension recommendation proposed by bidder in G4.1.

- Black baked anodized finish, hard wearing
- Lockable same keyed front and rear door, four (4) keys to be supplied.
- Each Rack Key is not to be able to have unlock other supplied racks., each rack to have unique key.
- Metal mesh doors for air follow through.
- Racks to be set-up identically in terms of power distribution, cable routing, earthing and general structure.
- Standard power distribution fitments shall be required.
- Racks secured to the floor.
- Racks to be clearly labelled /numbered.
- All racks housing equipment to be electrically bonded with a common copper earth bar running between all equipment racks.
- Each equipment rack shall have an individual copper earth bar installed in the rack.
- Each equipment rack to have Electrostatic Discharge (ESD) points and straps.
- Rack is to be fully supplied with front blanking plates in 1RU, 2 RU, 4RU sizes to ensure rack front is fully sealed for air flow efficiency. Adequate combinations and spares are to be supplied to infill when equipment is inserted.

Environmental Operating Conditions:

- Temperature range:
 - Non-operating: 0 to 45 degrees Celsius +/- 5% tolerance
 - Operating: 10 to 45 degrees Celsius +/- 5% tolerance

Warranty and Support:

- Minimum 5-year (5/5/5 - material/labour/onsite) Warranty
- Operating continuously on a 24x7 basis will not void the warranty

G1-3: 19" Equipment Rack – Vertical Smart Power Distribution Unit (PDU)

Input Power

- Input power to be single phase Voltage 220 – 240 VAC +/- 5%
- Switched PDU / Power Distribution Unit with 230V output.
- Frequency Compatibility 50 / 60 Hz
- Smart PDU capable of monitoring power consumption, voltage and total current with automated breaker overload outlet cut off and alarming
- Sensor monitoring for temperature, humidity and door status (Open/Close).
- Rated for an average power consumption of 5kW and peak power of 10kW.
- 10kW Switched 380/400V input 220/230V output PDU with built-in web/network interface
- 0U, 70 inch / 178cm vertical form factor
- Outlet Type IEC-C13, IEC-C19

Output Power

- Minimum 20 switched 220-240V outlets
- Output Receptacles minimum (16) C13; (4) C19 Output Nominal Voltage Single phase 240V

Features

- Network connection for remotely monitoring output power consumption per-phase or per-receptacle.
- PDU to support connection to another PDU for cascading redundancy and monitoring
- PDU to support minimum two network ports for connection two different physical or VLAN networks for separate network access.
- Monitoring and alerting capability
- Interface to support remote control and custom notification of user-specified conditions via email, secure web, SNMP, Telnet or SSH interface.
- Network interface provides PDU control and data regarding input voltage and load levels per-outlet, per-breaker and per-phase
- Built-in local digital display and remote web/network interface reports detailed voltage, amperage and kilowatt output values per outlet, per breaker and per phase with additional reporting options for power unbalance percentage, IP address
- Firmware upgrade ability supports future product enhancements
- Supports HTTP, HTTPS, SMTP, SNMPv1, SNMPv2, SNMPv3, Telnet, SSH, FTP, DHCP, BootP, NTP protocols
- PDU to be supplied with all mounting brackets, hardware, screws to allow full length vertical mounting as power rail in 19" rack enclosure.

ENVIRONMENTAL

- Temperature range:
 - Non-operating: 0 to 45 degrees Celsius +/- 5% tolerance
 - Operating: 10 to 45 degrees Celsius +/- 5% tolerance
- Relative Humidity 5 to 90% non-condensing

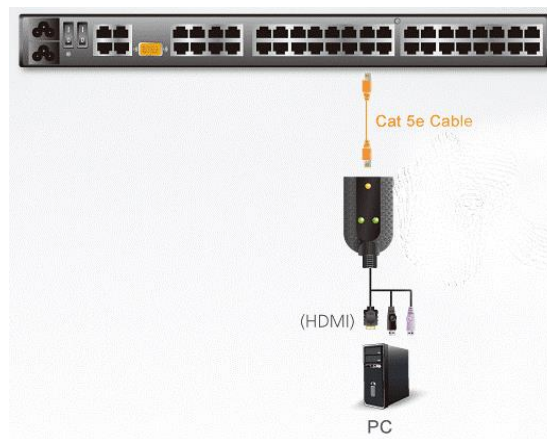
Warranty and Support:

- Minimum 5-year (5/5/5 - material/labour/onsite) Warranty
- Operating continuously on a 24x7 basis will not void the warranty

G1-4: 19" Rack Mount–KVM LCD Console with embedded Controller over IP – 16 Ports

G1-5: 19" Rack Mount–KVM LCD Console with embedded Controller over IP – 8 Ports

Integrated LCD console with racks slide and embedded KVM controller over IP with 8 or 16 device port controller.



LCD UNIT

- Integrated LCD with integrated keyboard and touch mouse
- Support standard 19" Rack mounting supplied with all hardware for fixing
- Pull out (slide) and fold down console
- Monitor size 19" LED-Backlit
- KVM drawer without controller, KVM controller supplied separately and to be fully compatible for connection.
- 16:9 screen aspect ratio, resolution support up to 1920x1080@60Hz
- Support for any connected device type regardless of operating system including Microsoft Windows and Linux operating systems.
-
- USB v2.0 pass thru port accessible to user at front for connection to external devices

- Minimum contrast ratio: 650:1
- Minimum Brightness: 300 nits
- Must be same brand and directly compatible to supplied KVM port over IP controller.
- To be supplied with mounting rails and all hardware necessary for rack installation

PORT CONTROLLER

- Mature Technology KVM over IP switch.
- Vendor to specify what integration is available to other system management suite to allow Enterprise single pane of glass management.
- Controller to be supplied with support for two (2) licenced concurrent remote over IP users and 1 local direct user
- KVM to provide support for dual power.
- KVM controller to not affect server running state in any way if KVM unit power fails.
- Control for either 16 or 8 physical hardware hosts based on selected model in goods schedule G1-4 or G1-5.
- Connection to hardware is to be independent of operating system.
- Controller to support the specified model minimum direct ports in single controller without cascading of controllers.
- Ability to cascade additional KVM port controllers' hubs allowing single point of management and attached devices. KVM controllers with or without LCD console must be brand compatible, be able to cascade and integrate together to support single point of management and dashboard view.
- Provide local console and remote over IP access for users to monitor and access their entire data centre over a network.
- Ability to add additional remote concurrent users as required.
- Multiple users can share a concurrent session
- Provides comprehensive logging of user access, system changes, etc.
- Authenticates users from existing accounts by integrating with industry-standards, minimum of Microsoft Active Directory and open standards LDAP server.
- Username and password protection
- User profiles – the ability to add user rights at the port level
- Exit macros to log out each user when a remote session window is closed
- KVM controller port to be physically connected to physical server/device keyboard, video and mouse ports without modification.
- To support out-of-band access with external modem support for BIOS level troubleshooting when the network is down.
- KVM controller to have dual on-board NICs and dual power supplies, to provide reliability and to ensure 24/7 availability of remote access to all servers.
- Digital KVM over IP solution (also known as IP KVM switches or digital KVM) to provide secure bios level access and control of servers and network devices utilizing a standard internet browser via the network.
- Digital KVM controller to be able to operate as local console when connected to will only require power and connection to LAN IP port for operation.

- Digital KVM controller to have ability to operate when connected to only direct cabled endpoint devices with no IP connection,
- Connectivity to KVM-RACK-Unit for local direct console access without need for IP (LAN) access to server
- Secure and encrypted remote access to KVM controller before access to individual KVM server ports is granted.
- BIOS level access to physical server/devices.
- Warm reboot ability of connected client server/device.
- Cold reboot ability of connected client server/device.
- Encryption of data streaming over the internet
- Advanced FPGA graphics processor – with a Full HD resolutions of 1920 x 1200
- FIPS 140-2 with level 1 security standards to provide faster virtual media transmissions.
- Selectable encryption modes to support specific security policies
- Performs operating system patches
- Provides the ability to boot servers from a remote media source
- Digital KVM to support SNMP protocol for logging of device status
- End-Device port cables to be small adapter for keyboard, video and mouse to a CAT5e or CAT6 RJ45 socket. Cable from device port adapter to controller is via standard UTP CAT5e or CAT6 cable (LAN port not required).
- Digital KVM controller to be connected to LAN network access switch by a single CAT6 or CAT6A UTP network cable.
- Digital KVM accessible over IP network via standard Internet browser with support for minimum of Microsoft Internet Explorer and Edge, Chrome, Mozilla Firefox and Safari.
- No software, agents or driver software to be required on connected physical server/device.
- To be supplied with mounting rails and all hardware necessary for rack installation

INPUT POWER

- Input Voltage: AC 220-240V 50/60Hz autodetect. with minimum of +/-5% tolerance variation
- Power receptable suited for purchaser country standard power socket

ENVIRONMENTAL

- Temperature range:
 - Non-operating: 0 to 45 degrees Celsius +/- 5% tolerance
 - Operating: 10 to 45 degrees Celsius +/- 5% tolerance
- Relative Humidity 5 to 90% non-condensing

Warranty and Support:

- Minimum 5-year (5/5/5 - material/labour/onsite) warranty and support

- Operating continuously on a 24x7 basis will not void the warranty
- If licences are required, they are to be perpetual or if subscription, must be provided for 5 years warranty and support subscription and not require an ongoing licence fee.

G1-6: 19" Rack Mount KVM – Cable Kit-VGA/PS-2

- KVM cable kit to link Computer System with KVM controller
- Brand compatible and suited for use with G1-4 and G1-5 controllers.
- To allow end-device system VGA video with PS-2 mouse and keyboard plugs to RJ45 adapter KVM controller.

**G1-7: 19" Rack Mount KVM Cable Kit-DVI-D/USB**

- KVM cable kit to link Computer System with KVM controller brand compatible and suited for use with G1-4 and G1-5 controllers.
- To allow System DVI video with USB plug for mouse and keyboard to KVM controller.

**G1-8: 19" Rack Mount KVM – Cable Kit-HDMI/USB**

- KVM cable kit to link Computer System with KVM controller brand compatible and suited for use with G1-4 and G1-5 controllers.
- To allow System HDMI video output with audio and USB keyboard and mouse to KVM controller.

**G1-9: 19" Rack Mount KVM – Cable Kit-DisplayPort/USB**

- KVM cable kit to link Computer System with KVM controller brand compatible and suited for use with G1-4 and G1-5 controllers.
- To allow System DisplayPort video output with audio and USB keyboard and mouse to KVM controller.

**G1-10: 19" Rack Mount KVM –Controller Cascade Cable 5metre**

- KVM cable to join (cascade) KVM controllers and LCD/controller units together for single point of management.

G1-11: 19" Rack Accessories – Rack Screws and Nuts

- Rack mounting hardware, Rack Cage M6 Nuts with Screws and washes minimum of 50 sets per bag.

G1-12: 19" Rack Accessories -Fixed Rack Tray

- 1RU 19" fixed tray with dimensions: black powder coated steel finish,
- Mounts to Post flush
- Weight Capacity: minimum (~45 kgs) up to 100kg
- Shelf depth: 1000mm, 800mm wide.
- Must fit square, round, threaded holes rack mounting
- Include 4 sets of cage nuts and screws



Example of Rack Fixed Tray with adjustable depth mount

G1-13: 19" Rack Accessories -Sliding Tray Shelf

- 1RU tray ball bearing slide for mounting computers or other equipment that needs to be accessed easily.
- The slides shall have ball bearing runners for smooth operation and will take a load of minimum of 20kg.
- Includes set of mounting screws/washers/etc.
- Must fit square, round, threaded holes rack mounting



Example of Rack Fixed Tray with adjustable depth mount

G1-14: 19" Rack Accessories - 3RU Rack mounted drawer

- 3 to 4 rack unit high sliding rack mounted drawer with a black powder coated steel finish.
- Includes set of mounting screws/washers/etc.
- Must fit square, round, threaded holes rack mounting



Example of 3RU Rack mounted drawer

G1-15: 19" Rack Accessories - 2RU VERTICAL Mount Cable Management Rail

Cable management – 2RU VERTICAL Mount Cable Management Rail with 47 slots for organising patch cords and maintain the required bend radius. Tool-less mounting fit. Plastic slide cover.



Example of 2RU Vertical Cable Management rail 47 slot

G1-16: 19" Rack Accessories - 2RU horizontal high-density guide

- Cable management – 2RU horizontal high-density guide.
- Wide plastic T-finger design to support high density cable routing.
- Large cable pass-through holes.
- Removable hinged cover
- To be supplied with mounting rails and all hardware necessary for rack installation



Example of 2RU Horizontal High-Density Guide

G1-17: 19" Rack Accessories - – Cable management – 1RU horizontal D-Ring Plastic.

- Cable management – 1RU horizontal D-Ring Plastic.
- To be supplied with mounting rails and all hardware necessary for rack installation



Example of 1RU Horizontal High-Density Guide

G1-18: 19" Rack Accessories - – Cable management – 2RU horizontal D-Ring Plastic.

- Cable management – 2RU horizontal D-Ring Plastic.
- To be supplied with mounting rails and all hardware necessary for rack installation



Example of 2RU Horizontal High-Density Guide

G1-19: 19" Rack Accessories – Cable Strap Blue/Black/Red/Yellow

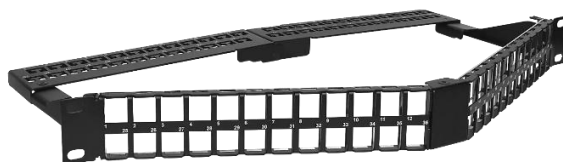
- Cable management – Hook and Loop fastener fabric, strap cut to length, can be removed and adjusted as required. Roll 30metre x 15mm, Blue/Black/Red/Yellow



Example of Cable Strap

G1-20: 19" Rack Accessories – 48 Port Angled 'V' Style Unloaded Patch Panel

- 48 Port Angled Patch Panel suitable for routing cables into a vertical cable manager,
- Supply as empty (unloaded) patch panel
- Support snap in Cat5e, Cat6 and Cat 6A keystone jacks or couplers.
- Ability to label
- To fits standard 19-inch racks and cabinets
- To be supplied with mounting rails and all hardware necessary for rack installation

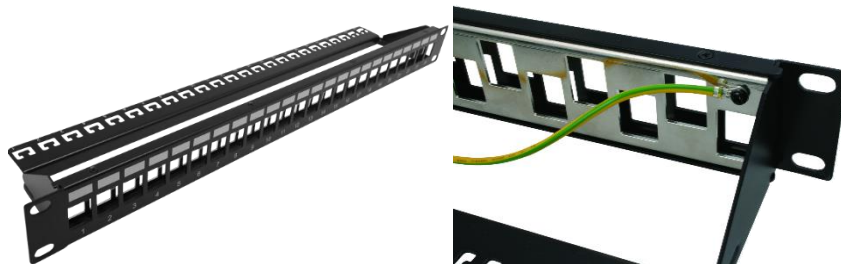


Example of 48 Port Angled (V) Patch Panel unloaded

G1-21: 19" Rack Accessories – 1RU 24 Port Unloaded Patch Panel

- 1RU 24 PORT FTP PATCH PANEL - UNLOADED WITH SUPPORT BAR
- 24 Port Unloaded FTP Patch Panel to support snap in of Cat5e, Cat6 and Cat 6A keystone jacks or couplers.
- Support for shielded cable solutions.
- Fits all industry standard 19-inch racks and cabinets
- To support Fibre Keystone inserts for LC and SC cables

- To be supplied with mounting rails and all hardware necessary for rack installation



Example of 1RU 24 Port Patch Panel unloaded

G1-22: 19" Rack Accessories - CAT6 UTP RJ45 SNAP-IN KEYSTONE COUPLER

- CAT6 UTP RJ45 SNAP-IN KEYSTONE COUPLER.
- Supplied in minimum packs of 10
- Cat-6 Unshielded Snap In coupler to be used with Keystone patch panel.
- Shall have 1-1 wiring configuration and compatible with both T568A and T568B wiring schemes.
- Support ready-made Cat-5E, Cat-6, Cat-6A patch leads.
- Colour: Black
- Socket: RJ45
- Housing: ABS plastic
- Jack insertion life >750 mating cycles
- Operating temperature: -40°C to +60°C
- Contact: Phosphor bronze with 50μ gold plating



Example of CAT6/CAT6a snap in keystone Coupler

G1-23: 19" Rack Accessories - CAT 6 RJ45 Keystone Jack with Universal Punch Termination

- CAT 6 RJ45 KEYSTONE JACK. PUSH DUST COVER. UNIVERSAL TERMINATION (110/KATT): 180 DEG.
- CAT6 Keystone Jack to support being terminated using either a KATT or 110 style punch down tool.
- Supplied in minimum packs of 10
- Push dust cover

- Jack to fit Angled 'V' Style Patch Panel
- Support combined T568A & T568B colour coding



Example of Keystone CAT6 RJ45 jack with punch down termination

G1-24: 19" Rack Accessories - Keystone F-Connector

- Keystone F-Connector - Coaxial threaded F-connector as used for Digital TV and by Cable-TV or Sat-TV connections.
- Jack to fit Angled 'V' Style Patch Panel
- Supplied as Bag Quantity of 10 keystone Inserts



Example of Keystone Coaxial threaded F-Connector

G1-25: 19" Rack Accessories - KEYSTONE Blanking Inserts BLACK

- KEYSTONE Blanking Inserts
- Colour: BLACK
- Must fit into supplied unloaded keystone patch panels
- Supplied as Bag Quantity of 10 keystone Inserts



Example of Keystone Coaxial threaded F-Connector

G1-26: 19" Rack Accessories - KEYSTONE RCA socket coupler

- RCA Snap-in Keystone Module designed as a coupler for RCA audio/video applications.
- Insert Type: RCA.
- Colour-Code: White.
- Connector Details: RCA Female Audio/Video.
- Must fit into supplied unloaded keystone patch panels
- Supplied as Bag Quantity of 10 keystone Inserts



Example of Keystone RCA Socket coupler

G1-27: 19" Rack Accessories – Fibre Keystone Insert for LC and SC

- Coupler to accept the following inserts:
 - LC OM3 Multimode Duplex Coupler
 - LC Multimode Duplex Coupler
 - LC Single mode Duplex Coupler
 - SC Simplex Coupler
- Supplied as Bag Quantity of 10 Fibre keystone Inserts



G1-28: CAT6 8 Position RJ45 plug stranded Modular

- CAT6 8 Position RJ45 plug stranded Modular Crimp Plug 100 Pack



G1-29: CAT6 8 Position RJ45 plug solid wire Modular Crimp Plug

- CAT6 8 Position RJ45 plug solid wire Modular Crimp Plug 100 Pack



G1-30: Cable Patch Lead –10GbE Shielded CAT6A RJ45 to RJ45 Stranded LSZH Cover

- High quality category 6A Ethernet Patch Leads made from 100% Bare Copper. Suited for high data transmission and mission critical situations to ensure data integrity and transfer speeds for datacentre installation.
- Performance rated for 750 MHz bandwidth
- Suit for up to 10Gigabit LANs, include 10GBASE-T Ethernet, 1000BASE-TX Fast Ethernet, & Lower
- Supplied in cable lengths of 0.5, 1.0, 2.0, 3.0, 5.0, 10.0, 15.0 metres.
- Contractor to supply lengths and colours as required for each site installation.
- Contractor to supply and additional minimum of ten (10) spare patch leads of each length and colour at the site for each cable type used at that site install.
- Cable colours of Blue, LightBlue, Black White, Red, Yellow, Red, Green, Grey and Purple to be available.
- Each twisted pair in the cable is individually wrapped in aluminium foil Mylar (100% Coverage)
- Overall Copper Braided Shielded
- Comes with LSZH (Low Smoke Zero Halogen) Jacket

- Category 6A SFTP cable wired straight through. 26 AWG, gold plated 8x8 (RJ45) plugs
- Snag-free strain relief moulded boot provides secure and accurate connection
- Suppress ANEXT (Alien Near End Cross Talk) and deliver superior 10GbE performance up to 100metres.
- Lifetime Warranty
- A-Tick Complaint as per ACMA requirement
- ETL verified to TIA/EIA-568C.2 Category 6a
- Complaint to IEC 802.3an standards & ISO/IEC 11801
- UL Approved
- ETL Verified
- UL Verified

G1-31: Cable Roll CAT6 LSZH ~300metres

CABLE SPECIFICATIONS

- Cable Type: Cat 6
- Connectors: Unterminated
- Length: 305m (1000ft)
- Colour: Blue/Black/Green/Red/Grey/Yellow/White/Pink/Orange
- Jacket Material: LSZH
- Diameter: 6.2mm
- Supplied as: Unterminated Cat 6 on cable reel
- Meter Marked
- 305m easy-pull box
- 23 AWG

G1-32: RJ45 Cable Boot

- Snag less Boot for CAT5/CAT5E/CAT6 Cable
- For use with Solid or Stranded Round Cable
- Colours: Black, Grey, Orange, Purple, White, Yellow, Blue, Red, Green
- 10 Pack



G1-33: Fibre Patch Cable OM4 LC-LC Multimode

- High quality Fibre Optic Patch. Suited for high data transmission and mission critical situations to ensure data integrity and transfer speeds for datacentre installation of Routers to Router, Router to Switch.
- OM4 Multimode Fibre Optic Cable to support 10Gb/s and up to minimum of 25Gb/s Router and LAN Switch stacking and uplink connections at high speed.
- LC-LC connector
- Lengths and connector to be supplied based on Router and LAN Switch uplink types.
- Supplied in cable lengths of 1.0, 2.0, 3.0, 5.0, 10.0, 15.0, 20.0, 30.0 metres. Will be specified in Goods Schedule.

G1-34: Power Cable - IEC C13 to C14 Cord 10A

- IEC C13 to C14 Extension Cord 10A
- Colour: BLACK/RED
- Length: 1, 3, 5, 10 metre

G1-35: Datacentre Tool-Labeller

Brother P-Touch E550WVP Industrial Labeller Set, labelling system for data comm environment, print on durable laminated labels and heat shrink tube tape. Wireless handheld labelling tool features required:

- computer & mobile connectivity,
- built-in standard barcodes.
- For use on label cables, faceplates, consumer units, and other datacom and electrical installations using dedicated functions.
- Handheld direct thermal printing.
- PC, Mac, and mobile connectible, software included.
- Wi-Fi enabled.
- USB connector included
- Prints on cable wraps, cable flags, or heat shrink tubes.
- LCD Backlit screen with 3-line, 16-character display.
- Qwerty and numeric keyboards in 20 languages.
- Supports up to 24mm TZe tape.
- Tape types to support: TZe laminated and non-laminated and HGe laminated tapes, as well as Heat-shrink tubes.
- Tape cutter built-in.
- To be supplied with 12mm TZe Tape - black on white.
- AC adaptor included.
- All batteries required to be supplied

- Li-ion Battery Pack
- 6 x AA batteries
- Carry case and wrist strap included.



G1-36: Datacentre Tool-UTP-CABLE-TESTER

- Cable Continuity Tester: This Pocket Network Cable continuity tester for verifying the wiring in CAT5e/CAT6/CAT6A/CAT7 network cables. Ability to runs all tests and checks for continuity, open, shorted and crossed wire pairs check cables. Able to check RJ11 & RJ45 cable types. Visible LED status display



G1-37: Datacentre Tool- HDMI-CABLE-TESTER

- HDMI Cable Tester – HDMI TYPE A-A A-C C-C CABLE: Fast & accurate verification for use with type A-A, A-C, C-A and C-C connectors; Test fragile, damaged HDMI cables; portable so can troubleshoot and verify HDTV installation & terminations in the field; Can test disorder, short, open & cross status of HDMI cables quality; test cable length of up to 50 metres; LEDs and shield LED on both main and remote unit; capable of checking wire map only with master unit; three adjustable test modes: Fast, Slow Scan & Manual; Loop back function; minimum of 1 Year Warranty



G1-38: Datacentre Tool-SIDE-CUTTERS

- Professional 5 ¼” Precise Flush Cut Pliers or equivalent

**G1-39: Datacentre Tool-SCREWDRIVER-SET**

- Crescent Insulated Electrical Screwdriver set 8 Piece or equivalent

**G1-40: Datacentre Tool-MULTI-WIRE STRIPPER**

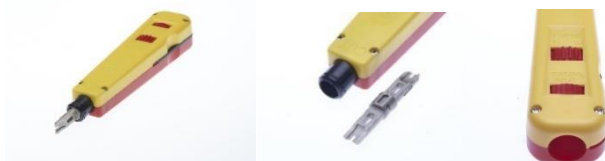
- Crescent Self Adjustable Wire Stripper or equivalent

**G1-41: Datacentre Tool-CABLE-CRIMP-TOOL**

- Crescent Ratcheting Crimping Tool Set 10 piece – CRCT10 or equivalent
- RJ45 crimping and wire cutter toolset with Parallel mechanism for precise crimping; compound action requires 30-50% less pressure; 6 interchangeable jaws included; rubber handle; storage case included; Dies include: insulated and non-insulated terminals, open barrel, coaxial and modular connectors. Types: Insulated Terminals 0.5mm² - 6mm² (22-10 AWG); Open Barrel Connectors N/I 0.5mm² - 6mm² (22-10 AWG); Non Insulated Terminals 0.5mm²- 10mm² (22-8 AWG); Coaxial Connectors RG58, RG59, RG62 - Hex, 6.8mm, 5.41mm, 1.73mm; Coaxial Connectors RG59, RG-6 - Hex, 8.89mm, 8.13mm, 6.48mm; Modular Connectors RJ45, CAT5e - CAT6.

**G1-42: Datacentre Tool-PATCH-PUNCH-DOWN**

- Professional 110 Punch Down Tool

**G1-43: Datacentre Tool-WIRE-STRIPPER**

- Disposable Cable Stripper with 110 IDC Tool, for stripping wire diameter 0.5 to 6.2mm. Suitable for UTP/STP wire

**G1-44: Datacentre Tool-Consumable-Labeller-Tape-White**

- Refill Tape to suit for Industrial labeller 24mm Strong Adhesive TZE Tape
- Colour: Black on Red/ Black on Yellow/ Black on White

G1-45: Datacentre Tool-Consumable-Labeller-Tape-Yellow

- Refill Tape to suit for Industrial labeller 12mm Strong Adhesive TZE Tape
- Colour: Black on Red/ Black on Yellow/ Black on White

G1-46: Datacentre Tool-Consumable-Labeller-Tape-White

- Refill Tape to suit for Industrial labeller 9mm Brother 9mm Flexible TZE Tape Colours:

- Colour: Black on Red/ Black on Yellow/ Black on White

RS1: Common Requirements for Component One Related Services Works

- **Cable Management**
 - All equipment racks in the locate equipment room are to follow a high standard of industry practice cable management at installation time that is also sustainable to manage by local ICT staff.
 - Cable Management System:
 - One level of overhead cable tray shall be provided for the Power and data cabling.
 - Cabling up racks and over overhead cable tray when interconnecting between racks. Racks will have segregation for fibre and data and power cables.
 - Power and data cabling shall be kept separate to minimize electrical interference with 6inch or 150mm separation.
 - Power outlets that receive power from the UPS shall be of Red colour.
 - Electrical and data cable installation is to be installed at ceiling level via neat and narrow cable trays suspended from the ceiling. The customer requests that cables are not laid in the roof space.
 - Cable Entry Points:
 - Cable entry points from outside areas shall be made via suitable cable glands.
 - All cable glands to be secured to a single gland plate in one location.
 - All cables entering the DC shall have their sheath earthed close to the entry point.
 - Any electrical cables shall be passed through distribution and surges filtering units.
 - Cables are to be loomed with no twists or crossovers and supported with ties and harnesses with required strain relief. Patch panel selection should ensure that there is no extreme cable bending from the connector once large number of cables are bundled. Angled cable termination sockets are recommended.
 - The Rack #1 and Rack #2 are both to have Fibre and UTP patch panels supplied and installed to accommodate new and patching of uplink cables.



Figure 16: Example of Good practice cable wiring and Patch Panel

- A mix of 24-port and 48 port RJ45 patch panels are to be used. Tested Cat6A and CAT6 UTP patch leads shall to be used for all interconnects between switches and network device ports unless higher capacity Fibre has been selected. Keystone couplers for CAT6A RJ45 socket passthrough and Fibre will be used as preference for rack cabling for ease of management and replacement.
- The Fibre panels are to be pass through type with termination at rear and front (as pictured in figure 17). Fibre cables will be of patch lead from quality manufacturer to ensure they are well made and tested before coming on site for use.
- All cables are to be labelled



Figure 17: Fibre Cable Patch Panels and through terminations

Component 2: Network WAN and LAN Infrastructure

The following network architecture diagrams illustrate the end state and interim proposals. There may be slight variations at time of implementation based on vendor solution and MNRE department ICT governance requirements as to how departments and WAN security must be implemented.

Presently, SMD has two telco provider connections. One network is the GoS wide area network which provides a private IP addressing and connectivity between departments managed by the MNRE IT Division. The other network is a direct Internet connection into the SMD from a local ISP.

The WAN and Internet solution required is for a secure internal wide area network connecting SMD, WRD and NEOC offices. Internet and external services are to be through a secure firewall router with redundancy to ensure high availability. Possibly, in future a second datacentre will be in place which will provide site disaster recovery and a managed alternate ISP connection possibly through a second provider.

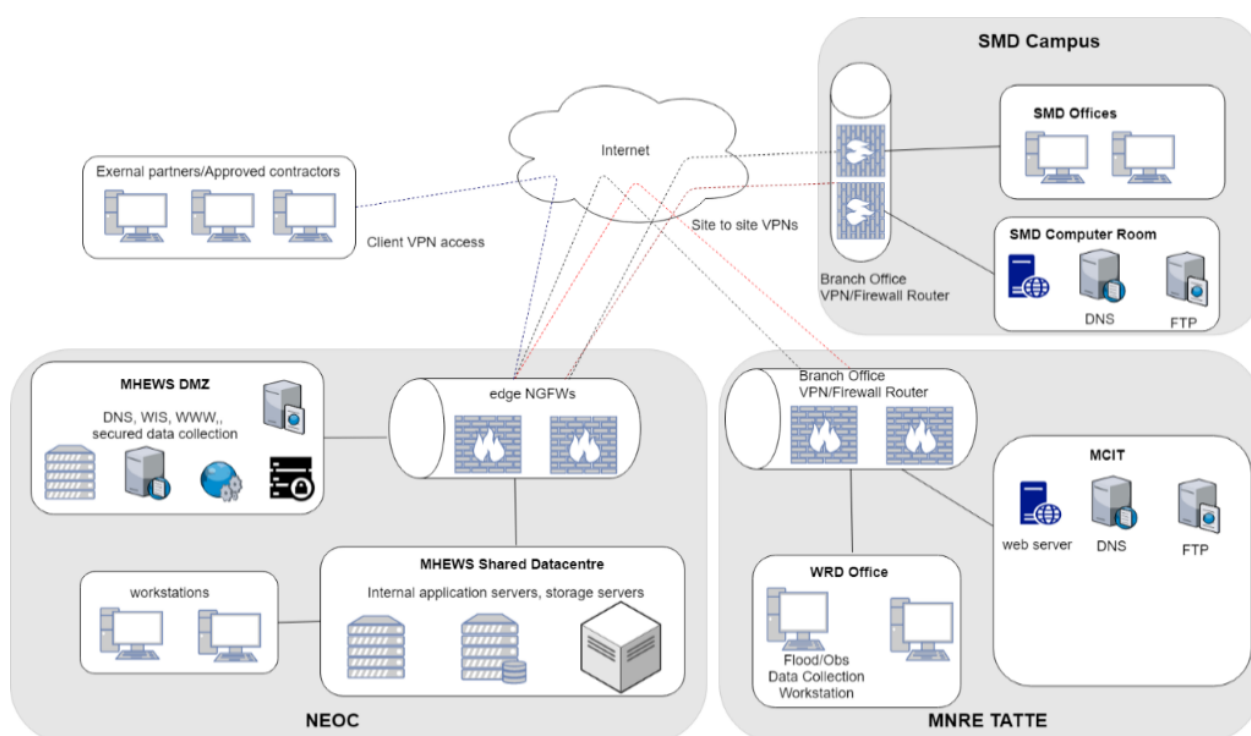


Figure 18: MHEWS WAN with site to site VPNs Diagram end-state

The NEOC site will implement a secure firewalled best practice environment using an external edge firewall hardware appliance and another internal hardware firewall providing separation from the DMZ for forward facing services and on the other side managed LAN. No systems from the DMZ will have access to the LAN, LAN data collection servers will have access one way only to securely retrieve external delivered data such as observations, numerical model data, etc. as shown in Figure 19: Dual Firewall Zoned DMZ and LAN

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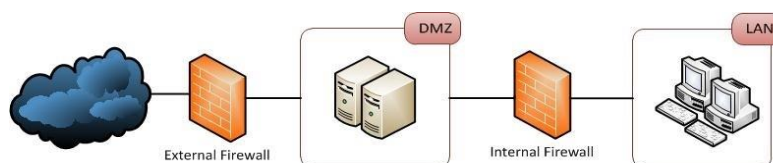


Figure 20: Dual Firewall Zoned DMZ and LAN

Dependant on budget and the number of VI host nodes available, a VI cluster is to be configured and isolated in the DMZ and another cluster in the LAN network zone for forecast operations.

If the number of hosts is inadequate to provide high availability requirements a VI single cluster is to be built with separate distributed virtual networks zoned for the DMZ and LAN using different physical switches, NICs and vLANs for the DMZ and LAN zones. The final decision as to whether the DMZ and LAN clusters are separate physical clusters or one physical and two logical zoned clusters will be finalised with the bidder during the ICT design meeting after contract kick off.

The SMD and WRD remote offices will use a single firewall DMZ approach as these offices will already be within the MNRE WAN. As shown in Figure 21: Single Firewall Zoned DMZ and LAN

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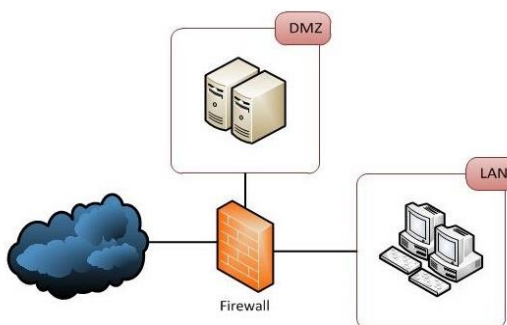


Figure 22: Single Firewall Zoned DMZ and LAN

The bidder will be responsible for the installation, testing and configuration to provide this secure network architecture.

- **Component 2 - Goods Specifications**

G2-1: Communications Serial to IP Terminal Server 8 Ports

RS232/RS422/RS485 Serial Communications to IP (terminal) server device with minimum of eight (8)-ports. Ability for users to connect, manage and control equipment with a serial port over Ethernet or the Internet with an IP connection.

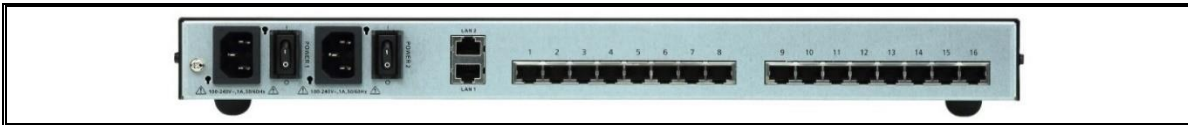
An example is the ATEN, Lantronix, Raritan Dominion Serial Console Server, or

functionality equivalent.

Key specification requirements:

- Terminal Server to have minimum of 8 serial port configurations;
- Ability to, Access, monitor and control equipment over Ethernet;
- Secure in-band and out-of-band network access to serial consoles;
- Ability to, Replace dedicated PCs and/or modem lines with fast and reliable Ethernet networking;
- IPv4 / IPv6 support;
- Dual Ethernet ports to allow fail control or dual IP address access;
- Dual power supplies;
- Ability to, Configure quickly and easily via HTTP, DHCP, Telnet, serial or device installer utility;
- Configurable user permissions for port access and control;
- Local and remote authentication and login;
- Third-party authentication via RADIUS, TACACS+, LDAP/AD and Kerberos;
- IP and MAC address filter for enhanced security protection;
- Modem dial-in/dial-back/dial-out access for BIOS level remote access to devices if network inaccessible;
- Ability to, Support RS232, RS422 and RS485 communications;
- Supports baud rates of 300, 600, 1200, 1800, 2400, 4800, 9600, 19200, 28800, 38400, 57600, 115200, 230400 bps;
- Ability to, Power over Ethernet (PoE) model available;
- Ability to, Environmentally-friendly RoHS and WEEE compliant;
- Included software driver and support for real COM port on MS-Windows server 2016 onwards and professional v10 onwards to emulate a serial COM port connection to the Windows OS over IP to the terminal server serial port connection;
- Included software driver and support for real TTY driver on Linux to emulate a serial connection to the Linux over IP to the terminal server serial port connection;
- A built-in web server is required to enable users to access and configure the terminal server device from a standard web browser;
- To be same manufacturer (brand) as G1-4 (KVM) and Smart PDS to allow single management control with software for centralised data centre management of all devices on LAN or from over Internet.
- To be supplied with mounting rails and all hardware necessary for rack installation
- Include minimum 5-year total technical support with next business day technical support and faulty device replacement within a maximum three (3) business days.





G2-2: Central Management Software - KVM Controller, Serial to IP Terminal Server and PDU

Centralised Management Software to provide the management of all KVM over IP switches, serial console servers, PDUs, and third-party devices such as embedded service processors, blade servers, and physical and virtual servers for in-band and out-of-band management. Robust interface to assist more efficient and productive management from HTML 5-based web interface. For example, ATEN CC2000 if ATEN devices are specified otherwise an equivalent functionality.

The Dashboard displays is to display at-a-glance overview of device status, device events, task results, online users, and licensed nodes usage. With the device status and device events sections, administrators can be immediately notified about the condition of the connected devices, as well as quickly receiving the generated critical logs. The task results section delivers vital messages about operation success or failure. Administrators can also view details of currently logged-in users and terminate suspicious user sessions. The Dashboard's enhanced notification functionality helps users to promptly handle issues and fix problems efficiently.

- Single sign-on to consolidate the management of KVM over IP switches, serial console servers, intelligent PDUs, and third-party devices such as embedded service processors, and physical and virtual servers
- Intuitive User Interface with HTML5 to deliver friendly user experience
- At-a-glance Dashboard portal to display an overview of the device status, device events, task results, online users, and licensed nodes usage
- Flexible remote access to service processors including Redfish (iDRAC8/iLO5), Dell iDRAC5/6/8, HP iLO2/3/5, IBM RSA II, Dell CMC, IBM AMM, HP OA, IPMI, IMM, or to IT equipment using RDP, VNC, SSH, or Telnet IP tools
- Supports access and control to virtualized environment over VMware vSphere 5.5/6.0/6.5/7.0 Windows Server 2008, 2012 & 2016, or Citrix XenServer 6.5.
- Supports management of APC PDUs (AP79xx, AP89xx, and AP86xx)
- Supports LDAP, AD, Kerberos, RADIUS and TACACS+ for centralized authentication and authorization Centralised role-based policy for user access privilege control
- Military level encryption (AES 256-bit) for secure end-to-end node access
- Access control to grant or restrict user access by IP or MAC address, and SAS 70 compliance for configurable failed login attempts and lockout
- Supports certificates signed from third-party authorities (CA)
- TLS v1.2 data encryption (AES-256 bit supported) and RSA 2048-bit certificates to secure user logins from browser
- Supports strong user password policy to enhance the security of user accounts
- Consolidates logs from KVM over IP switches, serial console servers, and other devices through syslog protocol for audit trail
- Universal virtual media support for easy software deployment (mount ISO image,

boot, or upgrade the device remotely)

- Event notification support through email, SNMP (v1, v2c, v3), and Syslog
- Task scheduling for backing up central manager database and configuration, exporting logs, and controlling power on/off on PDU devices
- Message Box — shows internal system messages or critical logs that can be viewed in full detail with just one simple click.
- Panel Array Mode – allows administrators to monitor multiple video outputs of remote servers in one screen
- Include minimum 5-year total software maintenance and technical support with next business day technical support.

G2-3: Network Edge Firewall/VPN/Router for MHEWS WAN

Datacentre Core Firewall/VPN/Router to be used in all MHEWS datacentres and sites must have the following features.

- Dual WAN active/standby automatic failover or load balancing mode with policy-based routing. Automatic failback to primary WAN when connection is restored.
- High availability and redundancy configuration. Automatic failover to standby device when primary device fails.
- Support DMZ configuration, VLAN and NAT configuration.
- Support OpenVPN and L2TP protocol to configure site to site VPN with DR site and three branch offices.
- Support both policy-based routing and SLA monitoring for dual WAN load balancing or failover configuration.

Edge Firewall/VPN/Router – specifications:

- Cisco Firepower 2110 or functionally equivalent;
- Rack-mountable next generation firewall appliance;
- Configurable as active or standby mode for device redundancy;
- Dual WAN ports configurable as active/standby automatic failover or load balancing mode with policy-based routing. Automatic failback to primary WAN when connection is restored;
- Support OpenVPN and L2TP protocol to configure site to site VPN with four other offices;
- Interfaces: minimum twelve (12) x 10M/100M/1000M Ethernet RJ45 interfaces. Minimum four (4) x 1G (SFP) Ethernet interfaces. Speed compatible for uplink connection to Core switch deployed in NEOC and ToR switches in branch offices;
- SFP/SFP+ transceivers to be included for required ports;
- Firewall throughput: stateful firewall inspection throughput minimum 3Gbps. Minimum 1.5 Gbps while application visibility control (AVC), intrusion prevention system (IPS) are activated;
- Concurrent session: minimum 1.0 million;
- New connection per second: minimum 18K;
- IPsec VPN throughput: minimum 500Mbps;
- VPN peers: minimum 1,500

- Include application visibility and control feature, VPN load balancing feature, active/active and active/standby high availability feature.
- Both centralized and locally manageable using web-based interface.
- Include minimum 5-year subscription license for advanced malware protection (AMP), intrusion detection and prevention system (IPS), file control.
- Include minimum 5-year total technical support with next business day technical support and faulty device replacement within a maximum three (3) business days.
- Include necessary adapter, power cables and data cables for complete WAN and device redundancy solution.
- Include rack mount kit for standard 19” server rack.
- Compatible with Samoa power supply standard input voltage 230V AC 50 Hz, +/- 5% tolerance.

G2-4: Datacentre Core Next Generation Firewall/VPN/Router

Branch office Edge Firewall/VPN/Router must have the following features.

- Support OpenVPN and L2TP protocol to configure site to site VPN between branch offices, SMD, WRD and NEOC.
- Support DMZ configuration, VLAN and NAT configuration.

Branch office Edge Firewall/VPN/Router – specifications

- Cisco Firepower 2130 or functionally equivalent;
- Rack-mountable next generation firewall appliance;
- Configurable DMZ and site to site VPN using OpenVPN or L2TP protocols.
- Interfaces: minimum twelve (12) x 10M/100M/1000M Ethernet RJ45 interfaces. Minimum four (4) x 10G (SFP+) interfaces and speed compatible for uplink connection to Core or ToR switch dependent of whether deployed in NEOC datacentre;
- SFP/SFP+ transceivers to be included for required ports;
- Firewall throughput: stateful firewall inspection throughput minimum 10 Gbps. Minimum 5 Gbps while application visibility control (AVC), intrusion prevention system (IPS) are activated;
- Concurrent session: minimum two (2) million;
- New connection per second: 40000;
- IPsec VPN throughput: minimum 1Gbps;
- VPN peers: minimum 7500;
- Include application visibility and control feature, VPN load balancing feature, active/active and active/standby high availability feature;
- Both centralized and locally manageable using web-based interface;
- Include minimum 5-year subscription license for advanced malware protection (AMP), intrusion detection and prevention system (IPS), file control;
- Include minimum 5-year total technical support with next business day technical support and faulty device replacement within a maximum three (3) business days.
- Configured with dual power,
- Include necessary adapter, power cables and data cables for WAN and LAN uplinks;
- Include rack mount kit for standard 19” server rack;

- Compatible with Samoa power supply standard input voltage 230V AC 50 Hz.

G2-5: Network Firewall Router Management Centre

Datacentre Firewall Management Appliance to be used in NEOC must have the following features.

- Able to centrally view/manage/monitor new generation firewalls (NGFWs).
- Able to capture all connected firewall device configurations. Able to deploy backup configurations to connected firewall devices.
- Able to monitor firewall devices centrally. Able to capture audit log from connected firewall devices.

Datacentre Firewall Management Appliance (DC-FW-MANAGER) –specifications

- Cisco FIRESIGHT MANAGEMENT CENTER (VMWARE) FOR 10 DEVICES or functionally equivalent.
- Include minimum 5-year total technical support with next business day technical support and faulty device replacement within a maximum three (3) business days.
- Include perpetual license for the features such as (add/remove/configure/log/backup/deploy) for 10 devices.

G2-6: Network Datacentre NEOC Core 48 Port 10GbE Performance Smart Stackable Managed Switch

Datacentre Core Switch– specifications

- Interfaces: minimum of 30-Port 10GBaseT RJ45 copper ports
- Interfaces: minimum of 10-Port 1GBaseT RJ45 copper ports
- Minimum of 4 SPF+ ports, two (2) 802.1q trunks each of 40Gbps interconnect between core switches and connection to department expansion switches.
- SFP/SFP+ media transceivers to be included for required ports;
- Must be suited for high performance throughput virtualised environments to act as core switch in an environment such as VMWARE vSphere Enterprise HA Clusters, IPSAN and shared local network traffic from NAS devices.
- Layer 3 managed
- Latency: <1.5 μ s latency
- Routing switching capacity: Minimum 480 Gbps
- Forwarding Performance: Minimum 240Mpps
- Dual hot-pluggable power supply modules 1+1
- Stacking capabilities: minimum eight (8) switches
- Management: CLI, out-of-band management, SNMP, telnet, FTP, and centralized management using appliance or virtual manager OS.
- LAN switches and access points must be all same brand and have single view of network for management, monitoring and support purposes.

- Appliances to have maximum of one license per switch for all OS features with no additional licences for add on features. All switch ports to be active without need for licence activation.
- All appliances must be compatible with Samoa power supply standard input voltage 230V AC 50 Hz.
- Include minimum 5-year total technical support with next business day technical support and faulty device replacement within a maximum three (3) business days.

G2-7: Network Branch Office ToR 24 Port 10GbE Performance Smart Stackable Managed Switch

Datacentre Core Switch– specifications

- Interfaces: minimum of 20-Port 10GBaseT RJ45 copper ports
- Minimum of 4 x 10Gbps SPF+ ports for two (2) 802.1q trunk interconnect between ToR switches and connection to trunking to other building racks via inter building fibre cable connections.
- SFP/SFP+ media transceivers to be included for required ports;
- Must be suited for high performance throughput virtualised environments to act as core switch in an environment such as VMWARE vSphere Enterprise HA Clusters, IPSAN and shared local network traffic from NAS devices.
- Layer 3 managed
- Latency: <1.5 µs latency
- Routing switching capacity: Minimum 480 Gbps
- Forwarding Performance: Minimum 240Mpps
- Dual hot-pluggable power supply modules 1+1
- Stacking capabilities: minimum eight (8) switches
- Management: CLI, out-of-band management, SNMP, telnet, FTP, and centralized management using appliance or virtual manager OS.
- LAN switches and access points must be all same brand and have single view of network for management, monitoring and support purposes.
- Appliances to have maximum of one license per switch for all OS features with no additional licences for add on features. All switch ports to be active without need for licence activation.
- All appliances must be compatible with Samoa power supply standard input voltage 230V AC 50 Hz.
- Include minimum 5-year total technical support with next business day technical support and faulty device replacement within a maximum three (3) business days.

G2-8: Network LAN Access 24 Port 1GbE/10GbE Smart Stackable Managed Switch

Access Switch (ACCESS-SWITCH) – specifications

- Meet common features mentioned above.
- Cisco SX550, HPE FlexFabric 5130 or functionally equivalent

- Interfaces: twenty-four (24) autosensing 10/100/1000BaseT PoE+ RJ45 copper ports, minimum four (4) SFP+ 10Gbps or minimum of two (2) 25Gbps ports.
- SFP/SFP+ transceivers to be included for required ports;
- Latency: <3 μ s 10 Gbps latency
- Throughput: 154 Mpps
- Routing switching capacity: 165 Gbps
- PoE capability: 740 W PoE+
- Dual power supplies
- Stacking capabilities: nine (9) switches
- Management: CLI, out-of-band management, SNMP, telnet, FTP, and centralized management using appliance or virtual manager OS.
- LAN switches and access points must be all same brand and have single view of network for management, monitoring and support purposes.
- Appliances to have maximum of one license per switch for all OS features with no additional licences for add on features. All switch ports to be active without need for licence activation.
- All appliances must be compatible with Samoa power supply standard input voltage 230V AC 50 Hz.
- Include minimum 5-year total technical support with next business day technical support and faulty device replacement within a maximum three (3) business days.

G2-9: Network DMZ Router Hub Switch Access 8 Port 1GbE/10GbE Smart Stackable Managed Switch

Hub Switch – specifications

- Meet common features mentioned above.
- Interfaces: minimum eight (8) autosensing 10/100/1000BaseT RJ45 copper ports, minimum two (2) SFP 1GbE ports.
- SFP/SFP+ transceivers to be included for required ports;
- Latency: <3 μ s 10 Gbps latency
- Throughput: 154 Mpps
- Routing switching capacity: 165 Gbps
- Dual power supplies
- Stacking capabilities: nine (9) switches
- Management: CLI, out-of-band management, SNMP, telnet, FTP, and centralized management using appliance or virtual manager OS.
- LAN switches and access points must be all same brand and have single view of network for management, monitoring and support purposes.
- Appliances to have maximum of one license per switch for all OS features with no additional licences for add on features. All switch ports to be active without need for licence activation.
- All appliances must be compatible with Samoa power supply standard input voltage 230V AC 50 Hz.
- Include minimum 5-year total technical support with next business day technical support and faulty device replacement within a maximum three (3) business days.

G2-10: IPSAN Network 12 Port 10GbE Performance Smart Stackable Managed Switch

IPSAN Performance Switch – specifications,

- Interfaces: minimum of 12-Port 10GBaseT RJ45 copper ports
- Minimum of 40Gbps aggregated uplink interconnect between ToR switches, provided as minimum of 4 x 10Gbps or minimum of 2 x 25/40Gbps SFP+ ports;
- SFP/SFP+ transceivers to be included for required ports;
- Switch will be used in N+1 dedicated high performance virtualised environments for IPSAN in Virtualised Environment and will require high performance to match IPSAN.
- Layer 3 managed
- Latency: <1.5 μ s latency
- Routing switching capacity: Minimum 480 Gbps
- Forwarding Performance: Minimum 240Mpps
- Stacking capabilities: minimum eight (8) switches
- Management: CLI, out-of-band management, SNMP, telnet, FTP, and centralized management using appliance or virtual manager OS.
- LAN switches and access points must be all same brand and have single view of network for management, monitoring and support purposes.
- Appliances to have maximum of one license per switch for all OS features with no additional licences for add on features. All switch ports to be active without need for licence activation.
- All appliances must be compatible with Samoa power supply standard input voltage 230V AC 50 Hz.
- Include minimum 5-year total technical support with next business day technical support and faulty device replacement within a maximum three (3) business days.

- **Related Services**

The contractor is to supply a preliminary design as part of bid submission to allow determination of suitability of bidder solution. This total design which will include hardware, software, VI and networking will be used as a key basis for technical assessment.

Installation Requirements for Component Two Related Services

- **SMD & WRD Branch Office – Commissioning and Professional Service – LAN devices**

The supplier will provide,

- NAS servers will be configured as active with standby configuration in high availability mode.
- Install necessary uplink cables, power cables etc. (all cables must have durable clear label tags)

- Install KVM controller, console and cable to rack devices ensuring full local and remote access operation.
- KVM devices to be labelled and configured with system ID's and reflected in documentation.
- Setup and update latest firmware and security patches.
- Device setup and configuration using industrial best practices. (services, VLAN, DMZ, NAT, firewall rules, port management etc.)
- License installation and configuration using industrial best practices (malware, IPS, VPN etc.)
- Comprehensive documentation showing 'as built' installation including any connections to networks, VLANs, other systems, etc.
- Validate correct operation and connectivity to NEOC ready for operations.

- **NEOC – ICT WAN Network Commissioning and Professional Service**

The supplier will provide,

- Install necessary uplink cables, heartbeat link cables, power cables etc. (all cables must have durable clear label tags) to all network appliances.
- Setup and update latest firmware and security patches.
- All Network appliances setup and configuration using industrial best practices.
- All Network appliances where applicable will be configured as fault tolerant pairs and are to be across different racks for fault tolerance.
- Internal systems and DMZ systems are to be isolated into different physical racks from internal systems.
- If applicable, dual WAN high availability configuration and failover/failback test.
- Device high availability configuration and failover test.
- License installation/activation and configuration using industrial best practices (malware, IPS, VPN etc.)
- Populate connected managed devices into centralised management device. Setup and configure centralized management device.
- Comprehensive documentation showing 'as built' installation including any connections to networks, VLANs, other systems, etc.
- Validate correct operation and connectivity between PDC and BDC testing primary and backup paths and commissioned ready for operations.

Component 3: Storage Infrastructure

The nature of a National Meteorological and Hydrological Service (NMHS) organisation is that they are a very data intensive business. Large volumes of data are collected as well as deriving volumes of new datasets from numerical modelling and other analysis. For MHEWS initially the data model will be a distributed one as there will be no single primary datacentre hosting the main central repository for all data collected at a national level. International data and observation will be received from relevant operation centre that has that collection function.

Data storage clusters will be based on industry leading network attached storage (NAS) appliances. These NAS devices will provide high availability and redundancy through local direct connect clustering and business continuity will be across sites providing disaster recovery through NAS replication over the MHEWS wide area network. This approach is required due to the hybrid datacentre implementation and risk of single point of failure of observing collection systems. The planned MHEWS Enterprise ICT architecture will allow easy migration to N+1 redundant data collection and processing over time with little to no change if implemented in a managed way. There are quality and cost efficient specific commercial NAS appliances that provide the required functionality: providing ease of management with regular automated system and security update support; additional IT services that will be required such as domain name services, User Authentication and management, Web Servers, Content Management System, Wiki for internal document and SOPs. Using traditional servers and methods to build and maintain such services within an operational environment takes considerable IT knowledge, skill and staff resources to build and manage and why the approach in using a commercial NAS with simple dashboard management with the required applications built-in is being used. This provides a much better total cost of ownership (TCO) especially for 24x7 operations when there is limited to no ICT administration and support staff.

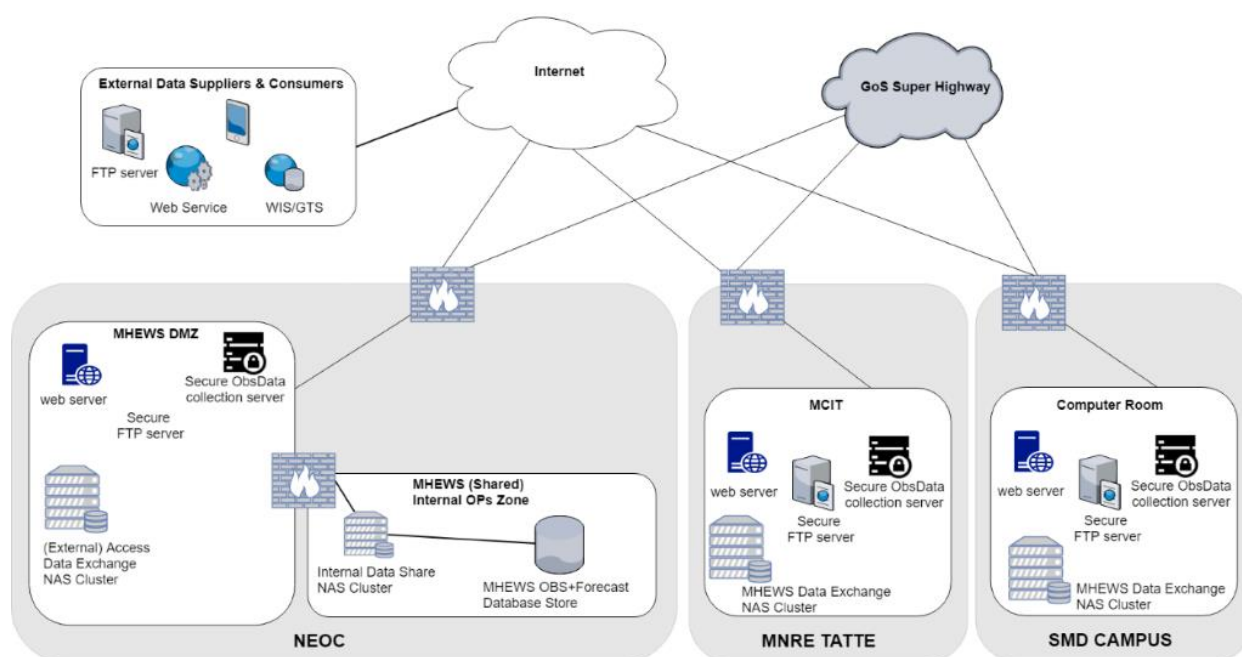


Figure 23: MHEWS Data Sharing & Replication Architecture

The technology of choice for storage will be enterprise class high performance network attached storage (NAS). NAS appliances are chosen as they are a self-contained embedded Linux server with a choice of storage and network interface technologies with good total cost of ownership (TCO) characteristics. MHEWS requires the level of functionality provided by Enterprise class NAS appliances, such as RAID with flash and standard spindle hard drives, e-mail server, LDAP directory services, SFTP/FTP server, Web Server, Content Management system (CMS), central system management, cyber security preventions, high availability clustering and file synchronization.

• **Component 3 - Goods Specifications**

G3-1: Active-Active IP SAN for Virtual Infrastructure Cluster

High performance active-active storage device for non-disruptive iSCSI services.

The Synology UC3200 meets the required functionality and specification, or an equivalent device meeting the specification.

Chassis:

- 2U rack

Storage:

- 12 x 3.5"/2.5" SAS SSD/HDD
- Minimum expansion to allow total raw capacity up to 500TB using expansion chassis units.
- Hot swappable, hot spare capability.
- Enterprise-class performance of at least 140,000 4K random write IOPS with low latency.

Power: 2 x 500W hot-plug PSUs

Controllers:

- Must have dual symmetrical controllers configured as active/passive connected to each other by a reliable Non-Transparent Bridge.
- Each controller is to have the following configuration:
 - **CPU:** minimum 2.4GHz 4-core Intel Xeon D-1521
 - **Memory:** 16GB DDR4 ECC UDIMM (4 slots, max RAM up to 64GB) supplied as 2 x8GB or as specified in Goods Schedule.
 - **Array support:** RAID 0, 1, 10, 5, 6, F1
 - **Network Interfaces:** 2 x Gigabit RJ-45, 1 x 10Gbase-T RJ-45
 - **Expansion:** 1 x PCI-E Gen3 x8, 1 x SAS3
- High Availability automated controller failover without disruption.

Management:

- Fully certified virtualization solution with VMware vSphere, Microsoft Hyper-V, Citrix XenServer, and OpenStack Cinder.
- Brand, model, version must be listed on VI hardware compatibility list.
- Support both iSCSI and NFS protocols and integrates with VMware VAAI and Microsoft ODX Mware.

- Web console interface for management.
- Central Management System for multiple NAS/SAN devices of same OEM.

Warranty and Support:

- Minimum 5-years

Each NAS Unit to be Optioned with:

- Include Rail kit sliding type with all mounting hardware

G3-2: Active-Passive Dual Controller NAS for Data Exchange

Network Attached Storage with Dual Controller Active-Passive 10GbE, redundant power supply units, SAN iSCSI and NFS block storage device and built-in business, IT services and productivity applications.

The Synology SA3200D meets the required functionality and specification, or an equivalent device meeting the specification.

Chassis:

- 2U rack

Storage:

- 12 x 3.5"/2.5" SAS SSD/HDD
- Minimum expansion to allow total raw capacity up to 500TB using expansion chassis units.
- Hot swappable, hot spare capability.

Power: 2 x 500W hot-plug PSUs

Controllers:

- Must have dual symmetrical controllers configured as active/passive connected to each other by a reliable Non-Transparent Bridge.
- Each controller is to have the following configuration:
 - **CPU:** minimum 2.4GHz 4-core Intel Xeon D-1521
 - **Memory:** 16B DDR4 ECC UDIMM (4 slots, max RAM up to 64GB) supplied as 2 x 8GB or as specified in Goods Schedule.
 - **Array support:** RAID 0, 1, 10, 5, 6, F1
 - **Network Interfaces:** 2 x Gigabit RJ-45, 1 x 10Gbase-T RJ-45
 - **Expansion:** 1 x PCI-E Gen3 x8, 1 x SAS3
- High Availability automated controller failover within 60 seconds.
- Passive Controller Network Port to take over Active controller IP address when failing over and reverse behaviour when failing back.
- Monitoring of critical file services such as CIFS, iSCSI, AFP, FTP, NFS.

Management:

- Fully certified virtualization solution with VMware vSphere, Microsoft Hyper-V, Citrix XenServer, and OpenStack Cinder.
- Brand, model, version must be listed on VI hardware compatibility list.
- Capability to fast clone, NFS v4.1, and thin provisioning.
- Support both iSCSI and NFS protocols and integrates with VMware VAAI and Microsoft ODX Mware.
- Without the need for additional licences data protection applications including Snapshot Replication, Hyper Backup, and Active Backup.
- Web console interface for management.
- Linux and Windows files system support
- Directory Services: Windows® AD integration: Domain users' login via SMB/NFS/AFP/FTP/File Station, LDAP integration
- Built-in applications such as: Mail Server, RADIUS Server, Log Centre for central syslog, Collaboration Tools,
- iSCSI: Maximum iSCSI target: 256, Maximum iSCSI LUN: 512, iSCSI LUN clone/snapshot support
- Security: Firewall, encryption shared folder, SMB encryption, FTP over SSL/TLS, SFTP, rsync over SSH, login auto block, Let's Encrypt support, HTTPS (customizable cipher suite)
- FTP: Bandwidth control for TCP connections, custom FTP passive port range, anonymous FTP, FTP SSL/TLS and SFTP protocol, boot over the network with TFTP and PXE support, transfer logs
- Central Management System for multiple NAS/SAN devices of same OEM.

Warranty and Support:

- Minimum 5-years

Each NAS Unit to be Optioned with:

- Include Rail kit sliding type with all mounting hardware

G3-3: RAM 16GB DDR4 ECC DIMM for G3-1

- RAM 16GB DDR4 ECC DIMM for G3-1 SAN
- To be supplied as matched two identical DIMM Pairs in Pack providing 32GB RAM expansion.
- Hardware must be genuine listed part for the model supplied and same brand as equipment to be installed.

G3-4: RAM 16GB DDR4 ECC DIMM for G3-2

- RAM 16GB DDR4 ECC DIMM for G3-2 NAS
- To be supplied as matched two identical DIMM Pairs in Pack providing 32GB RAM expansion.
- Hardware must be genuine listed part for the model supplied and same brand as equipment to be installed. RAM size will be specified on goods schedule.

G3-5: Network Adapter Dual Port 10 Gigabit RJ45 PCI Express Ethernet Adapter for G3-1 and G3-2.

- PCI-E adapter with 2 Port 10GBaseT RJ45
- Hardware must be genuine listed part and same brand as equipment to be installed. Or, must be specified on intended installation device hardware compatibility list such as Synology E10G18-T2 Dual Port 10 Gigabit PCI Express Ethernet Adapter or equivalent.

G3-6: Enterprise Class Hard drive for G3-1 and G3-2.

- Enterprise Server/NAS/SAN Class Hard drive
- Capacity: 8/10/12/14TB
- Interface: SAS3
- Speed: 7200RPM
- Mount size: 3.5"
- Cache: 256MB
- Warranty: 5 Year Warranty
- Hardware must be specified on intended installation device hardware compatibility list to model and firmware version level.
- All drives of same capacity to be supplied as identical model and firmware versions

G3-7: Enterprise Class Solid State Drive (SSD) for G3-1 and G3-2.

- Enterprise Class Hard drive suited for NAS & IPSAN
- Capacity: 400GB/800GB
- Interface: SAS3
- Mount size: 2.5"
- Warranty: 5 Year Warranty
- Hardware must be specified on intended installation device hardware compatibility list to model and firmware version level.
- All drives of same capacity to be supplied as identical model and firmware versions

Component 4: Virtual Server Infrastructure (VI)

An industry standard IT infrastructure approach is proposed for this digital transformation, as having a large number of underutilised physical servers and workstations is not only inefficient but leads to higher cyber security risk, system management complexity and higher operating costs due to the number of differing hardware platforms, operating systems and inability to easily manage multiple Original Equipment Manufacturer (OEM) support contracts. A server architecture using a virtual infrastructure platform is specified.

Currently the backend infrastructure is a mix of servers and workstations of differing hardware type, operating systems and configuration complicated by equipment is mostly end-of-life. The systems are underutilised as they are typically setup for a single function and do not provide the service levels, manageability required and do not provide a shared infrastructure with ability for departments to have their own managed operational forecast and service delivery servers.

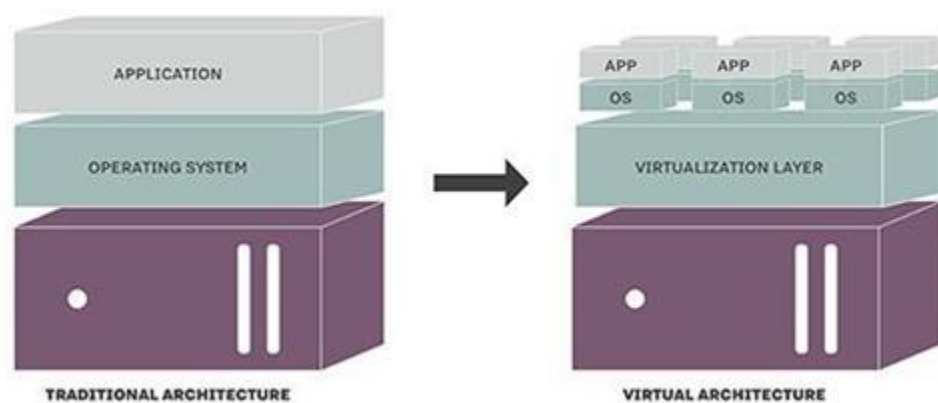


Figure 24: Traditional and Virtual Infrastructure models

The NEOC datacentre is planned for dedicated 24x7 MHEWS operations. Budget does not allow the establishment of primary, secondary and tertiary datacentres for MHEWS. Currently lead operational agencies have their own managed systems at their own sites, transforming every operational centre is not immediately feasible. For these reasons it has been decided to establish the first shared virtual infrastructure for MHEWS operations at the new NEOC site.

Establishing a VI capability at NEOC will give operations the high availability and agility that is critically needed. In future additional VI clusters can be established and joined to the MHEWS IT network, this could be at existing departments or possibly move to a hybrid datacentre model adopting the GoS eGov strategy and using the Government Datacentre as a secondary datacentre.

In the longer term the recommended strategy is to transition to virtual infrastructure (VI) server processing clusters across the datacentres at NEOC and the MNRE Division computer centres and if required eGovernment Datacentres as this technology approach allows portability and easy migration across the VI. A virtual infrastructure approach supports high availability, load balancing and agility in deployment and management. The VI approach has been an industry standard for many years and used in leading NMHS installations for over 10 years. The core benefit is that all CPU, Memory (RAM) and disk storage are managed as large resource pools even though they are

contributed from a number of physical servers (hosts), storage and network appliances. This then allows virtual machines -VM- (virtual servers) to be created using a mix of operating systems (MS- Windows Server and workstation, Red Hat Linux, Centos, Ubuntu, etc.) on the same cluster of hosts (physical servers). Each VM can dynamically be grown or shrunk with required CPU cores, RAM, disk storage etc. from the available cluster pool unlike the current (and older) 1:1 hardware to operating system model which also usually also only serves one service function (application) and is therefore very underutilised resulting in higher TCO.

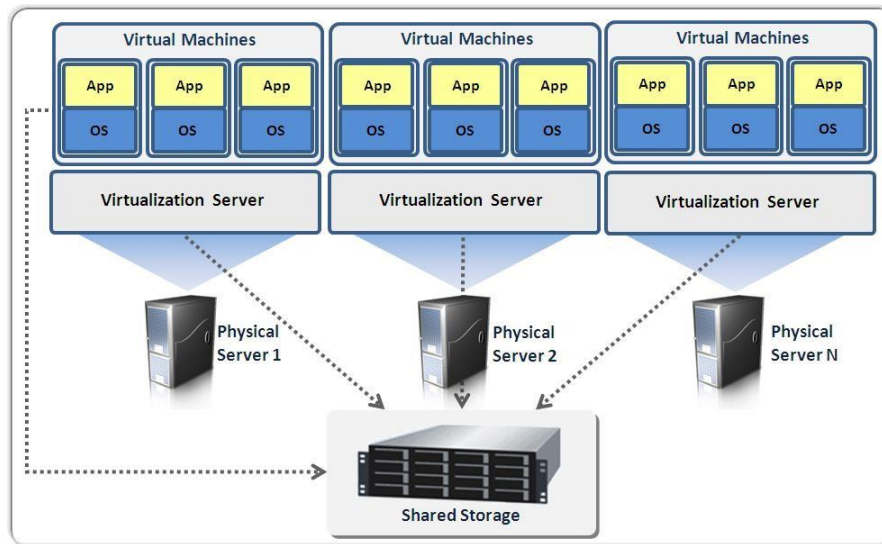


Figure 25: VI Physical Conceptual Architecture

- ### Virtual Infrastructure Requirements

The Virtual Server infrastructure shall use a purpose-built hypervisor with a native cut down hypervisor which is not a full host operating system providing improved performance and security. An integrated management console shall provide a private cloud like solution to manage and orchestrate all virtual machines and resources (single pane of glass management).

The Virtual Infrastructure (VI) solution and associated software licencing must be Enterprise class Virtualization Software supporting High Availability (HA), Manual and automated Virtual Server migration across host in the cluster without any interruption to the running server., Physical to Virtual (P2V) migration tools, Automatic host-to-host VM load balancing migration, Centralized management and performance monitoring, Automate Failover, live running Snapshot and Restores of VMs, Distributed Network Switch providing full fault tolerance. This system must support motioning of virtual server migration from one physical host to another through load balancing or manual migration to clear a host for maintenance purposes.

The VI cluster shall allow cluster system resource pools to be increased with the simple and non-disruptive addition of a new host nodes as required. The hardware platform physical servers shall support direct storage and capacity increases via simple plugin drives (subject to host expansion limits) which will then become part of the storage pool. As mentioned regarding the current ICT staff support skills staff capability, Storage Area Networks (SAN) and complex environments (large blade, large scale converged, InfiniBand, etc.) are not suited due to operating budget overheads this will place on the department.

The VI cluster design is to be designed for the characteristics of the processing load and of most

importance hardware architecture is designed to minimise any licencing operating costs of the required VI software environment in a legal way.

The VI clusters are to use an enterprise class software defined platform such as VMware vSphere, ESX and vCenter v7. All additional licences for system management, logging, alarming must be supplied for the entire maintenance and support period. The VI is to support virtual servers to maximise NUMA and allow virtual NUMA groups across sockets.

The VI clusters will be required support the following guest virtual (server) machines:

- Windows Server 2016 Standard
- Windows Server 2016 Datacentre
- Windows Server 2019 Standard
- Windows Server 2019 Datacentre
- Red Hat Enterprise Linux Server
- Centos Linux Server
- Ubuntu Linux
- Windows 10 Professional x64
- Open stack Framework community edition

The virtual server cluster will look similar to the below diagram, as per the diagram each NEOC MicroDC rack will be capable of hosting up to six (6) physical 1RU hosts, IP SAN and a pair of network switches with expansion of SAN and NAS of required into the future.

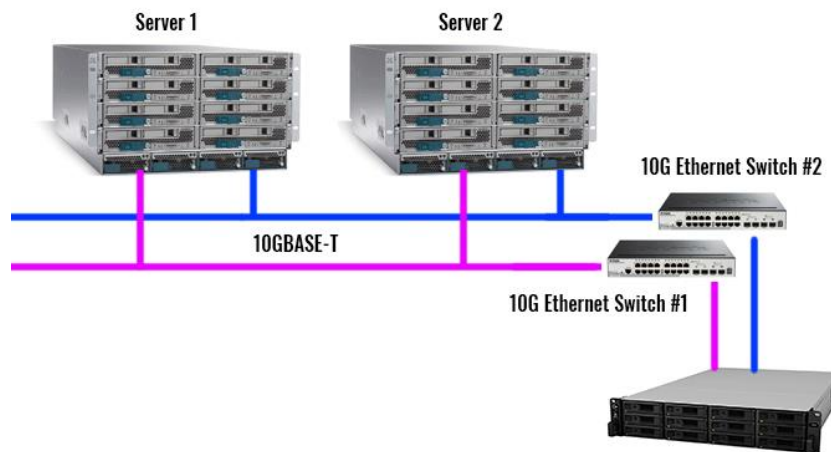


Figure 26: Indicative VI Physical Design

The VI cluster will be configured as one Datacentre cluster across the two racks. The cluster will then be partitioned into work groups with distributed network virtual switches mapped to physical NICs, switches and VLANs to ensure there is safe network zoning for security purposes. The SAN network will also be independent to the VM and general network traffic. A number of network groups will be established.

The network map is to be configured with each server host node and appliance device:

| Network | Port Speed | Device Connection | Physical Interfaces | Host Node NetAdapter(n)-Port{A B} | Cable Colour |
|---|--------------|--|---------------------|-----------------------------------|--------------|
| VI Management Traffic, | 10Gbps | Core Switch #1 & #2 | 2 | 1-A,2-A | White |
| vMotion | 10Gbps | Core Switch #1 & #2 | 2 | 1-B,2-B | Purple |
| VM Guest – LAN | 10Gbps | Core Switch #1 & #2 | 2 | 3-A,4-A | LightBlue |
| VM Guest – DMZ | 10Gbps | Core Switch #1 & #2 | 2 | 5-A,6-A | Yellow |
| IPSAN - LAN | 10Gbps | IPSAN Switch #1 & #2 | 2 | 3-B,4-B | Green |
| IPSAN - DMZ | 10Gbps | IPSAN Switch #1 & #2 | 2 | 5-B,6-B | Orange |
| ILOM Port#1 | 1Gbps | Core Switch #1 & #2 | 1 | Server ILOM#1 | Grey |
| Router & Access Switch Ports, NAS – DMZ Side | 1/10Gbps | DMZ Router Hub, Edge Router, Core Router, DMZ NAS | TBD | | Red |
| Core Router, Access Switch Ports, NAS, Datacentre inter-rack patching – LAN Side | 1/10Gbps | Core Router, LAN NAS, Interna Access Switch, | TBD | | Blue |
| Device Console/Management Ports: KVM Controller, Terminal Server, Routers, Switches, NAS, SAN, Smart PDU, MicroDC, | 1/10Gbps | KVM Controller, Terminal Server, Router/Switch/NAS/SAN Console Mgt Ports | TBD | | Grey |
| Forecaster Workstations - Office wall LAN | 1 Gbps | Workstation | 1 | | Blue |
| Switch 802.1q trunks | 10/25/40Gbps | Switches | 2 | | Black |

Table 1: NEOC Network to device port mapping

The above table lists the minimum configuration of required host server interface ports. For the other network attached devices the number of physical interfaces will depend on the device itself however it is expected there will be at least one (1) port and if a device supports redundant paths there will be two (2) interface ports on each device with each going to a separate switch/router.

It is assumed that Server hosts will be expanded by way of adding additional PCIe adapters with dual or quad 10BASET network ports. The host interfaces and network ports within the VI are to be balanced across interface adapters to provide N+1 at an adapter level to interface port to physical switch, etc. DMZ network ports are not to share the same host interface adapters as the management and LAN networks however if necessary VI vMotion can share with the VM Guest LAN network.

Any additional server operating system licences will be specified in the goods schedule. It is anticipated that Active Directory type services such as user authentication, DNS, DHCP, File Server & Print Server (Distributed File System) will be provided by the embedded applications in the supplied NAS or by Linux open source solutions. MS-Windows Server may be required in the future and therefore it is important that single physical CPU's do not exceed the maximum licenced

core count, i.e. 32 cores for VMWare. The number of physical licences will need to consider the CPU and core count of the chosen cluster solution for licencing purposes.

The MS-Windows server (for AD, DNS, DHCP, etc.) licencing must operate in a VMWare or equivalent virtual infrastructure environment and support for licencing purposes the hypervisor to automatically load balance the virtual servers across the cluster nodes. In the case of a physical host node failing, any Windows Server licences must support automatic migration to another host node within the site.

As mentioned, there will be no disaster recovery capability across VI to another site therefore high availability within the one cluster will be the focus for now however as host nodes grow and multiple clusters for service divisions and backup datacentre are created there will be a need for site disaster recovery.

• **Component 4 - Goods Specifications**

G4-1: VI - Host Server Node

The following is the minimum hardware specification levels that are to be used when determining host node build level:

- Must be International and globally supported brand name server being in the leader quadrant of the Gartner magic quadrant, HPE ProLiant DL series, Dell PowerEdge Rxxx series or equivalent.
- 19" Rack mounted with preferred 1RU profile.
- Intel XEON CPUs physical cores to be minimum of 8 and enabled for Virtual Technology.
- Each Socket CPU to have minimum of 8 cores and maximum of 16 cores;
- Each cluster to have the exact same CPU type across nodes to ensure VI affinity, dynamic load balancing rules, etc. have no conflicts.
- Number of sockets supported by host: two (2) CPU;
- Number of CPUs Installed: 2;
- Minimum RAM to be installed in each host node is 128GB RAM ECC installed as 16GB or 32GB modules that provide best memory performance to CPU.
- RAM configuration must be expandable to a minimum of 192GB in each host node without memory being removed;
- Processor suited for Virtual Server and Data processing environments such as Intel Xeon Silver and Gold, minimum of 2.2GHz standard clock rate and minimum of 12MB cache;
- Alternate CPU sizing installations can be recommended only if there are no implications for software licencing of VI Platform, VM Operating Systems, Antivirus, Backup and Restore. The total cost of ownership must be demonstrated to be better with reduced overall system cost for purchase and ongoing maintenance and support.

- Network interconnect between cluster nodes to be compliant with network switches and fabric supplied in this bid, minimum of 10GbE.
- Network Connections:
 - minimum 12 x 10BASE-T ports across at least three (3) independent identical network interface adapters.
 - Ports must support link aggregation and be compliant with supplied switches.
- Dual redundant Power Supplies;
- Storage: Boot media and local hypervisor storage configured as RAID1 SAS SSD, 256GB or RAID1 microSD preloaded ESXi boot memory;
- Must meet hardware compatibility list of VMWare vSphere, vCenter and ESX v6.7 and v7.0. vSphere, ESX, vCenter v7.0 to be supplied for VI platform installation at time of bid;
- Hardware to have optimization of BIOS settings, CPU, RAM, NUMA and system architecture to take best advantage of VMware Performance Guidelines for VMWare vSphere, vCenter and ESX v7 and latest version at time of bid;
- Host nodes to have full system management integration to single management suite with monitoring of all physical devices, temperature, CPU, network, storage, security or sensor alarms.

G4-2: VI – Hypervisor and Cluster Management Software

The Virtual Server infrastructure shall use a purpose-built hypervisor with a native cut down hypervisor which is not a full host operating system providing improved performance and security. An integrated management console shall provide a private cloud like solution to manage and orchestrate all virtual machines and resources (single pane of glass management).

The Virtual Infrastructure (VI) solution and associated software licencing must be Enterprise class Virtualization Software supporting High Availability (HA), Physical to Virtual (P2V) migration tools, Automatic host-to-host VM load balancing migration, Centralized management and performance monitoring, Manual or Automated Failover of VM between hosts without disruption, live running Snapshot and Restores of VMs, Distributed Network Switch providing full fault tolerance. This system must support motioning of virtual server migration from one physical host to another through load balancing or manual migration to clear a host for maintenance purposes.

The VI clusters will be required to support the following guest virtual (server) machines:

- Windows Server 2016 Standard
- Windows Server 2016 Datacentre
- Windows Server 2019 Standard
- Windows Server 2019 Datacentre
- Red Hat Enterprise Linux Server
- Centos Linux Server
- Ubuntu Linux

- Windows 10 Professional x64 (non VDI)
- Open stack Framework community edition

The virtual infrastructure software system is to be optimally licenced:

- Full featured Enterprise level VI software environment without number of host node restrictions;
- Licence model to be optimised for number of running virtual machines (VMs) in a Remote Office Branch Office scenario (ROBO). This model will be best suited initially as it will be a VI Greenfields installation and not expected to have a large number of VMs however enterprise class high availability is critical.
- Support for expansion and product licence upgrade is required changing to allow additional ROBO licence at other branch site/s or move to node based licencing without loss of existing licence benefits.
- Licence such as vSphere ROBO Advanced and vCenter Standard with production level support or equivalent is suited.
- Licenced for a period of five (5) years at time of supply.

G4-3: Enterprise level VI Manager for Manager

- Software Application Enterprise level VI Manager for Management and Monitoring of all Hosts, Storage, virtual servers and networks across LAN and WAN branch Offices such as VMWARE vCenter Standard, or equivalent.
- Licence to provide full functionality to cluster and add other remote branch nodes as required. To be supplied as software that will install as a fully enabled virtual machine without the need for an operating system such as MS-Windows Server.
- Central Management “Standard” Licence to have no Restrictions,
- Production Level support and 5 years Support and Maintenance.
- Must be able to create, build and modify virtual machines of various Linux distributions, Windows operating Systems.
- Ability to migrate built VM into MHEWS VI Cluster.

G4-4: Desktop Windows 10 Virtual Environment for VM build and testing

- Software Application that provides a fully functional Virtual Hypervisor and management environment that operates on Microsoft Windows 10 x64 workstation such as VMWare Workstation 15.5 Pro or later, or equivalent.
- Must be able to create, build and modify virtual machines of various Linux distributions, Windows operating Systems and Mac.
- Ability to migrate built VM into MHEWS VI Cluster.

G4-5: MS-Windows 10 x64 Full Version

- VI - virtual machine operating system software – Windows 10 Professional x64 Edition licence. Full Retail Licence.

- Licence must allow us as a virtual machine guest.

G4-6: Cyber Security/Anti-Virus for MS-Windows 10 x64

- Antivirus/Cyber Protection Software – Windows 10 Professional x64 Edition.
- Can supply as licence key/s if available for download from manufacturer site
- 2 years support and maintenance,
- Minimum 2 Devices per Key
- Suited software Kaspersky Internet Security, Trend Micro Internet Security or equivalent.

G4-7: Cyber Security/Anti-Virus for MS-Windows Server 2016/2019 x64

- Antivirus/Cyber Protection Software – Windows Server 2016/2019 x64 Edition.
- Can supply as licence key/s if available for download from manufacturer site
- 2 years support and maintenance.

G4-8: Cyber Security/Anti-Virus for Linux x64

- Antivirus/Cyber Protection Software – Linux Server
- Can supply as licence key/s if available for download from manufacturer site
- 2 years support and maintenance,
- Suited software Sophos for Linux or equivalent.

G4-9: MS-Windows Server 2016/2019 CAL - Device

- 10 pack of Microsoft Windows Server Client Access Licence – Device type.
- Perpetual licence

G4-10: MS-Windows Server 2019 Standard Edition Licence, No CALs

- Single licence for Microsoft Windows Server 2019 Standard Edition
- Perpetual licence
- No CALs with server licence.

• Related Services

The contractor is to supply a preliminary design as part of bid submission to allow determination of suitability of bidder solution. This total design which will include hardware, software, VI and networking will be used as a key basis for technical assessment.

RS4-1: VI Design

- **NEOC Network and Virtual Infrastructure Design**

The supplier will provide,

- Physical design for best practice high availability virtual infrastructure implementation
- Design to include all network appliances and physical server hosts.
- Follow best practice network design with separate NICS suited for Active/Active access switches:
 - Management
 - VmKernel
 - Service Console
 - Production
- Physical design for best practice high availability virtual infrastructure implementation, there should be no single path of failure.
- Build Separate Virtual Server Infrastructure clusters with N+1 high availability with minimum of three (3) physical hosts in each cluster as a minimum.
- Each DMZ to have its own virtual host cluster for segmentation and security zoning best practice
- Internal Production Cluster to have minimum of 3 hosts for forecast operations
- Management service for AAA services, may share with internal production cluster if network secure zoning of AAA and production networks can be safely segmented.
- Device lights out/management consoles are to be configured onto management network.
- IP addressing scheme is to be fully developed with consistency for branch and remote offices and between each to other to ensure failover and failback when connected to WAN.

- **NEOC – Host Servers, Storage and Software Install, Build and Configure**

The supplier will provide,

- Install all physical servers and storage into racks. Physical Servers within a cluster should be installed across racks and access switches so there is redundancy within the cluster at rack, PDU, host and network levels.
- Setup and update latest firmware and security patches.
- License installation/activation and configuration using industrial best practices
- Antivirus and backup software installation and testing.
- NAS servers will be configured as pairs and are to be across different racks for fault tolerance.
- NAS servers will be configured as active with standby configuration in high availability mode and replication to standby unit.
- Internal systems and DMZ systems are to be isolated into different physical racks from internal systems.
- Build Separate Virtual Server Infrastructure clusters with N+1 high availability with 3 physical hosts in each cluster as a minimum.

- DMZ to have its own virtual host cluster for segmentation and security zoning best practice
- Internal Production Cluster to have minimum of 3 hosts for forecast operations
- Management serves for AAA services, may share with internal production cluster if network secure zoning of AAA and production networks can be safely segmented.
- Lights out management consoles are to be configured
- All servers and devices that have a keyboard, video and mouse are to be connected to KVM controller.
- Install KVM controller, console and cable to rack devices ensuring full local and remote access operation.
- KVM devices to labelled and configured with system ID's and reflected in documentation.
- Device high availability configuration and failover test at physical device and virtual levels.
- Comprehensive documentation showing 'as built' installation including any connections to networks, VLANs, other systems, etc.
- All systems and cables to follow cable management requirements and labelled.
- Build a Windows 2019 Server standard edition virtual machine template. From the template create an Active Directory Server, a DNS server and DHCP Server.

RS4-2: VI Build

- **NEOC – Host Servers, Storage and Software Install, Build and Configure**

The supplier will provide,

- Install all physical servers and storage into racks. Physical Servers within a cluster should be installed across racks and access switches so there is redundancy within the cluster at rack, PDU, host and network levels.
- Setup and update latest firmware and security patches.
- License installation/activation and configuration using industrial best practices
- Antivirus and backup software installation and testing.
- NAS servers will be configured as pairs and are to be across different racks for fault tolerance.
- NAS servers will be configured as active with standby configuration in high availability mode and replication to standby unit.
- Internal systems and DMZ systems are to be isolated into different physical racks from internal systems.
- Build Separate Virtual Server Infrastructure clusters with N+1 high availability with 3 physical hosts in each cluster as a minimum.
- DMZ to have its own virtual host cluster for segmentation and security zoning best practice
- Internal Production Cluster to have minimum of 3 hosts for forecast operations

- Management serves for AAA services, may share with internal production cluster if network secure zoning of AAA and production networks can be safely segmented.
- Lights out management consoles are to be configured
- All servers and devices that have a keyboard, video and mouse are to be connected to KVM controller.
- Install KVM controller, console and cable to rack devices ensuring full local and remote access operation.
- KVM devices to labelled and configured with system ID's and reflected in documentation.
- Device high availability configuration and failover test at physical device and virtual levels.
- Comprehensive documentation showing 'as built' installation including any connections to networks, VLANs, other systems, etc.
- All systems and cables to follow cable management requirements and labelled.
- Build a Windows 2019 Server standard edition virtual machine template. From the template create an Active Directory Server, a DNS server and DHCP Server.

Component 5: Forecaster Workstations

Meteorological and Hydrological analysis and forecasting functions require high performance workstations that can provide intensive compute capability for data and numerical model processing as well as fast rendering and graphics visualisation supported through additional GPUs. Typically, a Meteorological and Hydrological Forecaster will run multiple simultaneous compute and graphically demanding applications. This technical specification mandates an industry high performance and scalable workstation to be supplied for these specialist functions.

In addition, operational support and administrative staff undertake a variety of functions in support of the forecast process, some of these staff do not need to access the high-end and demanding forecasting applications however a good performance workstation for other activities such as data quality control, verifications, etc. are still required.

For these reasons, three (3) workstation configurations are specified to match the different forecaster, analysis, research, scientific development, operator and office administration roles. The computer models will be referred to in the specification as:

- Computer for Office for general support and administration duties;
- Workstation for Operations for Scientific Analysis and Hydrometeorological forecasting operations support, training, research and development activities;
- Workstation for Forecasting for Meteorological and Hydrological Forecasting operations and use of advanced scientific graphical applications.

The supplier is to deliver, install and support all workstations from a leading Original Equipment Manufacturer (OEM). The supplied goods are to be from a reputable industry supplier. The three computer categories all must be supplied by the same leading international (OEM).

To assist in the reduction in total cost of ownership (TCO) all desktop and workstation computers are to be from the same manufacturer to ensure system management and monitoring tools use the same and one single platform interface. All workstations are to have the same core platform, this will assist ICT support staff with ongoing maintenance and image deployment through standardisation of hardware and drivers. Minimising the number of models will also allow easy swapping (exchange) or upgrade of workstations if there is a need to increase numbers or replace a particular computer quickly. The difference between each system level will be the performance and specification of the CPU type; number of GPU interface cards, System RAM configuration; and disk storage type and capacity.

Enterprise class management software to allow full monitoring support, change and configuration management is required and be part of the workstation capability to allow both system and asset management; security management including BIOS change with intrusion detection and self-correction; boot sector configuration locking and malware prevention and detection.

The difference between the three specification levels of each desktop/workstation model is their configured performance level and level of system capability. All models specified are to be from the same manufacturer and system base model, the only difference between each of the three specified computer workstations will be the level of hardware configured in the defined manufacturer model.

The following table will specify the computer specification for each workstation model category. Please note that at the start of the section for each computer model specification the special

performance requirements will be specified for that workstation model and then following, in the same section the base configuration is specified which is to be common for all models. The Goods schedule will outline the required workstation and peripherals quantities that are to be supplied.

- **Component 5 - Goods Specifications**

Required Technical Specification and Standards

G5-1: Computer Workstation - “Computer for Forecasting”

This computer workstation will be the highest performing of the three suited for Data Analysis, GIS, Advanced Graphical Applications and Forecasting Operations.

The type of computer workstation required should be of base specification level such as the Hewlett Packard (HPE) Z2 Small Form Factor G4, or equivalent with the below configuration.

Workstation models named here are for reference purpose only. Proposed workstations must meet the minimum specifications specified below.

Special Requirements for “Computer for Forecasting”:

System Processor:

- Intel® Xeon® Processor minimum performance level of (base frequency minimum 4.0 GHz, with minimum 4.9 GHz TurboBoost, minimum 12MB cache, minimum 6 cores) + Intel® UHD Graphics P630 equivalent or better. Processor model Xeon E-2286G equivalent or better with +/-10% tolerance in performance requirements.

Operating System:

- Official Windows 10 Professional 64bit OEM license.
- Operating System Load to M.2 storage
- System must be capable and complaint to operate Red Hat Enterprise and Ubuntu with “Linux ready” with driver support (Linux not required to be installed).

System RAM:

- 64 GB (2 x 32GB) DDR4-2666 ECC Unbuffered Memory
- Minimum of (4) RAM slots on system board allowing expansion to at least 128GB DDR4-2666 ECC Unbuffered Memory.

System Storage Configuration:

- Controller to support RAID 0 and RAID 1 on internal SATA and M.2 drives.
- Configured as RAID1
- Internal Primary Drive – M.2 1TB Z Turbo TLC SSD
- Internal Secondary Drive – M.2 1TB Z Turbo TLC SSD.
- Internal Third (backup) Drive – 6TB 7200RPM SATA 3.5” Enterprise HDD

Required Technical Specification and Standards

System Graphics Processor and Interface:

- NVIDIA® QUADRO® P4000 (8 GB GDDR5, 4 x Mini DisplayPort 1.4) Graphics or equivalent.
- Support Four (4) x displays simultaneously with all displays operating at the same HD graphics resolution as per display specification listed elsewhere in the bidding document.
- Graphics Adapter must be supported by MS-Windows, Linux RHEL/Centos/Ubuntu operating systems current and for next 4 years from delivery as stated under operating system requirements.
- Remote Graphics Software (RGS) or equivalent for Graphical Application remote use and management.
- mini DisplayPort-to-DisplayPort Adapter (4-pack)

Additional pre-loaded Software:

- Official Microsoft Office 2019 professional OEM supplied as perpetual license.

Accessories:

- USB Premium Wired Keyboard.
- Hardened wired USB Mouse with no adapters required.

Standard Base System Configuration for “Computer for Forecasting”:

Case profile:

- Small Form Factor or mini-tower

Power Supply Unit:

- ENERGY STAR Qualified Configuration
- Minimum 310W, preferred 400W power rating, minimum 90%-efficient with active power factor correction
- Power cable to suit Samoa country standard plug.
- Must be AC compliant to Country of Samoa requirements.
- Operating Voltage Range 200-260 VAC
- Rated Voltage Range 220-240 VAC
- Rated Line Frequency 50-60 Hz
- Operating Line Frequency Range 47-63 Hz
- Rated Input Current 4A @ 220-240V

Optical Drive:

- 9.5mm DVD-Writer 1st Optical Disc Drive.

Minimum level of External accessible I/O Ports:

- 1 x headphone/microphone combo;

Required Technical Specification and Standards

- 1 x USB 2.0 (charging);
- 1 x USB 2.0;
- 2 x USB 3.0;
- 1 x audio-in;
- 1 x audio-out;
- 1 x RJ-45 1Gb/s Ethernet Network port;
- 2 x Output DisplayPort from system on-board Intel UHD graphics (separate to GPU ports)

Minimum Internal System Expansion Slots:

- 2 x M.2 PCIe 3 x4;
- 1 x PCIe Gen 3 x16;
- 2 x PCIe 3 x1 (x4 open ended connector);
- 2 x PCIe 3 x4 (x16 connector).

Audio:

- Minimum of internal mono speaker.

Environmental Operating Conditions:

- Temperature range:
 - Non-operating: -10 to 50 degrees Celsius +/- 10% tolerance
 - Operating: 10 to 35 degrees Celsius +/- 10% tolerance

Operating Systems Compatibility:

- Official Microsoft Windows version 10 Professional 64bit OEM as perpetual licence pre-installed on designated boot storage (specified in storage configuration section).
- Support for Linux (not to be installed)
 - RHEL 64bit latest v6
 - RHEL 64bit latest v7
 - Centos
 - UBUNTU 64bit v18 or later
- All hardware supplied must be complaint with operating systems MS-Windows, UBUNTU and RHEL and on hardware compatibility list with native support of drivers provided with assurance of on-going support.
- Operating system must support machine imaging and automatic deployment of master image to workstations by purchaser using Acronis True Image and Snap deploy imaging and deployment software.

Warranty and Support:

- Minimum of 5-year (5/5/5 - material/labour/onsite) Warranty

Required Technical Specification and Standards

- Operating continuously on a 24x7 basis will not void the warranty
- Fully compliant with Acronis Snap Deploy, and Backup and Restore applications.

Management:

- Free device driver and application Software updates available via free download on support website;
- Integration into standard client management and monitoring software systems such as Nagios, VMware and common open source platforms.
- Ability to asset manage and monitor system operation via client management software system and SNMP connection.

Security:

- BIOS protection: password, anti-tamper and auto-restore capability;
- Storage root kit protection.

Bundled Application Software:

- PC Hardware diagnostic tools;
- Remote Graphics (desktop access) Software;
- Performance Advisor;
- Central management software patch management deployment software;
- DVD media viewing software
- DVD writing/publishing software.
- Free perpetual software licence to enable workstation to operate as a server for remote client access. Remote graphics software (RGS) or equivalent must provide high performance graphics visualization to remote clients or a collaborative shared group. RGS is to be designed to transfer high quality graphics HD quality to remote users over wide area networks of lesser network performance.

G5-2: Computer Workstation - “Computer for Operations”

This computer workstation is for supporting science and forecast operations providing good performance of a standard office desktop computer. It will be used for Data Analysis, GIS, Training, Research and Development activities by Meteorological and Hydrological Forecasters’ and other Scientists.

The type of computer workstation required should be of base specification level such as the Hewlett Packard (HPE) Z2 Small Form Factor G4, or equivalent with the below configuration.

Workstation models named here are for reference purpose only. Proposed workstations must meet the minimum specifications specified below.

Special Requirements for “Computer for Operations”:

Case profile:

- Small Form Factor or mini-tower

System Processor:

- Intel® Xeon® Processor minimum performance level of (base frequency minimum 3.5GHz, with up to minimum 4.7GHz with TurboBoost, minimum 8MB cache, minimum 4 cores) + on-board Intel® UHD P630 graphics processor equivalent or better. Processor model Xeon E-2224G equivalent or better with +/- 10% tolerance in performance requirements.

Operating System:

- Official Windows 10 Professional 64bit OEM license.
- Operating System Load to M.2 storage
- System must be capable and complaint to operate Red Hat Enterprise and Ubuntu with “Linux ready” with driver support (Linux not required to be installed).

System RAM:

- 32 GB (2 x 16 GB) DDR4-2666 ECC Unbuffered Memory
- Minimum of (4) RAM slots on system board allowing expansion to at least 128GB DDR4-2666 ECC Unbuffered Memory.

Internal Storage Configuration:

- Controller to support RAID 0 and RAID 1 on internal SATA and M.2 drives.
- RAID – NONE configured.
- Primary Drive – M.2 1TB Z Turbo TLC SSD
- Secondary (backup) Drive – 6TB 7200RPM SATA 3.5” Enterprise HDD.

System Graphics Processor and Interface:

- NVIDIA® QUADRO® P4000 (8 GB GDDR5, 4 x Mini DisplayPort 1.4) Graphics or equivalent
- Graphics Adapter must be supported by MS-Windows, Linux RHEL/Centos/Ubuntu operating systems current and for next 4 years from delivery as stated under operating system requirements.
- Support Two (2) x displays simultaneously with all displays operating at the same HD graphics resolution as per display specification listed elsewhere in the bidding document.
- Remote Graphics Software (RGS) or equivalent for Graphical Application remote use and management.
- mini DisplayPort-to-DisplayPort Adapter (4-pack)

Additional Supplied Software:

- Official Microsoft Office 2019 professional OEM supplied as perpetual license.
- Acronis

Accessories:

- USB Premium Wired Keyboard.
- Hardened wired USB Mouse with no adapters required.

Standard Configuration for “Computer for Operations”:**Power Supply Unit:**

- ENERGY STAR Qualified Configuration
- Minimum 310W, preferred 400W power rating, minimum 90%-efficient with active power factor correction
- Power cable to suit Samoa country standard plug.
- Must be AC compliant to Country of Samoa requirements.
- Operating Voltage Range 200-260 VAC
- Rated Voltage Range 220-240 VAC
- Rated Line Frequency 50-60 Hz
- Operating Line Frequency Range 47-63 Hz
- Rated Input Current 4A @ 220-240V

Optical Drive:

- 9.5mm DVD-Writer 1st Optical Disc Drive.

Minimum level of External accessible I/O Ports:

- 1 x headphone/microphone combo;
- 1 x USB 2.0 (charging);
- 1 x USB 2.0;
- 2 x USB 3.0;
- 1 x audio-in;
- 1 x audio-out;
- 1 x RJ-45 1Gb/s Ethernet Network port;
- 2 x Output DisplayPort (DP1.2) from system on-board Intel UHD graphics (separate to GPU ports)

Minimum Internal System Expansion Slots:

- 2 x M.2 PCIe 3 x4;
- 1 x PCIe Gen 3 x16;
- 2 x PCIe 3 x1 (x4 open ended connector);
- 2 x PCIe 3 x4 (x16 connector).

Audio:

- Minimum of internal mono speaker.

Environmental Operating Conditions:

- Temperature range:
 - Non-operating: -10 to 50 degrees Celsius +/- 10% tolerance
 - Operating: 10 to 35 degrees Celsius +/- 10% tolerance

Operating Systems Compatibility:

- Official Microsoft Windows version 10 Professional 64bit OEM as perpetual licence pre-installed on designated boot storage (specified in storage configuration section).
- Support for Linux (not to be installed)
 - RHEL 64bit latest v6
 - RHEL 64bit latest v7
 - Centos
 - UBUNTU 64bit v18 or later
- All hardware supplied must be complaint with operating systems MS-Windows, UBUNTU and RHEL and on hardware compatibility list with native support of drivers provided with assurance of on-going support.
- Operating system must support machine imaging and automatic deployment of master image to workstations by purchaser using Acronis True Image and Snap deploy imaging and deployment software.

Warranty and Support:

- Minimum of 5-year (5/5/5 - material/labour/onsite) Warranty
- Operating continuously on a 24x7 basis will not void the warranty
- Fully compliant with Acronis Snap Deploy, and Backup and Restore applications.

Management:

- Free device driver and application Software updates available via free download on support website;
- Integration into standard client management and monitoring software systems such as Nagios, VMware and common open source platforms.
- Ability to asset manage and monitor system operation via client management software system.

Security:

- BIOS protection: password, anti-tamper and auto-restore capability;
- Storage root kit protection.

Bundled Application Software:

- PC Hardware diagnostic tools;
- Remote Graphics (desktop access) Software;
- Performance Advisor;
- Central management software patch management deployment software;
- DVD media viewing software
- DVD writing/publishing software.
- Free perpetual software licence to enable workstation to operate as a server for remote client access. Remote graphics software (RGS) or equivalent must provide high performance graphics visualization to remote clients or a collaborative shared group. RGS is to be designed to transfer high quality graphics HD quality to remote users over wide area networks of lesser network performance.

G5-3: Computer Workstation - “Computer for Office”

This computer is a standard office desktop to be used for operational support activities and administration duties. It is of good quality and specification to assist in standardisation of ICT management and upgrading for use in other operational areas if required.

The type of computer workstation required should be of base specification level such as the Hewlett Packard (HPE) Z1 Small Form Factor G5, or equivalent with the below configuration.

Workstation models named here are for reference purpose only. Proposed workstations must meet the minimum specifications specified below.

Special Requirements for “Computer for Office”:**Case profile:**

- Small Form Factor or mini-tower

System Processor:

- Intel® i7 Processor 9th Generation minimum performance level of (base frequency minimum 3.2 GHz, with up to 4.6 GHz with TurboBoost, 12MB Cache, minimum 6 cores, (65W)) + on-board Intel® UHD P630 graphics processor equivalent or better with +/-10% tolerance in performance requirements.

Operating System:

- Official Windows 10 Professional 64bit OEM license.
- Operating System Load to SATA storage
- System must support and be Linux ready with driver support.

Power Supply Unit:

- ENERGY STAR Qualified Configuration
- Minimum 310W, preferred 400W power rating, minimum 90%-efficient with active power factor correction
- Power cable to suit Samoa country standard plug.
- Must be AC compliant to Country of Samoa requirements.
- Operating Voltage Range 200-260 VAC
- Rated Voltage Range 220-240 VAC
- Rated Line Frequency 50-60 Hz
- Operating Line Frequency Range 47-63 Hz
- Rated Input Current 4A @ 220-240V

System RAM:

- 16 GB (2 x 8GB) DDR4-2666 Memory (non ECC)
- Minimum of (4) RAM slots on system board allowing expansion to at least 128GB DDR4-2666 Memory.

Internal Storage Configuration:

- Controller to support RAID 1 on internal SATA.

- RAID – not configured.
- Primary Drive – 512GB PCIe NVMe SSD
- Secondary (backup) Drive – 6TB 7200RPM SATA 3.5” Enterprise HDD.

System Graphics Processor and Interface:

- Integrated Intel UHD 630 on-board Graphics
- Graphics Adapter must be supported by MS-Windows, Linux RHEL/Centos/Ubuntu operating systems current and for next 4 years from delivery as stated under operating system requirements.
- Remote Graphics Software (RGS) for Graphical Application remote use and management.
- Cable to connect to Monitor

Additional pre-loaded Software:

- Official Microsoft Office 2019 professional OEM supplied as perpetual license.

Accessories:

- USB Premium Wired Keyboard.
- Hardened wired USB Mouse with no adapters required.

Standard Configuration for “Computer for Office”:

Optical Drive:

- 9.5mm DVD-Writer 1st Optical Disc Drive.

Minimum level of External accessible I/O Ports:

- 1 x headphone/microphone combo;
- 1 x USB 2.0 (charging);
- 1 x USB 2.0;
- 2 x USB 3.0;
- 1 x audio-in;
- 1 x audio-out;
- 1 x RJ-45 1Gb/s Ethernet Network port;
- 2 x Output DisplayPort from system on-board Intel UHD graphics (separate to GPU ports)

Minimum Internal System Expansion Slots:

- 2 x M.2 PCIe 3 x4;
- 1 x PCIe Gen 3 x16;
- 2 x PCIe 3 x1 (x4 open ended connector);
- 2 x PCIe 3 x4 (x16 connector).

Audio:

- Minimum of internal mono speaker

Environmental Operating Conditions:

- Temperature range:
 - Non-operating: -10 to 50 degrees Celsius +/- 10% tolerance
 - Operating: 10 to 35 degrees Celsius +/- 10% tolerance

Operating Systems Compatibility:

- Official Microsoft Windows version 10 Professional 64bit OEM as perpetual licence pre-installed on designated boot storage (specified in storage configuration section).
- Support for Linux (not to be installed)
 - RHEL 64bit latest v6
 - RHEL 64bit latest v7
 - Centos
 - UBUNTU 64bit v18 or later
- All hardware supplied must be compliant with operating systems MS-Windows, UBUNTU and RHEL and on hardware compatibility list with native support of drivers provided with assurance of on-going support.
- Operating system must support machine imaging and automatic deployment of master image to workstations by purchaser using Acronis True Image and Snap deploy imaging and deployment software.

Warranty and Support:

- Minimum 5-year (5/5/5 - material/labour/onsite) Warranty
- Operating continuously on a 24x7 basis will not void the warranty
- Fully compliant with Acronis Snap Deploy, and Backup and Restore applications.

Management:

- Free device driver and application Software updates available via free download on support website;
- Integration into standard client management and monitoring software systems such as Nagios, VMware and common open source platforms.
- Ability to asset manage and monitor system operation via client management software system.

Security:

- BIOS protection: password, anti-tamper and auto-restore capability;
- Storage root kit protection.

Bundled Application Software:

- PC Hardware diagnostic tools;
- Remote Graphics (desktop access) Software;
- Performance Advisor;
- Central management software patch management deployment software;

- DVD media viewing software
- DVD writing/publishing software.
- Free perpetual software licence to enable workstation to operate as a server for remote client access. Remote graphics software (RGS) or equivalent must provide high performance graphics visualization to remote clients or a collaborative shared group. RGS is to be designed to transfer high quality graphics HD quality to remote users over wide area networks of lesser network performance.

G5-4: “27-inch-High Definition Display Screen”

The following high definition computer screen is to be the standard screen type for all of the three computer workstation specifications.

Screen Size:

- Minimum of 26.0” to maximum of 28”

Display type:

- IPS w/LED backlight minimum 5ms on/off or faster

Display features:

- Anti-glare;
- In plane switching;
- Language selection;
- LED Backlights;
- On-screen controls;
- Pivot rotation;
- Plug and Play;
- Anti-static;

Onscreen controls:

- Brightness;
- Colour Control;
- Contrast;
- Image Control;
- Input Control;
- Language, minimum of English selectable;
- Menu;

Native resolution:

- FHD (1920 x 1080 @ 60 Hz)

Resolutions supported:

- Minimum range of resolutions to be supported are 1920 x 1080; 1680 x 1050; 1600 x 900; 1440 x 900; 1280 x 1024; 1280 x 800; 1280 x 720; 1024 x 768; 800 x 600; 720 x 400; 640 x 480

Contrast ratio:

- Minimum 1000:1 static; 5000000:1 dynamic or better

Brightness:

- Minimum of 300nits

Pixel pitch:

- 0.2 mm or better

Signal input connectors:

- Minimum of: 1 x VGA;
- Minimum of: 1 x HDMI 1.4
HDCP support on HDMI

Power supply:

- Built-in power supply (not external pack)
- Power cable to suit Samoa country standard plug.
- Must be AC compliant to Country of Samoa requirements.
- Operating Voltage Range 200-260 VAC
- Rated Voltage Range 220-240 VAC
- Rated Line Frequency 50-60 Hz
- Operating Line Frequency Range 47-63 Hz

Mount:

- Desk mount adjustable stand to be supplied.
- Stand to be removable and allow mounting to industry standard VESA mount for multiple screen pedestal.

Warranty and Support:

- Minimum 5-year (5/5/5 - material/labour/onsite) Warranty
- Operating continuously on a 24x7 basis will not void the warranty

Supplied Cable:

- Power cable to suit Samoa country standard plug.
- DisplayPort™ 1.2 cable; (must include to connect with computer workstations via graphic cards specified above. Connector type must be compatible.)
- HDMI cable;
- VGA cable or adapter.

G5-5: Automated Desktop Deployment System (software)

Automated Desktop Deployment System genuine license. Must have built-in protection for desktops against ransomware and ability to protect NAS devices.

Product such as Acronis Snap Deploy 5 or equivalent.

Able to capture golden image and deploy to machines. Operating Systems to be supported for deployment are:

- Microsoft Windows Server 2016
- Microsoft Windows Server 2012 R2 / 2012
- Microsoft Windows Server 2008 R2 / 2008
- Microsoft Windows Small Business Server 2011 Standard
- Microsoft Windows Server 2003 R2 / 2003
- Microsoft Windows 10 / 8.1 / 8 / 7 / Vista / XP
- Microsoft Windows 2000 Professional
- Microsoft Windows 98/ME/NT
- Microsoft Windows 2000 Server
- Linux (kernel 2.4.9 and later), UBUNTU v18.xx, RHEL v6.9.x and RHEL 7.4.x.

Deployment platform to be supported on:

- Microsoft Windows Server 2016
- Microsoft Windows Server 2012 R2 / 2012
- Microsoft Windows Server 2008 R2 / 2008
- Microsoft Windows Small Business Server 2011 Standard
- Microsoft Windows Server 2003 R2 / 2003
- Microsoft Windows 10 / 8.1 / 8 / 7 / Vista / XP

Able to deploy image to computers through UEFI PXE network boot.

File systems to be supported:

- FAT16 / FAT32
- NTFS
- Ext2 / Ext3 / Ext4
- ReiserFS / ReiserF4
- XFS
- JFS
- Other file systems (sector-by-sector)

Deployment Images able to be stored on:

- Local folder (HDD/SSD)
- Network share
- USB HDD
- USB Flash Drive
- CD/DVD/BD-ROM

Rapidly deploy a single image to multiple machines via unicast or multicast via centralized management console. Ability to deploy to live machines with no manual booting required.

Wizard-driven user interface for rapid bare metal deployment function to single or targeted group of machines (desktops and/or servers).

Able to deploy image to different hardware. Auto driver detection and installation.

License Requirements

- Unlimited deployments for licence device seats (physical or virtual servers/workstations/desktops), specified in Goods Schedule.
- Licence is to support a minimum of two (2) distribution hubs. Distribution hubs being in NEOC, WRD (Tatte ICT), SMD connected by purchaser private network, or must be able to work as standalone deployment servers if purchaser desires.
- Software Licence is to be clearly defined as either a perpetual or subscription licence. Preference is for a perpetual licence.
- Software warranty and maintenance support period is to be covered for five (5) years from first installation licence activation covering all updates and access new to new versions during this period.
- Additional Licences to support extra deployment seats are to be provided during the support and warranty, the new licence is to be co-termed to the original warranty and support period. The supplier is to quote the discounted price for each additional licence required during the support period. Additional ordered seats will allow the overall total licence seat number to increase, if a new licence key is required for the new site licence this will be generated and supplied at no charge when the order is completed.
- Setup: Deployment server setup as VM machine. Distribution hubs setup and configuration. Two golden images creation Windows and Linux.

G5-6: Workstation Cyber Protection Back/Restore (software)

Software to protect from ransomware attacks, PC backup and restore functions at file and disk imaging level. Software that actively detects, blocks, and reverses suspicious changes to data, backup files.

The Acronis True Image 2021 Advanced Version for Windows PC product meets the required specification, or an equivalent product matching Acronis True Image 2021 functionality.

- On-demand antivirus scan, detect threats on computer by scanning for malware whenever you want. A quick file scan or a full system scan mode.
- Web filtering, block malicious URLs trying to inject malware, ransomware, and cryptojackers
- VidOPs conference protection, data and privacy when vidOPs conferencing via Zoom, Cisco WebEx, or Microsoft teams.
- End-to-end encryption, secure backups using enterprise-grade AES-256 encryption
- Quarantine and exclusions, device and backup files safe from malicious activities. Isolate potential threats in quarantine, control exclusion lists, allow approved programs to run uninterrupted. Block never-seen-before threats– with real-time checking
- File level recovery from backup image
- Licence to be perpetual, not licence subscription
- Licence to be supplied for use of 5 devices (workstations) per licence pack

Component 6: Uninterruptible Power Supplies for Workstations and Equipment Racks

All UPS units are to be supplied by an official and authorized agent of a leading international original equipment manufacturer (OEM). The OEM must be a global distributed and supported brand.

Must be supplied by the same leading international (OEM) with support across all models and software to display UPS health and provide configurable automated shutdown of UPS based on configured event such as percentage of battery remaining or battery condition critical. Connectivity from UPS to computer to be via USB and supplied USB cable

• Component 6 - Goods Specifications

G6-1: Smart UPS Rack/Tower - ~1kVA Full-Online Double Conversion Sinusoidal Output 240volt

1kVA Smart Online double conversion UPS with Surge Suppression and power filtering in Tower or 19" Rack mount. APC Smart online UPS double conversion or equivalent.

Electronics Design Topology:

- On-line double conversion with PFC (Power Factor Correction) system with pure sine wave output.

Battery Capacity:

- Minimum 800VA up to 1500VA

Configuration:

- Tower or 19" Rack mount
- If 19" rack mount is specified mounting rack slides and hardware to be supplied

Phase:

- Single Phase

Input Voltage Range:

- 190-276V +/- 5%

Nominal Voltage:

- 200/208/220/230/240V (selectable to suit country of installation)

Frequency:

- 50/60 Hz auto-select (selectable to suit country of installation)

Frequency Range:

- 45-65 Hz +/- 5%

Output Frequency:

- 50/60 Hz auto-select, frequency converter as standard

On Battery Output

- Waveform: Pure Sine Wave

Battery Management:

- Temperature compensated charging method (user selectable), automatic battery test, deep discharge protection, automatic recognition of external battery units.

UPS Output Power Receptacles:

- Minimum of two (2) power groups that can be controlled separately with order of shutdown
- Minimum of four (4) power outlets (must include minimum four (4) power outlets for multi-monitors workstations) with minimum of two (2) outlets per power group

User Interface:

- Graphical LCD display default to “English”.

Communication Ports:

- 1 USB port (for configuration and automated monitoring by supplied software).
- Installed RJ-45 Ethernet port for SNMP and Remote management capability to enable monitoring and controlling of the UPS through the Remote Management. Support for Management tasks allowing scheduled shutdowns and reboots. If an additional network interface adapter is required to provide these functions it is to be supplied and installed with each base unit at no additional cost.

Software:

- Software to operate on MS-Windows Professional10 and Linux to provide UPS configuration management, diagnostics, operation dashboard, shutdown controls for order of outlet zones and conditions for automated shutdown of UPS.

Active Power Factor Correction (PFC) Compatibility:

- Yes

Battery Type:

- Must be Lithium Ion, sealed Lead-Acid type batteries will not be accepted

Battery Nominal Capacity:

- Minimum 9 Ah

EMI/RFI Filtration:

- Yes

Cables:

- Power cable to suit Samoa country standard plug.
- USB cable to connect between computer port and UPS for software monitoring and control.

Warranty:

- Product Warranty Minimum Period (Year): 5
- Battery Warranty minimum period of 2 years, preferred warranty and support period is 5 years in-line with main unit.

G6-2: Smart UPS Rack/Tower - 3kVA Full-Online Double Conversion Sinusoidal Output 240volt

3kVA Smart Online double conversion UPS with Surge Suppression and power filtering in Tower or 19" Rack mount. APC Smart online UPS double conversion or equivalent.

Electronics Design Topology:

- On-line double conversion with PFC (Power Factor Correction) system with pure sine wave output.

Battery Capacity:

- Minimum 3000VA up to 3500VA

Configuration:

- Tower or 19" Rack mount
- If 19" rack mount is specified mounting rack slides and hardware to be supplied.

Phase:

- Single Phase

Input Voltage Range:

- 190-276V +/- 5%

Nominal Voltage:

- 200/208/220/230/240V (selectable to suit country of installation)

Frequency:

- 50/60 Hz auto-select (selectable to suit country of installation)

Frequency Range:

- 45-65 Hz +/- 5%

Output Frequency:

- 50/60 Hz auto-select, frequency converter as standard

On Battery Output

- Waveform: Pure Sine Wave

Battery Management:

- Temperature compensated charging method (user selectable), automatic battery test, deep discharge protection, automatic recognition of external battery units.

UPS Output Power Receptacles:

- Minimum of four (4) power outlets (must include minimum four (4) power outlets for multi-monitors workstations) with minimum of two (2) outlets per power group

User Interface:

- Graphical LCD display default to “English”

Communication Ports:

- 1 USB port (for configuration and automated monitoring by supplied software).
- Installed RJ-45 Ethernet port for SNMP and Remote management capability to enable monitoring and controlling of the UPS through the Remote Management. Support for Management tasks allowing scheduled shutdowns and reboots. If an additional network interface adapter is required to provide these functions it is to be supplied and installed with each base unit at no additional cost.

Software:

- Software to operate on MS-Windows Professional10 and Linux to provide UPS configuration management, diagnostics, operation dashboard, shutdown controls for order of outlet zones and conditions for automated shutdown of UPS.

Active Power Factor Correction (PFC) Compatibility:

- Yes

Battery Type:

- Must be Lithium Ion, sealed Lead-Acid type batteries will not be accepted

Battery Nominal Capacity:

- Minimum 40 Ah

EMI/RFI Filtration:

- Yes

Cables:

- Power cable to suit Samoa country standard plug.
- USB cable to connect between computer port and UPS for software monitoring and control.

Warranty:

- Product Warranty Minimum Period (Year): 5
- Battery Warranty minimum period of 2 years, preferred warranty and support period is 5 years in-line with main unit.

Component 7: Contractor Project Responsibilities: Management, Training and Operational Support Services

There are Project Management and other related services requirements that are common to all Components and are to be adhered to. This bid requires that all components are supplied and installed to the required standard. All cabling, testing and validation, configuration, training and commissioning must be supplied as part of this contract. The contract is to supply a complete turnkey environment with all bid components integrated and fully functional as a managed operational systems environment.

• Project Management and Implementation – Contractor’s Project Manager

The Contractor shall provide enough information to the Client ensure that their proposed contractors are suitably experienced in the design, installation and maintenance of all Systems supplied under this contract.

The Proposed Project Manager shall possess the following qualifications:

- BSC (equivalent or higher) in IT, Telecommunications and/or Engineering, or
- Minimum of 5 years Large (>\$US500K) Technical Project Management experience.
- Curriculum Vitae (CV) shall be submitted with the Contractors response.

A Project Manager shall be assigned by the Contractor to co-ordinate the work during the implementation of this “turn - key” project.

• Contractors Technical Personnel

The Contractors engineers should have proven and extensive Project Management & Development experience in the field of Telecommunications and Computer Networking Systems.

The Contractors project managers and engineers should be expert in designing systems and solutions to meet the customer’s stringent specifications, within strict project timescales and project budgets. This should be achieved by having a full understanding of current project management techniques. The Contractor must therefore;

- Design the solution to meet the full Specification
- Meet the Project Timescales
- Work within the budget
- Provide Cost effective and Reliable Solutions
- Provide Full documentation before Handover
- Ensure that all Operations & Maintenance Procedures are in place prior to Handover
- Provide 'On the Job' training to the clients Technical and Operational Staff
- Provide Comprehensive Handover Documentation, Drawings and Technical Manuals

In the event that the Contractor sends any unqualified staff to the client site then this will

only be acceptable if all such staff are accompanied by a Supervisor who meets all the required qualifications.

The supplier is to provide suitable candidates who have University Computing Degree level qualifications in relevant disciplines such as systems and software engineering. Industry professional qualifications in the areas of the supplied systems will also be required. Such as, Virtualisation (VMWare VCP), Cisco Network Administration (CCNA), Server Hardware, Red-Hat Linux and Microsoft Windows Servers System Administration.

- **Project Management and Design Team**

For any project to be successfully developed and completed it is essential that competent Project Management & Design Skills be implemented right from the Conceptual Stage. It is also essential that the Project Management & Design Team understands, not just the Technical or Commercial Implications of any actions, but also the local culture implications.

In order to build a successful Project Management & Design Team it is therefore essential that a 'good mix' of skills and expertise is utilized. This will necessitate the Project Management & Design Team to include both Local and Foreign Staff with Technical, Commercial, Regulatory and 'Local' expertise. Hence it is essential that the Project Management & Design Team consists of:

- Contractor/ Contractor Management and Commercial Expertise (Project Manager)
- Client Management and Commercial Expertise (Client Representative)
- Client Technical Expertise
- Contractor/ Contractor Technical Expertise
- Local Management, Administration & Logistical Expertise

This team will meet on a regular basis in order that the Project can be competently controlled, and that any problems can be quickly resolved.

In order to ensure that the Project Development is controlled and maintains the desired course, the Project Management & Design Team will have the responsibility to:

- Ensure the most suitable Technical Solutions for the installation.
- Maintain achievable Milestones and Targets
- Conduct ongoing Reviews and project Monitoring in order to ensure that the defined milestones and targets are achieved.

- **Project Implementation Team**

The Project Management and Design Team shall decide all Technical Design issues.

In addition, the technical members of this team will form the core of a 'Project Implementation Team' who will complete all Commissioning and testing requirements for all installed equipment.

It is proposed that this 'Project Implementation Team' consist of the following members:

- Contractor/ Contractor Management and Commercial Expertise (Project Manager)
- Client Management and Commercial Expertise (Client Representative)

- Client Technical Expertise
- Contractor/ Contractor Technical Expertise

- **Project Design and Planning Phase**

System Design Philosophy

The Contractor will undertake a “turn-key” project to implement the above systems and ensure complete integration of all equipment supplied under this contract.

The Contractor should optimize his proposed system design to ensure:

- High system and equipment reliability
- For operational areas no single point of failure
- High MTBF values for equipment
- Low MTTR values
- Efficient channel usage
- Alternative routing for system and equipment failure

The network configuration, including equipment and systems, offered by the Contractor to meet the requirements of this specification should also be in accordance with the Communications Policy of the Government of Samoa.

Quality Assurance and Quality Checking

The Contractor is required to submit a Quality Assurance and Quality Checking Plan / procedure relating to manufacturing, performance testing of the equipment / systems being offered.

The Contractor is required to submit their copy and also copies of any certification of their major Sub-Contractors relating the latest ISO series of recommendations.

Implementation Plan

Due to the nature of this project, a predefined Implementation Plan must be put in place to ensure its correct and timely completion. A draft Project implementation plan must be included in the ICB response document and will be used for initial evaluation purposes by the client.

On award of contract the Contractor will become the Main Contractor (“The Contractor”) and will develop a specific schedule of events for this project and have this Implementation Plan fully optimized and agreed by the client representative.

Clarification Phase

During this phase a draft system Design and Implementation Schedule will be discussed with the client. Clarifications will then allow the Contractor to present a clear and finalized Scope of Supply, which will be agreed between the Contractor and the client.

Site Survey Phase

On completion of the Clarification Phase, a Site survey of each location will take place. This

will allow the Contractor to determine the required system configuration, Installation materials, and actual Scope of Work for each location.

As part of the Site Survey Phase, the Contractor will:

- Make Physical Analysis of the proposed communications facilities and links.
- Identify any optional configurations.
- Evaluate the situation and condition of the premises where the Communications Equipment is to be installed.
- Determine the technical requirements and the cost of installing equipment at the site.
- Make a computer analysis of the proposed Communications Options (if applicable).

All major Sub-Vendor orders will be specified early on during the System Design Phase so that equipment costs and deliveries can be achieved within the required timescales.

Full system analysis will be done 'On-Site' during the site survey phase and detailed Technical Analysis completed using a combination of physical survey's and computer modelling.

Design Review Phase

The Design Review will address the final Contracted Scope of Work and defined Timescales, confirming that all of the Pre-Contract Award/Contract Negotiations stage clarifications have been incorporated into the Overall project requirements, and that the Site Survey results have been clearly included in the Scope of Supply.

The Contractor will make final allocation of staff to Manage, Control and Complete the overall project to the satisfaction of the client.

This phase will include the generation of all Detailed Documentation required for this project. Project supplied documentation must be agreed by the client so that they can ensure that the Overall System Design meets with their requirements.

Transportation and Logistics

The Contractor must coordinate with the client for all the Transportation and Logistical matters in relation to the Complete Installation of all equipment. Specifically, the Contractor will ensure that the following tasks are completed correctly:

- Transport by land, ocean, river or air (or combined) from the designated warehouse location to the client's designated Cargo handling agent.
- Coordinate warehousing at designated warehouse locations with the client.

• Operational Managed Services

Overview

The Contractor shall be expected to provide operational managed support services onsite for an agreed period of time

Operational support services will cover the following:

- All Hardware Systems and Equipment

- All Software Applications and Solutions

Operational Maintenance and Support

- **Maintenance Philosophy**

The maintenance philosophy is that the Network Management sub-system and the built-in test equipment shall be sufficiently comprehensive to indicate a failure, and where relevant, identify which module requires replacement to restore the system to full functionality.

Under first line maintenance complete equipment and faulty modules shall be replaced from the spares holding. The replacement module shall not require major adjustment in the field.

Faulty modules shall be sent to the Contractor's central repair depot.

The Contractor should establish in country second level maintenance facilities.

The Contractor will give details of his maintenance philosophy with regard to the above for this project.

Maintenance Personnel

1st Line support/investigation will be undertaken by the Purchaser Technical staff with escalation and advice provided by the Contractor. The Contractor shall describe in detail their proposed solution to fill this obligation within their ICB response document.

2nd Line Support for all systems will be supplied by the Contractor's Maintenance Personnel and shall be provided for at least 5 years after the issuance of the Final Acceptance Test Certificate.

Provision of Spares for the Network

The Contractor will be responsible for providing a recommended list of 5-year spares for all major system components to allow the RTO specified to be met.

Spares Supply Escalation Clause

The Contractor should also state the spares supply escalation clause which will become effective when the Clients spares holding reduces to a critical level. This escalation clause must define the maximum delivery period for the delivery of any spares required in order to ensure that the Clients critical spares level is above the pre-defined minimum level.

Planned Maintenance Routines (PMR)

Prior to Handover and Acceptance by the client the Contractor must produce the following documentation essential for future Planned Maintenance Routine (PMR) completion:

- System Inventory / Asset List
- Detailed PMR's for all systems
- Documentation for all systems [detailed drawings and configurations etc. 'as built documentation']
- Detailed Planned Maintenance (PM) Schedule

Complementing the Contractors Operational Managed Services function and to ensure that the client has adequate support during the five years of Operations the Contractor must also nominate 24-hour Help Desk Facility with an On-Call Hotline telephone number (in operation 24 hours / day 365 days / year).

The Operation of this Help Desk facility is defined in the “Service Level Agreement (SLA)” section of this specification (Annex 2). In addition, during the first 2 years after Final Acceptance the Contractor shall:

- Engage the Client’s technical staff on all PM activities to ensure that the client staff are experienced in completing PMR’s correctly.
- Provide detailed reports on all activities and findings.
- Continually strive to improve the system reliability and functionality.
- Train client staff to operate the PMR’s independently.
- Continually monitor Client staff’s abilities to carry out all PMR, operational and maintenance support functions.
- Provide 24/7/365 Call-Out support (i.e. 2nd Line Maintenance).

• **Customer Service Requests [CSR]**

Introduction

The Client requires the provision of customer driven support services. It is therefore essential that the Contractor is equally committed to provide such quality of services.

In order to promote the Client's commitment to this philosophy, the Contractor must provide a Maintenance and Support Service with Service Levels Agreed [SLA].

Service Levels

| Service Level | Description | Additional Details |
|--|--|--|
| 1 st Line (Tier) Site Support | 1-hour response time for client technical staff during normal working hours (Mon-Fri 9:00 to 17:00, Sat 9:00 to 1200). 4-hour response time for client technical staff during non-business working. | If escalation required: CSR is sent before 16:00 on a working day, Service Response must be made on the same day. CSR is sent after 16:00 [11:00 on Saturday], Service Response will be made the next working day. |
| Contractor 2nd Line (Tier) On-Call Support | 2 hours to confirm receipt of the CSR to the Client Helpdesk Coordinator. 2 hours response time to call the client and confirm to Client Helpdesk the next step in the CSR process [during normal working | CSR is sent before 17:00 on a working day, Service Response must be made on the same day. CSR is sent after 17:00 [12:00 on Saturday], Service Response will be made the next working day. |

| | | |
|--|--|---|
| | hours (Mon-Fri 9:00 to 21:00, Sat 9:00 to 1600)]. | |
| Contractor 2 nd Line Onsite Support | Rectification of issue as per Annex 2 RTO including contacting the client, plus travel time. | |
| Fault Clearance | All faults reported to the Contractor must be cleared within Annex 2 specified RTO service level of receiving the CSR. | Failure to clear any such CSR's within this timeframe must be immediately advised to Client Helpdesk Coordinator for further actions. |

CSR Handling Operation

The Contractor will act as the Point of Contact for the manufacturer for any CSR associated with supported equipment and or services.

- Client staff will contact the Contractors Call Centre initially, which will then have the CSR sent to the Technical Support Team (TST) contact point.
- The Contractor will issue a unique Numeric Log Number for the CSR. All further correspondence between the Contractor and Client staff will refer to this number.
- If the TST cannot clear the fault they will then have the CSR sent to the Contractors 2nd Line support contact point (SLS).
- The SLS will respond to the CSR within the maximum time specified by the 'Level of Service' [defined above]. On receiving the CSR, the SLS will co-ordinate all necessary activities, as required.
- The Contractor will regularly update the relevant CSR database entry and inform the client of any changes in the status of the CSR.
- When the confirmed disposition of the fault has been determined, The Contractor will arrange to provide equipment, services and or manpower in order to clear the CSR within the timescales defined by the 'Level of Service'.
- If necessary, the Client will provide additional assistance, services and or manpower in order to clear the CSR within the timescales defined by the 'Level of Service'.
- On fault clearance the Contractor will complete and clear the CSR database entry.

- **Staff Training Requirements**

Training Plan

The Contractor will provide a training plan index based on the above. Training courses may be conducted at the Client's location or an external location. Full training program and travel

costs should be provided within the ICB response document.

After award of contract the Contractor must submit all training plans to the client for approval. These plans must be submitted at least 4 weeks prior to any planned training courses.

The Contractor must also inform the client of any future or additional training requirements that they foresee throughout the lifetime of the project implementation and managed services operations period.

Training Records Database

A record of all training provided by the Contractor to all client staff must be submitted to the Client within 4 weeks of the completion of any training, or phase of training (if a Phased program is implemented).

Training Evaluation and Monitoring

The benefits of training activities undertaken by the client's staff / teams should be reviewed by the Contractor. This review may include the testing of staff on a regular basis and to recognized industry standards.

4. Drawings

A list of drawings in the Technical Specifications for the Goods and Related Services are listed below and forms part of the Bidding Documents.

An electronic copy of the Technical Specifications for the Goods and Related Services may be issued for the convenience of Bidders and has no status under the Contracts. It is the Bidder's sole responsibility to validate the electronic copy of the Technical Specifications for the Goods and Related Services against the printed hard copy issued for bidding

This Bidding Document include **the following** drawings.

| List of Drawings | | |
|------------------|---|---|
| Drawing No. | Drawing Name | Purpose |
| Figure 1 | Schematic representation of current component design supporting the MHEWS components in Samoa | System Integrator Consultant Drawing of the schematic representation of current component design supporting the MHEWS components in Samoa |
| Figure 2 | Current Ministry Network Connections between Divisions | System Integrator Consultant Drawing of the Current Ministry Network Connections between Divisions |
| Figure 3 | Current Systems Architecture | System Integrator Consultant Drawing of the Current Systems Architecture |
| Figure 4 | Schematic representation of proposed weather forecasting and warning system for the MHEWS. | System Integrator Consultant Drawing of the Schematic representation of proposed weather forecasting and warning system for the MHEWS. |

| | | |
|--|--|--|
| Figure 5 | Schematic representation of proposed IT end-state architecture supporting the MHEWS components in Samoa. | System Integrator Consultant Drawing of the Schematic representation of proposed IT end-state architecture supporting the MHEWS components in Samoa. |
| Figure 6 | Schematic representation of MHEWS IT architecture for this contract | System Integrator Consultant Drawing of the Schematic representation of MHEWS IT architecture for this contract |
| Figure 7 | NEOC Datacentre Solutions Architecture | System Integrator Consultant Drawing of the NEOC Datacentre Solutions Architecture |
| Figure 8 | SMD Campus Solutions Architecture | System Integrator Consultant Drawing of the SMD Campus Solutions Architecture |
| Figure 9 | WRD (Ministry Tatte Building) Solutions Architecture | System Integrator Consultant Drawing of the WRD (Ministry Tatte Building) Solutions Architecture |
| Figure 10 | NEOC MicroDC Rack #1 Layout | System Integrator Consultant Drawing of the NEOC MicroDC Rack #1 Layout |
| Figure 11 | NEOC MicroDC Rack #2 Layout | System Integrator Consultant Drawing of the NEOC MicroDC Rack #2 Layout |
| Figure 12 | SMD-Seismic Server Room (standard) Rack #1 | System Integrator Consultant Drawing of the SMD-Seismic Server Room (standard) Rack #1 |
| Figure 13 | SMD (Admin Building) Server Room (standard) Rack #1 | System Integrator Consultant Drawing of the SMD (Admin Building) Server Room (standard) Rack #1 |
| Figure 14 | Tatte Building - WRD (standard) Rack #1 | System Integrator Consultant Drawing of the Tatte Building - WRD (standard) Rack #1 |
| Error! eference source not found. | NEOC Server Room (MHEWS Datacentre) | Building contractor drawing of server room with racks |

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|-----------|---|--|
| Figure 16 | Example of Good practice cable wiring and Patch Panel | System Integrator Consultant Illustration of Good Practice cable wiring and patch panel |
| Figure 17 | Fibre Cable Patch Panels and through terminations | System Integrator Consultant Illustration of Fibre cable patch panels and through terminations |
| Figure 18 | MHEWS WAN with site to site VPNs Diagram end-state | System Integrator Consultant Drawing of the MHEWS WAN with site to site VPNs Diagram end-state |
| Figure 19 | Dual Firewall Zoned DMZ and LAN | System Integrator Consultant drawing of the Dual Firewall Zoned DMZ and LAN |
| Figure 20 | Single Firewall Zoned DMZ and LAN | System Integrator Consultant drawing of the Single Firewall Zoned DMZ and LAN |
| Figure 21 | MHEWS Data Sharing & Replication Architecture | System Integrator Consultant drawing of the MHEWS Data Sharing & Replication Architecture |
| Figure 22 | Traditional and Virtual Infrastructure models | System Integrator Consultant Drawing of the Traditional and Virtual Infrastructure models |
| Figure 23 | VI Physical Conceptual Architecture | System Integrator Consultant Drawing of the VI Physical Conceptual Architecture |
| Figure 24 | Indicative VI Physical Design | System Integrator Consultant Drawing of the Indicative VI Physical Design |

5. INSPECTIONS AND TESTS

The following inspections and tests that shall be performed are included in Technical Specifications for the Goods and Related Services as listed below and forms part of the Bidding Documents.

An electronic copy of the Technical Specifications for the Goods and Related Services may be issued for the convenience of Bidders and has no status under the Contracts. It is the Bidder's sole responsibility to validate the electronic copy of the Technical Specifications for the Goods and Related Services against the printed hard copy issued for bidding

Inspections and Testing

- **Site Survey Inspections**

On completion of the Clarification Phase, a Site survey is available for the bidder to undertake at each location. This will allow the Contractor to determine the required system configuration, Installation materials, and actual Scope of Work for each location.

As part of the Site Survey Phase, the Contractor will:

- Make Physical Analysis of the proposed ICT facilities and communications links.
- Identify any optional configurations.
- Evaluate the situation and condition of the premises where the ICT Equipment is to be installed.
- Determine the technical requirements and the cost of installing equipment at the site.
- Make a computer analysis of the proposed ICT Options (if applicable).

All major Sub-Vendor orders will be specified early on during the System Design Phase so that equipment costs and deliveries can be achieved within the required timescales.

Full system analysis will be done 'On-Site' during the site survey phase and detailed Technical Analysis completed using a combination of physical survey's and clarifications as required.

- **Factory Acceptance Testing**

Attendance

Where requested by the client, factory acceptance testing may be undertaken in the presence of the client's inspector.

Factory Test Schedule Provision

The Factory Acceptance Test procedures and schedules shall be provided by the Contractor 6 weeks prior to the tests and approved by the client. These tests shall demonstrate that the system(s) and equipment function's in conformity with the specifications.

If additional tests are required by the client then the Contractor will be informed at least 4 weeks prior to Factory Testing.

Factory Testing shall then be done in accordance with the test procedures using certified calibrated test equipment.

The client may request that some equipment be tested under environmental conditions to be encountered in service i.e. humidity, waterproof and water -resistant.

All Factory Acceptance Test schedules shall be certified by the Inspector (if in attendance) and be shipped with the relevant equipment.

- **Site Delivery and Pre-Installation Acceptance Testing**

At delivered site all hardware and software are to be unpacked, install and burn-in tests are to be performed to ensure system is 100% healthy and operation ready for client acceptance. These services are for all devices supplied at the client sites.

- On delivery, all goods are to be visually checked for any damage to boxes, pallets, etc. Damage may be dents in boxes, crushed corners, torn or cut corners or any visual evidence of concern such as water marks, etc. If visual signs are found the goods are not be accepted until they are visually checked by the supplier to ensure there is no damage or functional degradation.
- All equipment on delivery to site is to be placed in an internal air-conditioned room for minimum 3 days before unpacking to allow settling and temperature normalisation.
- Equipment is to be unpacked in client nominated staging area and is not to be undertaken inside datacenter/server rooms.
- All packaging and excess waste is to be taken off-site and disposed of in an environmentally friendly manner by the supplier.
- After initial rack and stack installation of equipment all devices are to undergo factory burn-in diagnostics prior to any further installation or configuration to validate equipment from factory is functioning.

- **Implementation and Final Acceptance Testing**

The Contractor is to provide plan of functional and non-functional testing for all specified goods in the schedule (apart from non-electronic equipment). The implementation acceptance test plan is to be provided with the bid proposal. Testing is to be conducted and witnessed with the client on-site, once the report is made available to the client it will be reviewed for installation acceptance by client. The plan should include all tests that will prove correct operation at both a unit and fully integrated system level. The following table provide key areas for testing however is not a complete test plan which the bidder is expected to provide as part of the bid.

The following inspections and tests shall be performed during unit installation and post system implementation:

| Inspection/ Test Name | Component, Item # & description | Purpose and instructions The Supplier will, in attendance of the Client Representative(s), demonstrate the expected and correct operation of goods demonstrating the correct installation, configuration and operation of provided goods: |
|--|---|---|
| Quality and Performance Tests after Installation | For all Goods | <ul style="list-style-type: none"> - Visual check of all unpacked components - Visual quality - Ensure proper system start-up. - Verify and update if required for proper firmware version. - Document, sign, and date all test results. |
| Quality and Performance Tests after Installation | Goods Schedule: Component 1, Component 6. | <ul style="list-style-type: none"> - Verify proper firmware bypass operation. - Verify proper maintenance bypass switch operation. - Verify system set points. - Verify proper inverter operation and regulation circuits. - Simulate utility power failure. - Verify proper charger operation - For microDC units verify system management console is operational and available via network connection; verify that all sensors are operating correctly; verify that rack cooling (air-conditioning) is installed and functioning correctly. |
| Quality and Performance Tests after Installation | Goods Schedule: Component 2, Component 3, Component 4. | <p>Individual Unit testing:</p> <ul style="list-style-type: none"> - Network ports functional at correct port speeds; - All N+1 availability testing, such as PSU, RAID drive. Simulate utility power failure on each PSU (one at a time) for dual power devices. <p>Full Integrated System Testing:</p> <ul style="list-style-type: none"> - Ensure proper system start-up and in correct order if required. - Check and validate network switch port and on each switch and host port for correct VLAN configuration, - N+1 testing at system level, <ul style="list-style-type: none"> - simulate failure of network port on host (remove cable), - simulate failure of network switch (remove power), |

| | | |
|--|------------------------------|---|
| | | <ul style="list-style-type: none"> - simulate failure of network router (remove power, remove WAN connection), - simulate failure of SAN for dual controller units, - simulate failure of NAS for unit configured in HA mode, - simulate failure of individual hosts in virtual cluster ensuring correct automated continuous operation is maintained and Virtual Machines automatically migrate and restart. - Validate that LAN network zones are configured and functioning correctly with zone Access control. - Validate WAN router operation for failover at router, link and access control with management interfaces are functional correctly. |
| Quality and Performance Tests after Installation | Goods Schedule: Component 5. | <ul style="list-style-type: none"> - Operating System requested is installed and fully up to date with required patches, - Additional specified software such as Anti-virus is installed fully up to date with required patches, - Validate all screens are configured and operating correctly, - If installed standalone UPS is connected and configured with OS for auto-safe-shutdown, - Validate connected and configured onto correct VLAN. |

• **Ongoing System and Equipment testing**

Preventative systems and equipment maintenance processes and procedures are to be supplied under this Contract to allow the Purchaser to be periodically functionally test every 6 months. These periodic tests shall not result in system or equipment outages.

Completed data sheets relating to the above are to be submitted to the Contractor's maintenance personnel for review and feedback to plan any required mitigation.

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. Corrupt and Fraudulent Practices

- 3.1 The Bank requires compliance with its policy in regard to corrupt and fraudulent practices, as set forth in Appendix 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
- 9.2 (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 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 The Supplier shall permit and shall cause its subcontractors to permit, the Bank and/or persons appointed by the Bank to inspect the Supplier's offices and all accounts and records relating to the Contract and the submission of the bid, and to have such accounts and records audited by auditors appointed by the Bank if requested by the Bank. The Supplier's and its Subcontractors' and consultants' attention is drawn to Sub-Clause 3 (Fraud and Corruption) which provides, inter alia, that acts intended to materially impede the exercise of the Bank's inspection and audit rights provided for under this Sub-Clause 11.1 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.

- 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. 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 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 GCC Clause 3, 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 TO GENERAL CONDITIONS

Bank's Policy- Corrupt and Fraudulent Practices

(text in this Appendix shall not be modified)

Guidelines for Procurement of Goods, Works, and Non-Consulting Services under IBRD Loans and IDA Credits & Grants by World Bank Borrowers, dated January 2011:

“Fraud and Corruption:

1.16 It is the Bank's policy to require that Borrowers (including beneficiaries of Bank loans), bidders, suppliers, contractors and their agents (whether declared or not), sub-contractors, sub-consultants, service providers or suppliers, and any personnel thereof, observe the highest standard of ethics during the procurement and execution of Bank-financed contracts.¹ In pursuance of this policy, 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;²
 - (ii) “fraudulent practice” is any act or omission, including a misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain a financial or other benefit or to avoid an obligation;³
 - (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;⁴

¹ In this context, any action to influence the procurement process or contract execution for undue advantage is improper.

² For the purpose of this sub-paragraph, “another party” refers to a public official acting in relation to the procurement process or contract execution. In this context, “public official” includes World Bank staff and employees of other organizations taking or reviewing procurement decisions.

³ For the purpose of this sub-paragraph, “party” refers to a public official; the terms “benefit” and “obligation” relate to the procurement process or contract execution; and the “act or omission” is intended to influence the procurement process or contract execution.

⁴ For the purpose of this sub-paragraph, “parties” refers to participants in the procurement process (including public officials) attempting either themselves, or through another person or entity not participating in the procurement or selection process, to simulate competition or to establish bid prices at artificial, non-competitive levels, or are privy to each other's bid prices or other conditions.

- (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;⁵
- (v) "obstructive practice" is:
 - (aa) 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
 - (bb) acts intended to materially impede the exercise of the Bank’s inspection and audit rights provided for under paragraph 1.16(e) below.
- (b) will reject a proposal for award if it determines that the bidder recommended for award, or 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) will declare misprocurement and cancel the portion of the loan allocated to a contract if it 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 or the implementation 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) will sanction a firm or individual, at any time, in accordance with the prevailing Bank’s sanctions procedures,⁶ including by publicly declaring such firm or individual ineligible, either indefinitely or for a stated period of time: (i) to be awarded a Bank-financed contract; and (ii) to be a nominated⁷;

⁵ For the purpose of this sub-paragraph, “party” refers to a participant in the procurement process or contract execution.

⁶ A firm or individual may be declared ineligible to be awarded a Bank financed contract upon: (i) completion of the Bank’s sanctions proceedings as per its sanctions procedures, including, inter alia, cross-debarment as agreed with other International Financial Institutions, including Multilateral Development Banks, and through the application the World Bank Group corporate administrative procurement sanctions procedures for fraud and corruption; and (ii) as a result of temporary suspension or early temporary suspension in connection with an ongoing sanctions proceeding. See footnote 14 and paragraph 8 of Appendix 1 of these Guidelines.

⁷ A nominated sub-contractor, consultant, manufacturer or supplier, or service provider (different names are used depending on the particular bidding document) is one which has either 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.

- (e) will require that a clause be included in bidding documents and in contracts financed by a Bank loan, requiring bidders, suppliers and contractors, and their sub-contractors, agents, personnel, consultants, service providers, or suppliers, to permit the Bank to inspect all accounts, records, and other documents relating to the submission of bids and contract performance, and to have them audited by auditors appointed by the Bank.”

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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.

[The Purchaser shall select insert the appropriate wording using the samples below or other acceptable wording, and delete the text in italics]

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| GCC 1.1(i) | The Purchaser's Country is: <i>Government of the Independent State of Samoa</i> |
| GCC 1.1(j) | The Purchaser is: <i>Ministry of Natural Resources and Environment</i> |
| GCC 1.1 (o) | The Project Site(s)/Final Destination(s) is/are: Disaster Management Office National Emergency Operation Center Tuana'imato <u>SAMOA</u> |
| 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 <i>INCOTERMS 2020</i> |
| GCC 5.1 | The language shall be: <i>English</i> |

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| GCC 8.1 | <p>For <u>notices</u>, the Purchaser's address shall be:</p> <p>Address: Ms. Frances Reupena Chief Executive Officer Ministry of Natural Resources and Environment</p> <p>Attention: <i>Lepale Aussie Simanu</i> <i>Acting ACEO – Disaster Management</i> <i>Ministry of Natural Resources and Environment</i> <i>P.O. Box Private Mail Bag</i> City: <i>Apia</i> Country: <i>Samoa</i></p> <p>Telephone: 685 32759 /67200 Electronic mail address: aussie.simanu@mnre.gov.ws (copy: lina.esera@mnre.gov.ws)</p> <p>For <u>notices</u>, the Supplier's address shall be:</p> |
| GCC 9.1 | <p>The governing law shall be the law of: <i>Government of the Independent State of Samoa</i></p> |
| GCC 10.2 | <p>The rules of procedure for arbitration proceedings pursuant to GCC Clause 10.2 shall be as follows:</p> <p>(a) Contract with foreign Supplier:</p> <p>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.</p> <p>(b) Contracts with Supplier national of the Purchaser's Country:</p> <p>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.</p> |
| GCC 12 | <p>Add sub-clause GCC 12.2 as follows:</p> <p>The scope of supply and services include design, supply, delivery, installation, integration and commissioning of individual Units and a fully integrated Multi-Hazard Early Warning System (MHEWS), and system operational support services for a period of five years, in accordance with the requirements detailed in Section VII, Schedule of Requirements.</p> |

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| GCC 13.1 | <p>Details of Shipping and other Documents to be furnished by the Supplier are:</p> <p>For Goods Supplied from Outside the Purchaser's Country:</p> <ul style="list-style-type: none"> a) A negotiable bill of lading or airway bill b) Commercial invoice showing description, quantity, unit price and total amount c) Packing list identifying contents of each package d) Supplier's factory shipping details e) All Inspection certificates issued f) Certificate of Origin g) Manufacturer's or Authorised Dealer's warranty certificate; and h) Insurance certificates (marine and inland transportation) <p>The above documents shall be received by the Purchaser before arrival of the Goods at the port/airport in Samoa and, if not received, the Supplier will be responsible for any consequent expenses.</p> <p>The Supplier shall clear and offload the Goods at the port of destination, and pay for customs duties and related taxes. Such duties and taxes will be reimbursed by the Purchaser, on receipt of supporting documents.</p> <p>For Goods Supplied from Within the Purchaser Country (already imported or manufacture in the country)</p> <ul style="list-style-type: none"> (a) Transport Receipt (b) copies of the packing list identifying contents of each package; (c) Inland Transportation Insurance Certificate (d) copies of the supplier's invoice showing Goods' description, quantity, unit price, and total amount; (e) Manufacturer's or Authorized Dealer's warranty certificate; (f) Certificate of Origin <p>All Goods shall be delivered to the final destination sites by the Supplier and the goods should be packed according to the internationally acceptable requirements. The Supplier shall unpack, install and commission the Goods. All packing and excess rubbish shall be collected by the Supplier, taken off-site and disposed of in an environmentally friendly manner while also observing all local and national laws and regulations.</p> |
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| GCC 14 | <p>Add sub-clauses GCC 14.2 to 14.6 as follows:</p> <p>14.2 The Supplier shall conduct all activities with due care and diligence, in accordance with the Contract and with the skill and care expected of a competent provider of information technologies, information systems, support, maintenance, training, and other related services, or in accordance with best industry practices. In particular, the Supplier shall provide and employ only technical personnel who are skilled and experienced in their respective callings and supervisory staff who are competent to adequately supervise the work at hand.</p> <p>Code of Conduct</p> <p>14.3 The Supplier shall have a Code of Conduct for its and Subcontractors' personnel employed for the execution of the Contract at the Project Site/s.</p> <p>The Supplier shall take all necessary measures to ensure that each such personnel is made aware of the Code of Conduct including specific behaviors that are prohibited, and understands the consequences of engaging in such prohibited behaviors.</p> <p>These measures include providing instructions and documentation that can be understood by such personnel, and seeking to obtain that person's signature acknowledging receipt of such instructions and/or documentation, as appropriate.</p> <p>The Supplier shall also ensure that the Code of Conduct is visibly displayed in the Project Site/s as well as, as applicable, in areas outside the locations accessible to the local community and any project affected people. The posted Code of Conduct shall be provided in languages comprehensible to the Supplier's and its Subcontractor's personnel, Purchaser's personnel and the local community.</p> <p>14.4 The Supplier shall, in all dealings with its labor and the labor of its Subcontractors currently employed on or connected with the Contract, pay due regard to all recognized festivals, official holidays, religious or other customs, and all local laws and regulations pertaining to the employment of labor.</p> <p>14.5 The Supplier, including its Subcontractors, shall comply with all applicable safety obligations. The Supplier shall at all times take all reasonable precautions to maintain the health and safety of its and Subcontractors' personnel employed for the execution of Contract at the Project Site/s.</p> <p>Training of Supplier's Personnel</p> <p>14.6 The Supplier shall provide appropriate training to relevant Supplier's and Subcontractors' personnel on any applicable environmental and social</p> |
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| | <p>aspect of the Contract, including appropriate sensitization on prohibition of Sexual Exploitation and Abuse (SEA), health and safety.</p> <p>As stated in the Purchaser's Requirements or as instructed by the Project Manager, the Supplier shall also allow appropriate opportunities for the relevant personnel to be trained on any applicable environmental and social aspects of the Contract by the Purchaser's personnel and/or other personnel assigned by the Purchaser.</p> |
| GCC 15.1 | The prices charged for the Goods supplied and the related Services performed <i>shall not</i> be adjustable. |
| GCC 16.1 | <p>GCC 16.1—The method and conditions of payment to be made to the Supplier under this Contract shall be as follows:</p> <p>Payment shall be made in the currencies of contract.</p> <p>Payment of each installment will be paid through a direct payment in favor of the Supplier in its designated account. All bank charges will be borne by the Supplier.</p> <p>Payment for Goods supplied from abroad:</p> <p>Payment of foreign currency portion shall be made in <i>[insert currency of the Contract Price]</i> in the following manner:</p> <ul style="list-style-type: none"> (i) Advance Payment: Ten (10) percent of the Contract Price shall be paid within thirty (30) days of signing of the Contract, and upon submission of 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. (ii) On Shipment: Fifty (50) percent of the Contract Price of the Goods shipped shall be paid upon receipt of the goods and upon submission of documents specified in GCC Clause 13. (iii) 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. (iv) On Commissioning: Twenty (20) percent of the Contract Price shall be paid to the Supplier within sixty (60) days from the date of the acceptance certificate for satisfactory commissioning of all Units and fully integrated MHEWS Information System. (v). Upon Completion: Ten (10) percent of the Contract Price shall be paid to the Supplier within thirty (30) days from the date of acceptance |

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| | <p>certificate upon successful completion of staff training for the MHEWS Information System.</p> <p>Payment of local currency portion shall be made within sixty (60) 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.</p> <p>Local customs duties and related taxes paid by the Supplier for “to be imported” Goods shall be reimbursed by the Purchaser, on receipt of supporting documents.</p> <p>Payment for Goods supplied from within the Purchaser’s Country:</p> <p>Payment for Goods supplied from within the Purchaser’s Country shall be made in Samoan Tala, as follows:</p> <ul style="list-style-type: none"> (i) Advance Payment: Ten (10) 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. (ii) On Delivery: Fifty (50) 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: Ten (10) percent of the Contract Price shall be paid to the Supplier within sixty (60) days after the date of the acceptance certificate for the respective delivery issued by the Purchaser. (iv) On Commissioning: Twenty (20) percent of the Contract Price shall be paid to the Supplier within sixty (60) days from the date of the acceptance certificate for satisfactory commissioning of all Units and fully integrated MHEWS Information System. (v). Upon Completion: Ten (10) percent of the Contract Price shall be paid to the Supplier within thirty (30) days from the date of acceptance certificate upon successful completion of staff training for the MHEWS Information System. <p>Payment for Related Services:</p> <p>Payment for Related Services shall be made, as follows:</p> <ul style="list-style-type: none"> (i) Advance Payment: Ten (10) percent of the Contract Price for Related Services shall be paid within thirty (30) days of signing of the Contract against a simple receipt and a bank guarantee for the |
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| | <p>equivalent amount and in the form provided in the bidding documents or another form acceptable to the Purchaser.</p> <p>(ii) On Completion: Seventy (70) percent of the Contract Price of each item of service shall be paid on satisfactory completion of the respective service.</p> <p>(iii) On Commissioning: Twenty (20) percent of the Contract Price shall be paid to the Supplier within sixty (60) days from the date of the acceptance certificate for satisfactory commissioning of all Units and fully integrated MHEWS Information System.</p> <p>Payment for Component 8, Post-Contract Support Services, will be made under a separate Service Agreement.</p> |
| GCC 16.5 | <p>The payment-delay period after which the Purchaser shall pay interest to the supplier shall be 60 days.</p> <p>The interest rate that shall be applied is: 2.8% <i>calculated from the date by which the payment should have been made up to the date when the late payment is made.</i></p> |
| GCC 18.1 | <p>A Performance Security <i>shall be: 10% of the contract price</i></p> <p><i>The performance security may be reduced to 5% after satisfactory commissioning of the fully integrated System.</i></p> |
| GCC 18.3 | <p>If required, the Performance Security shall be in the form of: <i>Bank Guarantee</i></p> <p>If required, the Performance security shall be denominated in <i>a freely convertible currency acceptable to the Purchaser</i></p> |
| GCC 18.4 | <p>Discharge of the Performance Security shall take place: <i>but not later than twenty-eight (28) days following the expiration of the operational support period or extension thereof</i></p> |

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| GCC 23.2 | <p>The packing, marking and documentation within and outside the packages shall be: Standard address labels addressing Goods to:</p> <p>Address: Frances Reupena Chief Executive Officer Ministry of Natural Resources and Environment</p> <p>Attention: Lepale Aussie Simanu <i>Acting ACEO – Disaster Management</i> National Emergency Operation Center, Tuana'imato City: Apia Country: Samoa Telephone: +685 32759 / 67200 Email address: aussie.simanu@mnre.gov.ws (copy: lina.esera@mnre.gov.ws)</p> |
| GCC 24.1 | The insurance coverage shall be as specified in the Incoterms. |
| GCC 25.1 | <p>Responsibility for transportation of the Goods shall be as follows:</p> <p><i>The Supplier is required under the Contract to transport the Goods to the specified place of final destination within the Purchaser's Country, defined as the Project Site, transport to such place of destination in the Purchaser's Country, including insurance and storage, as shall be specified in the Contract, shall be arranged by the Supplier, and related costs are included in the Contract Price</i></p> |
| GCC 25.2 | <p>Incidental services to be provided are:</p> <ul style="list-style-type: none"> (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. |

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| GCC 26.1 | The inspections and tests shall be: as listed in the “5. Inspections and Tests” under Section VII Schedule of Requirements. |
| GCC 26.2 | <p>The Inspections and tests shall be conducted at: Apart from Factory Acceptance Test (FAT), during delivery at Project sites, as detailed in Schedule of Requirements.</p> <p><u>All factory tests schedules shall be certified by the Inspector (if in attendance) and such certificates shall be shipped with the relevant equipment.</u></p> |
| GCC 27.1 | The liquidated damage shall be: 1% of contract price per week |
| GCC 27.1 | The maximum amount of liquidated damages shall be: 10% of the contract price |
| GCC 28.3 | <p>The warranty, maintenance and support period for goods items are specified in Section VII – Schedule of Requirements.</p> <p>The contractor shall provide a full on-site repair or replacement warranty with support. Section VII – Schedule of Requirements provides the specification for each goods item, within the specification if an extended warranty period is required it will be specified for that item. If no separate warranty period is stated, the manufacturer warranty period applies which is to be a minimum of one (1) year.</p> <p>The warranty period in the schedule (hardware and supporting software) commences from when the full shipment of all goods for that schedule component (as per schedule in Section VII) are delivered to the specified final destination site.</p> <p>During the warranty support period, on-site repair and replacement services shall be provided at no extra cost inclusive of all parts, replacement goods including freight and service costs.</p> <p>Further details are provided in Annex 1 of the Supply Requirements - ADDITIONAL CONDITIONS FOR SUPPLY, WARRANTY & REPAIRS.</p> <p>For purposes of the Warranty, the places of final destinations shall be the Project sites as detailed in Schedule of Requirements.</p> |
| GCC 28.5 | The period for repair or replacement shall be: in accordance with the period specified in GCC/SCC 28.3 above. The expected service level for length of time to repair and make good is specified in Annex 2 of the Supply Requirements for “Support terms and service level requirements.” |

CONTRACT ANNEXURES

ANNEX 1: ADDITIONAL CONDITIONS FOR SUPPLY, WARRANTY & REPAIRS.

1. The Goods must be brought to Project sites mentioned in Price and Delivery Schedule by the Supplier and the goods should be packed according to the internationally acceptable requirements and be transported to the final destinations. The Supplier shall unpack, install and commission the Goods. All packing and excess rubbish is to be collected by the supplier, taken off-site and disposed of in an environmentally friendly manner while also observing all local and national laws and regulations.
2. The Supplier also warrants that the software and hardware supplied under the Contract are new, unused, and incorporate all recent improvements in design that materially affect the System's or Subsystem's ability to fulfill the Technical Requirements.
3. All supplied ICT equipment in this bid as per the goods schedule (for example: compute servers, storage devices, network equipment, workstations and any other electronic specified goods) will have a warranty period that commences only when the full shipment of all goods for that schedule component (as per schedule in annex 3) are delivered to the specified destination site. The warranty, maintenance and support period shall extend for a total length of five (5) years for goods (hardware and supporting software). During the five (5) year warranty, maintenance and support period: repair and replacement services, on-site if required by the Purchaser, will be provided at no cost.
4. Application software, firmware updates, device drivers and any software patches and updates for ICT goods supplied that provide enhancements, correct/fix defects and enhances cyber security hardening is to be supplied for a period as per para (3) in this annex. The Supplier is to provide a warranty/maintenance/support period ensuring operational use with full support by the OEM and the contract supplier for this specified period, equipment support end of life cannot be declared by the OEM or supplier during this warranty/maintenance support period.
5. If during the Warranty Period any defect should be found, the Supplier shall promptly in consultation and agreement with the purchaser regarding appropriate remedying of the defects, and at the expense of the supplier, repair, replace, or otherwise make good (as the Supplier shall, at its discretion, determine) such defect as well as any damage to the system caused by such defect. Any defective hardware that has been replaced by the supplier shall be returned to the Supplier at their cost via a pre-paid freight voucher or collect in person. The returned defective item will remain the property of the supplier.
6. For component failure: parts can be shipped to the site for replacement by Purchaser technical staff, this action is only after diagnosis has been agreed between Maintenance Supplier and the Purchaser Technical staff. By taking this action it is agreed that the purchaser will not void or breach any warranty or support conditions.

Annex 2: Support terms and service level requirements

The Recovery Time Objective (RTO) is described as the time an equipment (hardware or software) fault is reported to the supplier support desk to the time the fault has been rectified and functioning to the supplied specification.

The supplier must guarantee that the RTO for equipment that is not usable and will impact operational services be resolved within no more than two (2) calendar days. For failed equipment that is not critical for operational services, or equipment that still functions with minor problems and does not impact services the RTO for repair and satisfactory problem resolution is a maximum of five (5) business days.

On a case by case basis after initial diagnosis through the OEM service and support call Centre and if the Purchaser ICT support staff feel that an on-site technician is required the technician must respond and fix the problem including replacement parts within the defined RTO period. To assist timely replacement component failure, the Purchaser may elect to have parts shipped to the site for self-replacement. This action can only occur after agreed diagnosis and that this action will result in a faster RTO. By taking this action it is agreed that the Purchaser will not void or breach any warranty or support conditions.

If a particular category and model of supplied goods, i.e. such as a workstation or server model, have a reported rate of more than ten (10) equipment failures that affect operations in the first three (3) months after installation or are non-compliant to operating system versions as specified, the bidder on behalf of the OEM must action remediation and resolve the problem within two (2) calendar weeks from the date of notification by the Purchaser. If after the initial problem resolution there is further ten (10) equipment failures that affect operations over a three (3) months period the Purchaser reserves the right to have that equipment model replaced with a suitable newer model and alternate model of equal or higher specification within eight (8) weeks.

The replacement units are to be at no expense to the Purchaser including packing and shipping for return and delivery of new items. To assist operational transitioning the Purchaser will require a four (4) week overlap period from receiving the replacement equipment to the return of the faulty equipment.

The Purchaser operates a mission critical 24x7 public service, as such an Enterprise class support centre, knowledge base tools and readily available software and driver updates with supporting tools are deemed a mandatory requirement for a period of a minimum of five (5) years and at no cost during the warranty and extended support period.

Provision of on-site field technicians within RTO periods is expected during the warranty and support period at no cost. In the first two (2) years of operation a quarterly account management meeting at the Purchaser premises or an agreed on-line communications method is required to ensure the supplied goods and vendor support systems are operating to required service levels.

The Supplier will provide a 24x7 always available support call center and online resources access for each OEM equipment and to a minimum of three (3) nominated Purchaser IT support staff. Access to OEM support Centres and online resources will be at no cost including tiered support staff availability. Initial incident reporting will be via the OEM online portal or alternate online facility provided together with clear standard operating procedures and client user accounts to access online resources if required. Electronic acknowledgement of incident reports is to be provided within 30 minutes of logging including instructions as to actions that will be taken next.

Section X - Contract Forms

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Letter of Acceptance

[use letterhead paper of the Purchaser]

[date]

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

Subject: ***Notification of Award Contract No. PREPSamoaGoods13***

This is to notify you that your Bid dated *[insert date]* for execution of ***Contract No. PREPSamoaGoods13 for ICT Goods and Services for the National Emergency Operation Center and Multi-Hazard Early Warning System*** 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, 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) **THE GOVERNMENT OF THE INDEPENDENT STATE OF SAMOA** acting by and through the **HONORABLE TUILAEPA DR. SAILELE MALIELEGAOL, PRIME MINISTER AND MINISTER** responsible for the **MINISTRY OF NATURAL RESOURCES AND ENVIRONMENT**, and having its principal place of business at *Level 3, Tuiatua Tupua Tamasese Efi Building, Sogi, Samoa* (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., *Contract No. PREPSamoaGoods13 for ICT Goods and Services for the National Emergency Operation Center and Multi-Hazard Early Warning System [Supply, Delivery, Installation, Integration and Commissioning of Data Center ICT Infrastructure, Virtual Server Infrastructure, LAN/WAN Network, Performance Workstations and Peripherals (]* 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) the Letter of Bid
 - (c) the Addenda Nos. _____ (if any)
 - (d) Special Conditions of Contract
 - (e) General Conditions of Contract

- (f) the Specification (including Schedule of Requirements and Technical Specifications)
 - (g) the completed Schedules (including Price Schedules)
 - (h) 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 *Government of the Independent State of Samoa* on the day, month and year indicated above.


For and on behalf of the Purchaser

EXECUTED by the **HONOURABLE**)
TUILAIPA DR. SAILELE MALIELEGAOL, PRIME
MINISTER AND MINISTER for the **MINISTRY**
OF NATURAL RESOURCES AND ENVIRONMENT,)
 for and on behalf of the
GOVERNMENT OF THE INDEPENDENT)
STATE OF SAMOA))
 (“Purchaser”)

In the presence of:)

.....
 (Witness Name & Signature)

.....
 (Witness Designation)



.....
(Director Name & Signature)

.....
(Director Name & Signature)

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: Ms. Frances Reupena

Chief Executive Officer

Attn: Lepale Aussie Simanu

Acting ACEO Disaster Management

National Emergency Operation Center

Tuana'imato, Apia,

Samoa

Email Mail Address: aussie.simanu@mnre.gov.ws

(copy:lina.esera@mnre.gov.ws)

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. *PREPSamoaGoods13* dated *[insert date]* with the Beneficiary, for *ICT Goods and Services for the National Emergency Operation Center and Multi-Hazard Early Warning System [Supply, Delivery, Installation, Integration and Commissioning of Data Center ICT Infrastructure, Virtual Server Infrastructure, LAN/WAN Network, Performance Workstations and Peripherals]* (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.

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)]

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

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 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."

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.

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[signature(s)]

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