



**TERMS OF REFERENCE**  
**For the**  
**SUPPLY, DELIVERY, AND TESTING OF**  
**STORAGE SERVERS AND LAPTOPS**

**1. Rationale**

The climate conditions in the Philippines cause a variety of hydrometeorological hazards such as heavy rainfall and flooding during the wet season, and dry spell during the dry season. Aside from that, its geographical location exposes us to tropical cyclones (TCs) all year round, as well as to the impacts of the monsoons (Southwest or Habagat and Northeast or Amihan) and the modes of atmospheric variability such as the El Niño Southern Oscillation (ENSO) and Madden-Julian Oscillation (MJO) which can modulate TC activity.

These conditions bring forth the need for reliable forecasts that can be used for proper planning and management in the different sectors of the country. Forecasting within the sub-seasonal to seasonal (S2S) timescale (ranges from two weeks to two months) is beneficial for this purpose as it bridges the gap between the usual weather and climate forecasts. Extended-range forecasts can be useful for early warnings to provide the governing agencies enough lead time to prepare.

In collaboration with our Taiwan counterparts from Central Weather Administration (CWA), National Taiwan University and Tamkang University, we will determine several phenomena metrics or climate indices (e.g. El Niño Southern Oscillation, East Asian summer monsoon, etc.) of the hindcast and forecast data of the CWB global (e.g., CWB CFSv2) and regional (e.g., RSM, 12 km) models. The performance of the global model would also be evaluated using different forecast skill scores such as accuracy (ACC, Ranked Probability Skill Score (RPSS)). For the case of the regional model, a statistical downscaling technique will be applied to derive high-resolution gridded forecast information variables such as 2-m temperature and precipitation, which will be further evaluated for their performance. Aside from that, extreme climate indices (e.g., heat extremes, drought, etc.) will also be calculated. The assessed gridded data will be used in the development and evaluation of S2S forecast products for specific sectors namely agriculture, disaster risk reduction or emergency relief, water resources, and energy.

The project aims to develop and provide sector-specific climate forecast information using the outputs of the global and regional models of the CWB. These model forecasts will be access via FTP server. The model runs, evaluation, verification and post processing into sector-specific forecast will require large storage capacity and high-end laptops for processing and archiving of the forecast data.

On this note, PAGASA needs 1 lot of Storage Server and 2 high-end laptops.

## 2. Approved Budget for The Contract (ABC)

The approved budget for the project amounts is distributed as follows:

**Lot A: SUPPLY DELIVERY, INSTALLATION AND TESTING OF STORAGE SERVER** - One Million Three Hundred Five Thousand Pesos (PhP1,305,000.00)

**Lot B: SUPPLY, DELIVERY AND TESTING OF LAPTOPS** - Two Hundred Thousand Pesos (PhP200,000.00)

The total ABC is One Million Five Hundred Five Thousand Pesos (PhP1,505,000.00) inclusive of VAT and all applicable government taxes.

## 3. Delivery Period and Place of Delivery and Installation

The winning bidder shall supply, deliver, install and test the storage servers at Climate Monitoring and Prediction Section (CLIMPS) office, CAD Bldg., PAGASA WFFC Compound, Senator Miriam P. Defensor-Santiago Avenue, Brgy. Central, Quezon City within **one hundred twenty (120) calendar days** commencing from the date of issuance of the Notice to Proceed.

## 4. Bid Proposal Contents

Bidders shall respond paragraph by paragraph to all the following specifications and shall clearly indicate compliance thereto. The bidder should include in its proposal, the descriptive literatures of all equipment's/materials to be supplied in original format.

The prospective bidder shall respond paragraph by paragraph and shall clearly indicate compliance to all the required specification and shall specify the number of days or schedules within which to complete the delivery of all the goods required.

The bidder shall likewise clearly indicate in its bid offer the model number and specifications of the storage system and all other accessories referred to technical specifications to be supplied, if awarded the contract for the Project.

## 5. Technical Specifications

### Lot A: SUPPLY, DELIVERY, INSTALLATION AND TESTING OF STORAGE SERVER

The winning bidder shall supply, deliver, install and test the **two (2) units of Storage Servers** with the following minimum specifications **or better**:

**Form Factor:** Tower type Enterprise-grade NAS server

**CPU:** 6 cores, 9MB cache, 2.2GHz-2.7GHz, 64-bit architecture

**Memory:** 2x 8GB DDR4 ECC SODIMM

**Ports:** 2x RJ-45 1GbE LAN Port; 2x USB 3.2 Gen 1 Port

*"tracking the sky...helping the country"*

**Drive Bays:** 12 bays

**Hard Drives:** 12x 16TB 7200 rpm SATA III 3.5" NAS Grade HDD

**RAID Level :** Supports RAID 0, 1, 10, 5, 6

**System Features:** Scheduled Power On / Off, Wake on LAN / WAN

**Operating Conditions:** 0°C to 40°C; 5% to 95% RH

**Additional component:**

**Uninterruptible Power Supply (UPS)** – 600watts, 1kVA, floor mount, 4x outlet with battery backup and surge protection

**Lot B: SUPPLY, DELIVERY AND TESTING OF LAPTOPS**

The winning bidder shall supply, deliver and test the **two (2) units** of Laptop computers with the following minimum specifications or better:

**CPU: 13th Generation i5-13450HX Processor** (E-cores up to 3.40 GHz P-cores up to 4.60 GHz) or **better**

Operating System: Windows 11 pro bundled with Microsoft Office licensed

Memory: 16 GB DDR5-4800MHz (SODIMM) - (2 x 8 GB)

Display: 16" WQXGA (2560 x 1600), IPS, Anti Glare, Non Touch, 100% sRGB, Low Blue Light, 350 nits, 165Hz, Narrow Bezel,

Graphic Card: GN21-X2 2.37 Ghz GPU 6GB GDDR6 or better

Storage: Solid State Drive, 1 TB M.2 2280 PCIe Gen4 TLC

Camera: 1080P FHD with Dual Microphone

**6. WARRANTIES**

1. Lot A items must have One (1) year warranty with 2 years extended warranty on all hardware and services delivered.
2. Lot B items must have One (1) year warranty on all hardware and services delivered.

**7. SERVICE LEVEL AGREEMENT (SLA)**

Availability of technical support on 24/7 via email, phone, or SMS especially for severe or critical issues with an SLA of 8 hours response time within the warranty period

**8. General Notes**

In compliance to green procurement policy, products must meet national green procurement guidelines and environmental impact assessment requirements. all electronic components must RoHS (Restriction of Hazardous Substances) compliant, minimizing hazardous substances and must meet or exceed Energy Star 8.0 or equivalent certification to ensure energy efficiency and reduced power consumption. All packaging materials should be recyclable, biodegradable, or reusable, with minimal plastic use.