



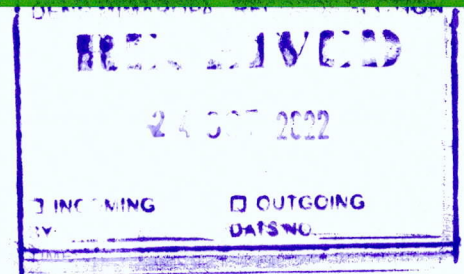
**MEMORANDUM**

**FOR :** The Regional Executive Director  
DENR MIMAROPA Region

**FROM :** The OIC-Director  
Policy and Planning Service

**SUBJECT :** CONSTRUCTION OF DATA MANAGEMENT, MAPPING AND  
OPERATIONS CENTER OF DENR PALAWAN

**DATE :** 18 OCT 2022

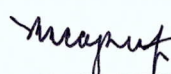


This refers to Memorandum dated 19 September 2022 requesting for a Central Office-Based Fund (COBF) for the construction of Data Management, Mapping and Operations Center of DENR Palawan amounting to **TWENTY-SIX MILLION NINE HUNDRED SEVENTY-FIVE THOUSAND PESOS (PhP26,975,000.00)**.

The Project aims to have a separate building which shall house the data management and mapping activities and shall serve as the Operation Center of DENR Palawan. Rationalizing that the data received from CENRO and field personnel shall be translated into invaluable knowledge and understanding for planners and decision makers, and ensure that the knowledge is effectively relayed to higher authorities of the agency and/or concerned field offices for timely and informed decision-making. Accordingly, the Center is the convergence of various IT infrastructures, Information Systems and Communication technologies. Apart from the construction of building (in four (4) phases), procurement of IT and office equipment and hiring personnel with specific skillset to man the Center are also proposed to be undertaken.

This Office fully acknowledge the significance of having a data-hub containing timely and reliable data coupled with maps which shall be translated into knowledge product for planners and decision makers. However, constructing a separate Office for the purpose may not be necessary because we believe that such function can be done within PENRO or CENRO Office. Also, having a separate building would require additional maintenance cost on the part of PENRO Palawan. Thus, we recommend a low-budget renovation in any of those Offices to house IT and office equipment and accommodate personnel who will be handling data management and mapping activities. If you intend to augment your existing IT equipment, please submit your request to Knowledge and Information Systems Service (KISS), DENR Central Office.


For consideration.

  
**MELINDA C. CAPISTRANO**




Republic of the Philippines  
Department of Environment and Natural Resources  
MIMAROPA Region



**FOR :**  **ATTY. JONAS R. LEONES, CESO I**  
**Undersecretary for Policy, Planning, and**  
**International Affairs**

**ATTY. ANALIZA REBUELTA- TEH, CESO I**  
**Undersecretary for Finance, Information**  
**Systems, and Climate Change**

**THRU :**  **MELINDA C. CAPISTRANO**  
**The OIC, Director Policy and Planning Service**

**ANGELITO V. FONTANILLA**  
**The Director, Financial and Management Service**

**FROM :** **THE REGIONAL EXECUTIVE DIRECTOR**

**SUBJECT :** **CONSTRUCTION OF DATA MANAGEMENT, MAPPING AND**  
**OPERATIONS CENTER OF DENR PALAWAN**

**DATE :** **SEP 19 2022**

This refers to the construction of a 3-Storey building, Data Management, Mapping, and Operations Center of the DENR Palawan. The main objective of the center is to translate the data received from CENROs and field personnel through information management system and advanced technology to aid our planning, monitoring, and decision-making.

Based on the plan, to complete the construction of the building, the project will have 3 Phases: (a) Phase 1 will be the general requirements such as acquiring a building permit and clearances, earthworks, and reinforcement of concrete, which was already included in our revised Work and Financial Plan for FY 2022 amounting to One Million One Hundred Thousand Pesos (Php 1,100,00.00), (b) Phase 2 is 50% completion of the building construction; and (c) Phase 3 is 100% completion of the building construction, another phase is the perimeter fencing with a total budget of Twenty-Three Million Pesos (Php 23,000,000.00). After the completion of the construction will be the procurement and installation of the furniture and fixture, as well as IT and office equipment, subscription of Internet, hiring of Support staff, and trainings with a total amount of Twenty-Six Million Nine Hundred Seventy-Five Thousand Pesos (Php 26,975,000.00).

In view of this, we are requesting possible funding for the succeeding phases of the project. For your reference, we have attached the updated report of PENRO Palawan, with perspective view of the proposed building, map of the proposed building site, and the revised Work and Financial Plan FY 2022. //

We hope for your consideration and approval of this request.

  
**LORMELYN E. CLAUDIO, CESO IV**



Department of Environment  
and Natural Resources  
MIMAROPA Region



Doc ID: 93015



August 15, 2022

**FOR: THE REGIONAL EXECUTIVE DIRECTOR**  
DENR MIMAROPA Region  
1515 L & S Bldg., Roxas Blvd., Ermita, Manila

**FROM: THE PROVINCIAL ENVIRONMENT AND NATURAL RESOURCES OFFICER**

**SUBJECT: UPDATES ON THE PROPOSED INSTITUTIONALIZATION OF DATA MANAGEMENT, MAPPING AND OPERATIONS CENTER OF DENR PALAWAN**

This is in relation to the submitted proposal dated April 19, 2022 on the institutionalization of Data Management, Mapping and Operations Center of DENR Palawan. Taken into account the geographical position of the province, the location of PENR Office and its CENR Offices, the undersigned proposes the establishment of Operations Center which centralizes the monitoring, control, and command of the office's overall operations. The main objective of the center is to translate the data received from CENROs and field personnel into invaluable knowledge and understanding for planners and decision makers, and ensure that the knowledge is effectively relayed to higher authorities of the agency and/or concerned field offices for timely and informed decision-making.

A key aspect of the center is linking vital systems and communications – not just to gather information, but also to allow for seamless and mass distribution of critical instructions, notifications, and alerts. The center is the convergence of various IT infrastructures, Information Systems and Communication technologies. Per DENR ISSP for 2021-2023, the DENR CO has various information systems deployed to field offices; others are programmed for deployment until the following year. The reports which can be derived from this various Information Systems shall be received, processed and analyzed at the Operations Center. Hence, the head of office will be armed with hot and current information to manage incident(s) and situational awareness quickly and effectively.

Thus, to attain its objective, the undersigned proposes the construction of building infrastructure, procurement of IT and office equipment and hiring of individuals with specific skillsets required in manning the center. As part of the initial phase of this project, this office has identified the proposed site which the building will be erected. It has an area of 3,300 sqm covered by Lot No. 4103, Cad800-D. The proposed site is approximately 60 meters away from CENRO Puerto Princesa, and 120meters from current PENR Office. Kindly see *Annex A* for the perspective view of the proposed building, *Annex B* for the Approved Work and Financial Plan 2022 for the 1<sup>st</sup> phase of the project, *Annex C* for the map showing the location of the proposed site; *Annex D* for list of IT and Office Equipment to be procured, and *Annex E* for Hiring of Support Staff.

Below is the summary of budget breakdown of this project, in which the undersigned is seeking your continued support given that the benefits which can be achieved out of this project outweigh its cost. This project is deemed to be beneficial to all stakeholders as it is expected to provide efficient access to information. A detailed Project Timeframe and Budget Breakdown can also be found in *Appendix A* Project Timeframe and Budget.

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Table 1. Summary of Activities and Proposed Budget

Activity	Proposed Budget
<b>A. Construction of Data Management, Mapping and Operations Center Building</b>	
Phase 1 Building Construction, 7% Completion (included in the WFP 2022)	1,100,000.00
Phase 2 Building Construction, 50% Completion	6,400,000.00
Phase 3 Building Construction, 100% Completion	7,500,000.00
Phase 4 Construction of Perimeter Fencing	8,000,000.00
<b>SUB-TOTAL</b>	<b>23,000,000.00</b>
<b>B. Plant, Property, Building Furniture and Equipment</b>	
<b>b.1 Building Furniture and Fixture Installation</b>	
a. Solar Rooftop	1,000,000.00
b. Fire Alarm System	500,000.00
c. CCTV System	200,000.00
<b>SUB-TOTAL</b>	<b>1,700,000.00</b>
<b>b. 2 Procurement of IT and Office Equipment *</b>	
a. Local Area Network Installation	300,000.00
b. Central Monitoring System	1,000,000.00
c. Meeting Room Teleconferencing Equipment	652,000.00
d. GIS Mapping Equipment	800,000.00
e. Environment and Equipment Service Unit	18,086,500.00
f. Office Equipment	460,000.00
<b>SUB-TOTAL</b>	<b>21,298,500.00</b>
<b>b.3 Direct Internet Subscription, at least 1GBps</b>	<b>900,000.00</b>
<b>SUB-TOTAL</b>	<b>900,000.00</b>
<b>b.4 Hiring of Support Staff *</b>	
1 Operations Center Officer, 50k/month or equivalent to SG 18	450,000.00
1 Data Center Specialist, 25k/month	225,000.00
2 GIS Specialist, 25k/month	450,000.00
1 Database Management Encoder, 18k/month	162,000.00
2 Drone Pilot/Operator, 25k/month	450,000.00
1 Aerial/Drone Photographer, 20k/month	180,000.00
1 Network Administrator, 25k/month	225,000.00
1 Communication Equipment Technician, 15k/month	135,000.00
<b>SUB-TOTAL</b>	<b>2,277,000.00</b>
<b>b.5 Trainings and Certifications</b>	
Data Center Foundation Certificate	100,000.00
Complete Drone Pilot/Operator Training	200,000.00
Aerial Photography	100,000.00
Surveillance Operations Training for Law Enforcers	200,000.00
Remote Sensing	200,000.00
<b>SUB-TOTAL</b>	<b>800,000.00</b>
<b>GRAND TOTAL</b>	<b>49,975,500.00</b>



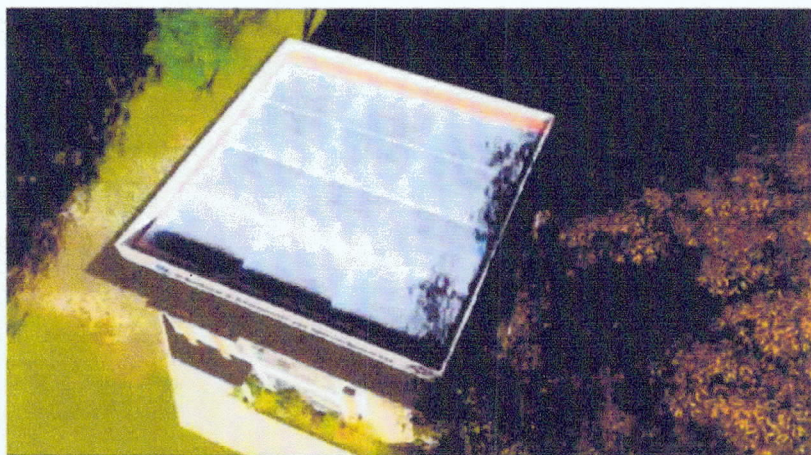
### **ANNEX A Perspective View of the proposed Building**



Front View



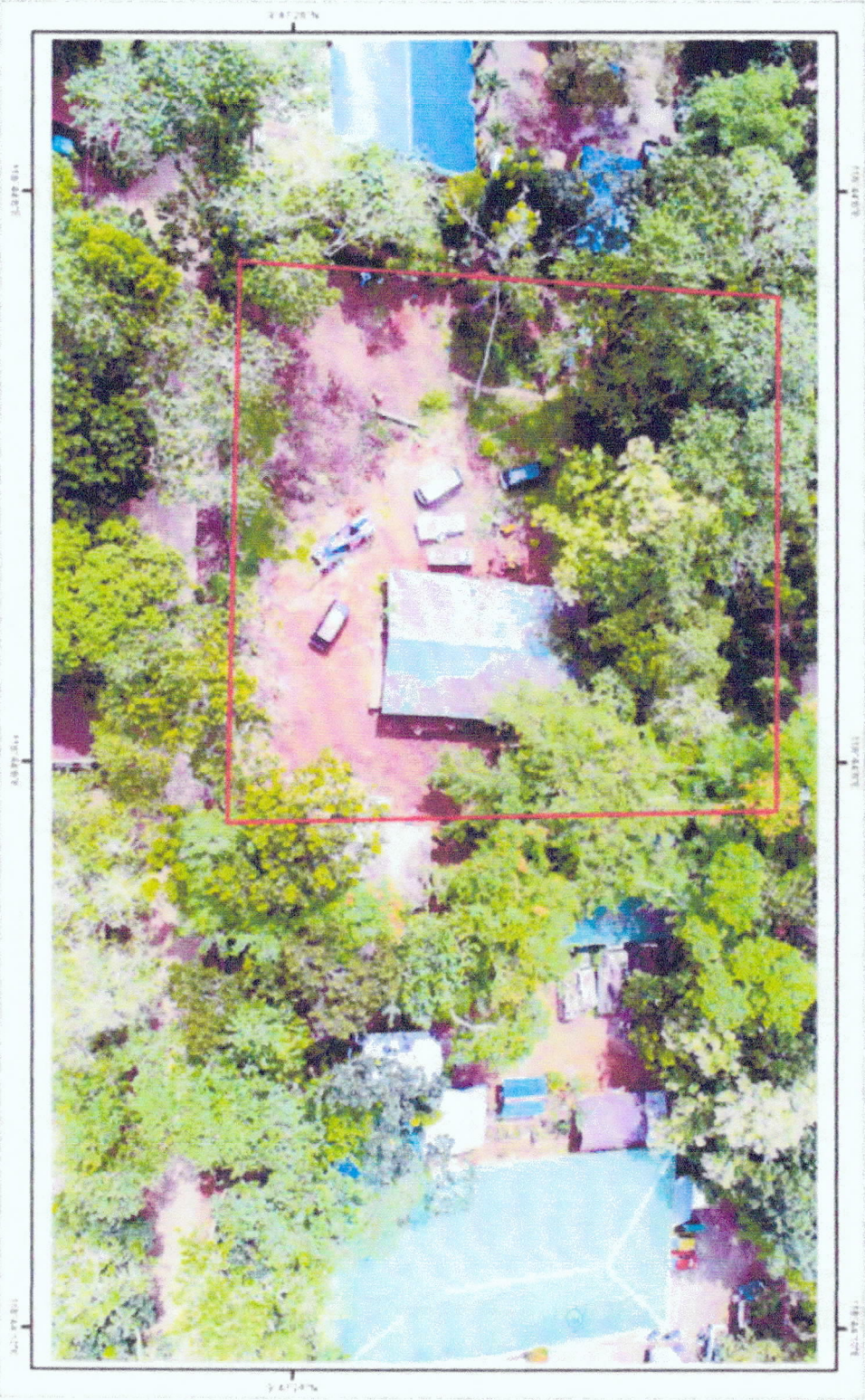
Right View



Top View w/ Solar Rooftop



Annex | C Map showing the proposed building site



**MAP SHOWING DATA MANAGEMENT, MAPPING AND OPERATION CENTER BUILDING SITE**

Location PENRO Road, Bgy. Sta. Monica, Puerto Princesa City, Palawan  
Survey No. CAD. 800-D  
Lot No. 4103



Approved: \_\_\_\_\_  
Date: \_\_\_\_\_  
Prepared by: \_\_\_\_\_  
Checked by: \_\_\_\_\_  
Reviewed by: \_\_\_\_\_  
Supervised by: \_\_\_\_\_



**Annex D List of IT and Office Equipment\***

*For installation at the Operations Center, 3<sup>rd</sup> Floor only*

<b>BUILDING FURNITURE AND FIXTURE</b>		
Solar Rooftop	1 set	
Fire Alarm System	1 set	
CCTV System	1 set	
<b>DATA AND SERVER ROOM</b>		
Structured Cabling	1 set	
Firewall	1 unit	
Server With Os Subscription	1 set	
Aircon/Cooling System	1 set	
Security Lock	1 set	
Direct Internet Subscription with at least 1GBps	1 unit	
Back-up Internet Subscription	1 unit	
Network Attached Storage With 1TB SSD	4 set	
Cloud Storage Subscription	1 unit	
Floor Standing Data Cabinet	2 units	
Cooling System	1 set	
<b>VIEWING/CONTROL ROOM</b>		
LED Wall	2 set	
2-way PA Speaker	1 set	
High-speed desktop computers with dual monitor and 1000VA UPS	5 set	
Network Video Adapter	1	
Aircon	1	
Office table and Chairs	5set	
Network Switch	1	
<b>GIS UNIT</b>		
High-speeds desktop computers with dual monitor and 1000VA UPS	2 set	
Plotter	1 unit	
Drone with accessories	1 unit	
LiDar Scanner	1 unit	
DSLR Camera and Long Lens for Aerial Photography	1 set	
ArcGIS software subscription	1 unit	
Pix4D software subscription	1 unit	
Video Editing software	1 unit	



Handheld Video Recorder with accessories	1 set	
<b>MEETING/CONFERENCE ROOM</b>		
75 in Smart TV with UPS	1 set	
2-way PA Speaker	1 set	
Mixer	1 pc	
Audio Adapter	1 pc	
LCD Projector	1 pc	
Cables and jacks		
High-speed Laptop Computer with UPS	1 unit	
Group Kit Video Conferencing Equipment w/ 4 expansion microphones	1 set	
Boom Microphone	1 unit	
Studio lights	2 units	
Network Switch	1 pc	
8-seater Conference Table	1 set	
Aircon	1 pc	
<b>OFFICE FOR SUPPORT STAFF</b>		
Network Switch	1 pc	
Airconditioning Unit, inverter, split-type	1 pc	
Printer	1 pc	
Photocopier	1 unit	
Office table and Chair	6 sets	
Filing cabinet	2 pcs	

*For distribution at CENROs*

<b>ENVIRONMENTAL EQUIPMENT SERVICE</b>		
Earth Ranger/Lawin Central Processing Unit		
- High-end Laptop computers		8 pc
- Mobile phones with EarthRanger app		155 unit
- Field/camping hammock with mosquito net		155 pcs
- Field work boots		155 pcs
- Filed work pants		155 pcs
- Field work long sleeves		155 pcs
- Field work hats		155 pcs



- Survival first aid kits	155 pcs
- Survival knives	155 pcs
- Thick cover field notes	155 pcs
- Taser	155 pcs
- Personal Locator Beacon	155 pcs
- GPS device	155 pcs
Digital Mobile Radios	8 set
- Two-way handheld radios with accessories	8pcs
- Digital Mobile Radio Base Station	1 set
Pick-up Vehicle 4x4 off road with DMR installed	8 unit
Wide-Angle Binoculars	8 set
Desktop Computers with UPS	3 set per office



### Annex E Hiring of Support Staff

<b>Position/Designation</b>	<b>Description of Work</b>	<b>Trainings/Certifications, if required</b>
I Operations Center Officer	<ul style="list-style-type: none"> <li>Supervises the day-to-day operations of the center</li> <li>Provides recommendation for the improvement of the center</li> <li>Reports directly to PENR Officer</li> </ul>	<p>Preferably with at least 5 year experience in managing Operations center</p> <p>Knowledgeable in security and emergency response protocols</p> <p>With background in law enforcement</p>
I Data Center Specialist	<ul style="list-style-type: none"> <li>Monitors, identifies, resolves issues, and makes enterprise back-up system recommendations</li> <li>Maintains off site backup media processes and documentation</li> <li>Installs, maintains and upgrades server equipment</li> <li>Prepares and submits documentation for equipment</li> <li>Assists in inventory tagging of data center equipment</li> <li>Prepares used data center equipment for deployment</li> <li>Serves as back-up to the senior level data center specialist</li> <li>Installs and troubleshoots data network issues</li> <li>Assists in training and delegating work to part-time staff</li> </ul>	
At least 2 GIS Specialist	<ul style="list-style-type: none"> <li>Generates and provides geospatial data</li> <li>Performs image and drone footage processing</li> <li>Performs image analysis</li> </ul>	<p>ArcGIS</p> <p>Image Processing and Analysis</p>
At least 1 Database Management Encoder	<ul style="list-style-type: none"> <li>Maintains and updates geospatial repository</li> <li>Coordinates with CENRO GIS operators on geospatial related data</li> </ul>	<p>Computer literate</p> <p>Knowledge in ArcGIS an advantage</p>
At least 2 Drone Pilot/Operator	<ul style="list-style-type: none"> <li>Operates, maintains and repairs UAVs used to gather data aerially</li> <li>Uses drone-based streaming software</li> <li>Uses aerial photography software</li> </ul>	<p>Drone pilot Certification</p> <p>Image Processing and Analysis</p> <p>Aerial Photography</p>
At least 1 Aerial/Drone Photographer	<ul style="list-style-type: none"> <li>Photographs segments of earth and other subject material from aircraft to produce pictures used in surveying, mapping, volumetric surveying, or related</li> </ul>	



	<p>purposes, such as recording effects of pollution or natural disasters, determining condition of crops and timberland, and planning cities or other large scale projects: Sets up and mounts camera in aircraft.</p> <ul style="list-style-type: none"><li>▪ Confers with pilot regarding plotted course, speed, altitude, and area to be photographed.</li><li>▪ Communicates with pilot during flight to ensure adherence to flight plan or make adjustments to equipment to compensate for changes.</li><li>▪ Calculates number of exposures and time lapse between them, using standard formulas to determine requirements for adequate area coverage.</li><li>▪ Adjusts camera shutter speed, lens aperture opening, and focus.</li><li>▪ Adjusts automatic exposure interval on camera equipped with time lapse control or times intervals with stopwatch and manually trips shutter.</li><li>▪ Maintains camera in level position and oriented to flight path when making photographs for mapping or surveying.</li><li>▪ May match individual photographs to form terrain map of photographed area.</li></ul>	
At least 1 Network/Systems Administrator	<ul style="list-style-type: none"><li>▪ Supervises network activities at the center</li><li>▪ Manages IT infrastructure</li><li>▪ Supervises data storage facility</li></ul>	IT background Data security Cyber security
At least 1 Communication Equipment Technician	<ul style="list-style-type: none"><li>▪ Installs and maintain electronic equipment at the center</li><li>▪ Provides technical support to the center</li></ul>	IT background Knowledge in communication equipment service repair

*\* Please see attached Appendix A for Project Timeframe and Budget*




To mark the commencement of this project, a symbolic groundbreaking ceremony was conducted on August 15, 2022. The said activity was attended by CENR Officers, Division Chiefs, PASus and DENR Palawan personnel.



Fig. 1 Photos taken during the groundbreaking ceremony of the proposed building. (Left) Photo with PENRO, CENR Officers, Division Chiefs and other personnel of DENR Palawan (Right) Photo during the tube insertion ceremony. (Below) PENRO Felizardo B. Cayatoc in hard hat during the ceremony.

With this, the undersigned is humbly requesting for your continued support to make this endeavor possible.

For your consideration.

  
**FELIZARDO B. CAYATOC**

DENR-PALAWAN  
PENRO-RECORDS  
**RELEASED**  
By Khen  
Date: 18 AUG 2022 2022-2109




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Recommending Approval

*[Signature]*  
FELIZARDO B. CAYATOC  
PENRO

Approved by:

 LORNELWYN E. CLAUDIO, CESO IV  
Regional Executive Director