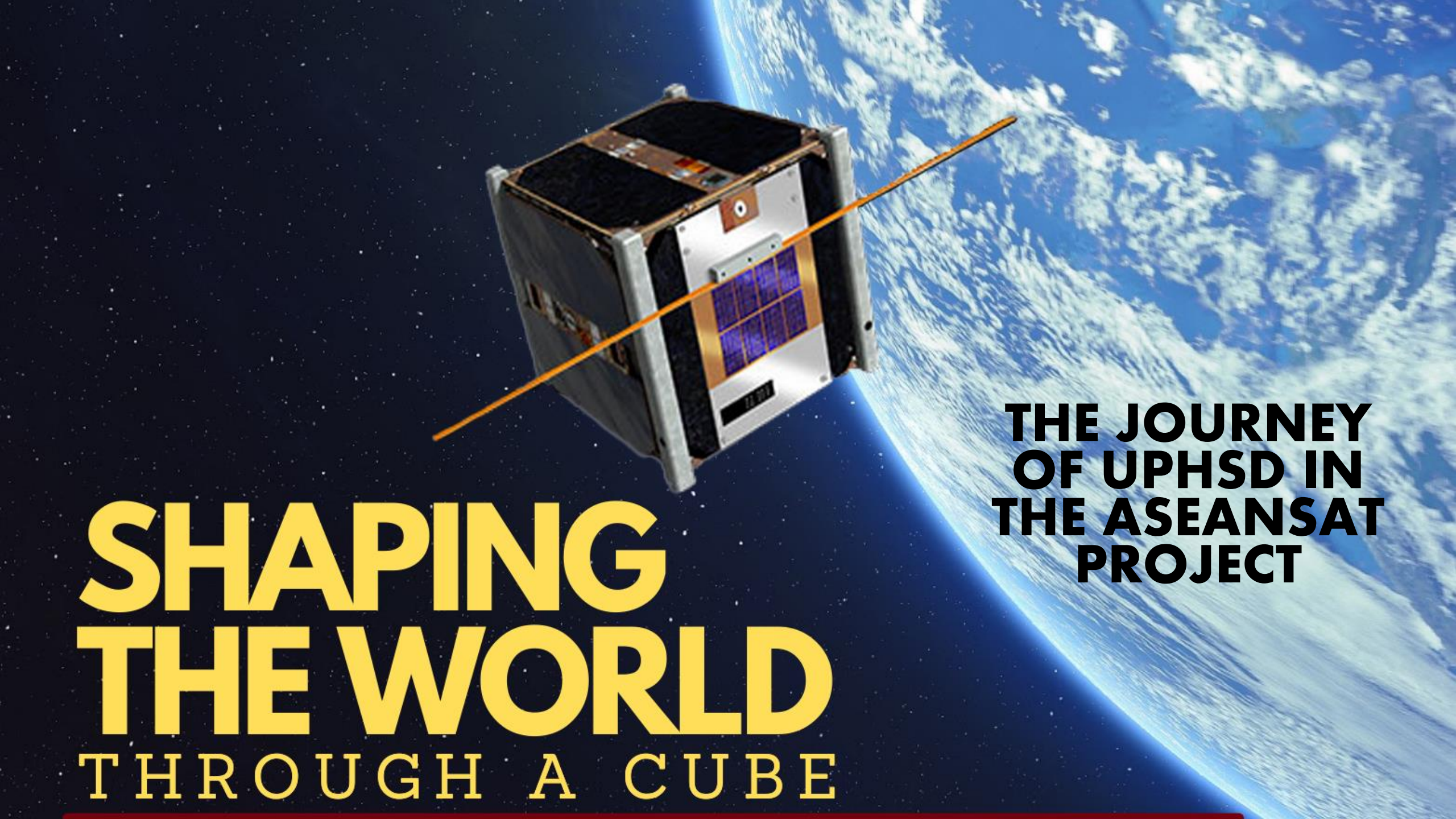


SHAPING THE WORLD

THROUGH A CUBE

THE JOURNEY OF UPHSD IN THE ASEANSAT PROJECT

CAMPUS NEWS

ASEAN ENGINEERS MOBILITY PROGRAMME: SOCIAL INNOVATION TOWARDS SOCIETY 5.0

Signed in duplicate at Universiti Teknologi MARA (UiTM), on .....

Signed by
for and on behalf of
UNIVERSITI TEKNOLOGI MARA

EMERITUS PROFESSOR DATO' DR. HASSAN SAID
Vice Chancellor/President

Date: 2/22/19

Witnessed by:

PROF. IR. TS. DR. HJ. MOHD NASIR TAIB
Dean
Faculty of Electrical Engineering

Signed by
for and on behalf of
UNIVERSITY OF PERPETUAL HELP SYSTEM DALTA LAS PIÑAS CAMPUS, PHILIPPINES

MR. ANTHONY JOSEPH M. TAMAYO
President

Date: 2/20/19

Witnessed by:

DR. ALFONSO N. LORETO
School Director
UPHSD

8

Letter of Intent

between
School of Electrical Engineering, College of Engineering
Universiti Teknologi MARA, Malaysia
and
University of Perpetual Help System Dalta, Philippines
and
King Mongkut's University of Technology North Bangkok, Thaila

on project:
Development and Launching of 1U-Sized ASEANSAT Nanosa

s Letter of Intent ("LOI") is made and entered into by and School of
gineering, College of Engineering, Universiti Teknologi MARA ("UiTM") in Sl
angor, Malaysia, University of Perpetual Help System Dalta ("UPHSD") in Pl
l King Mongkut's University of Technology North Bangkok ("KMUTNB") in
llectively the "Parties", and individually the "Party").

Purpose of the LOI

e Parties intend to collaborate on 1U-size ASEANSAT Nanosatellite proj
sists of the development, testing, launching, and operation the 1U Nanosate

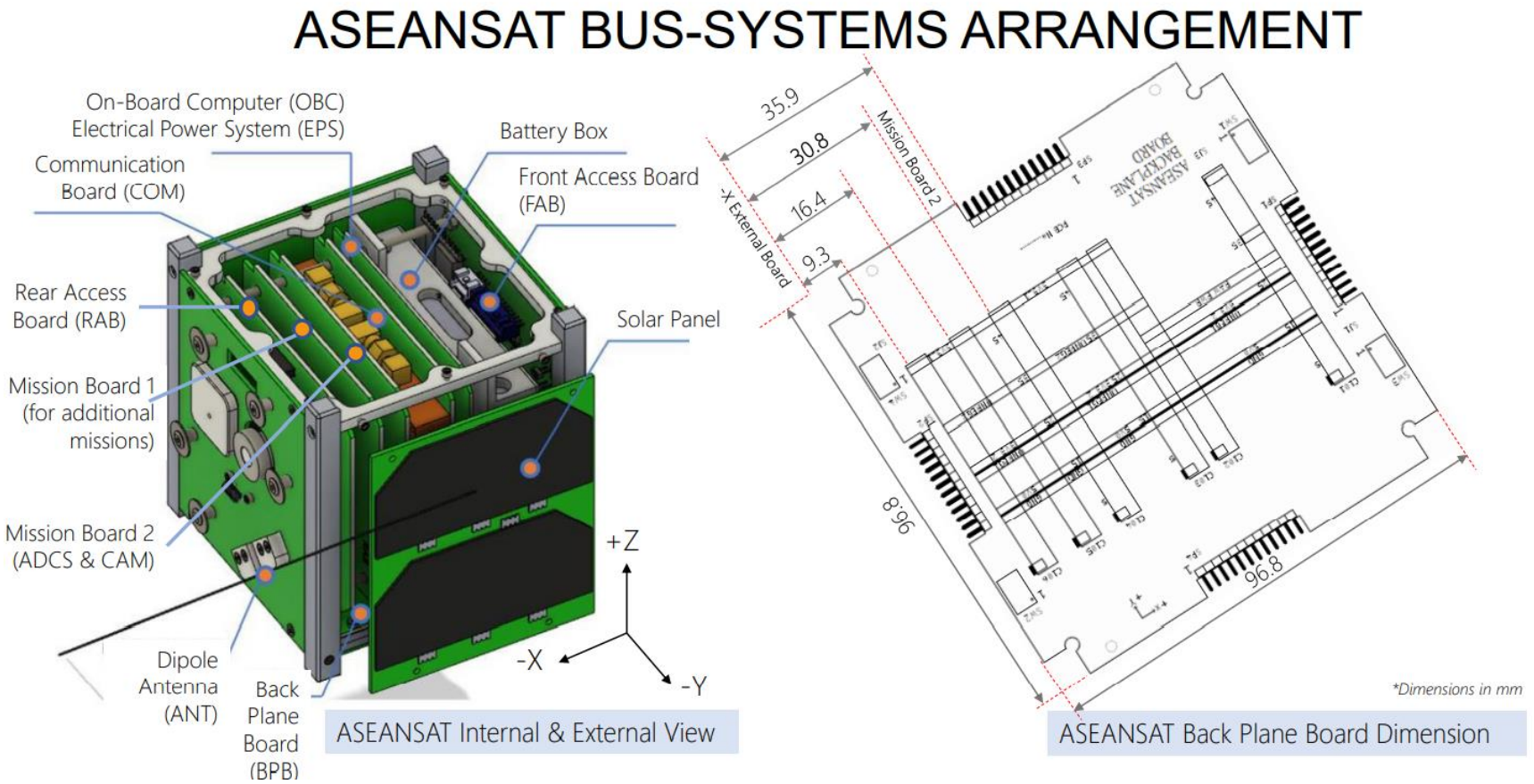
Scope of Collaboration

e 1U-sized Nanosatellite project is an international collaborative project where
Parties and another institution (if any) are the stakeholders. Participants f
keholder will work in a team at School of Electrical Engineering, College of En
versiti Teknologi MARA ("UiTM") as host to develop the 1U-sized Nanosatell
hnical aspects are based on the BIRDS sub-system. The main objective is to
ctional 1U-sized Nanosatellite with functionality to capture the image of th
imum ground resolution by taking the lean concept approach in order to have
; and higher success rate. The participants of each Party will be responsible
ks that will be described in work breakdown structure (WBS) of the pr
embly/integration of engineering model (EM) will be carried out at one labora
keholders and the assembly/integration of flight model (FM) will be carried out
litute of Technology ("KYUTECH"). The cost of 1U-sized Nanosatellite develo
shared among the stakeholders, including the hardware & software, testing,
l deployment costs. The kickoff date of the project is in February 2021.

Duration

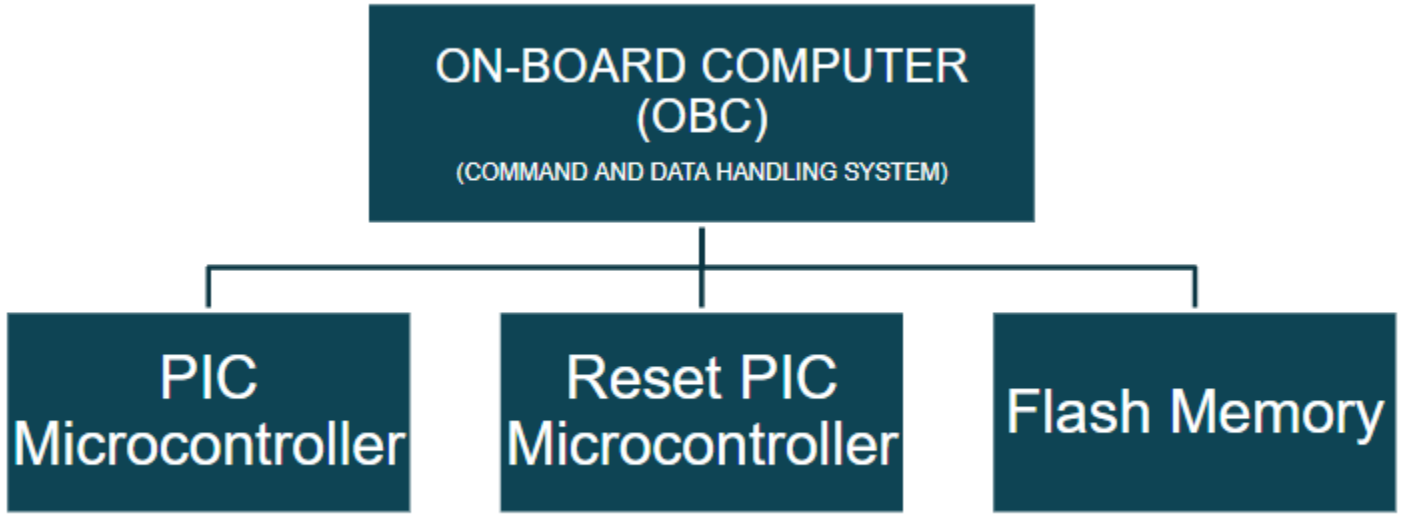
nsidering the effects of pandemic outbreak, the period of the project develop
ration are 3 years starting from February 2021 until January 2024.

1-U Nanosatellite Design Model



On-Board Computer
Function of a Subsystem/Product Breakdown Structure

- Function 1: Initiating dataflow among on-board hardware.
- Function 2: Run control algorithm and logical tasks.
- Function 3: Perform image compression.
- Function 4: Making autonomous decision




ASEANSAT-1 KICK OFF CEREMONY
Phongsatorn Saisutjarit
ASEANSAT-1 KICK OFF CEREMONY
Lorena Ilagan
ASEANSAT-1 KICK OFF CEREMONY
ASEANSAT-1 KICK OFF CEREMONY
ASEANSAT-1 KICK OFF CEREMONY
UPHSD Las Pinas Campus
ASEANSAT-1 KICK OFF CEREMONY
HUZAIMY JUSOH
Dexa Japan exportage agency. So

UPHSD ASEANSAT RESEARCHERS

Team Member (UPHSD)

UNIVERSITY OF PERPETUAL HELP SYSTEM DALTA LAS PIÑAS CAMPUS
www.perpetualdalta.edu.ph

ASEANSA

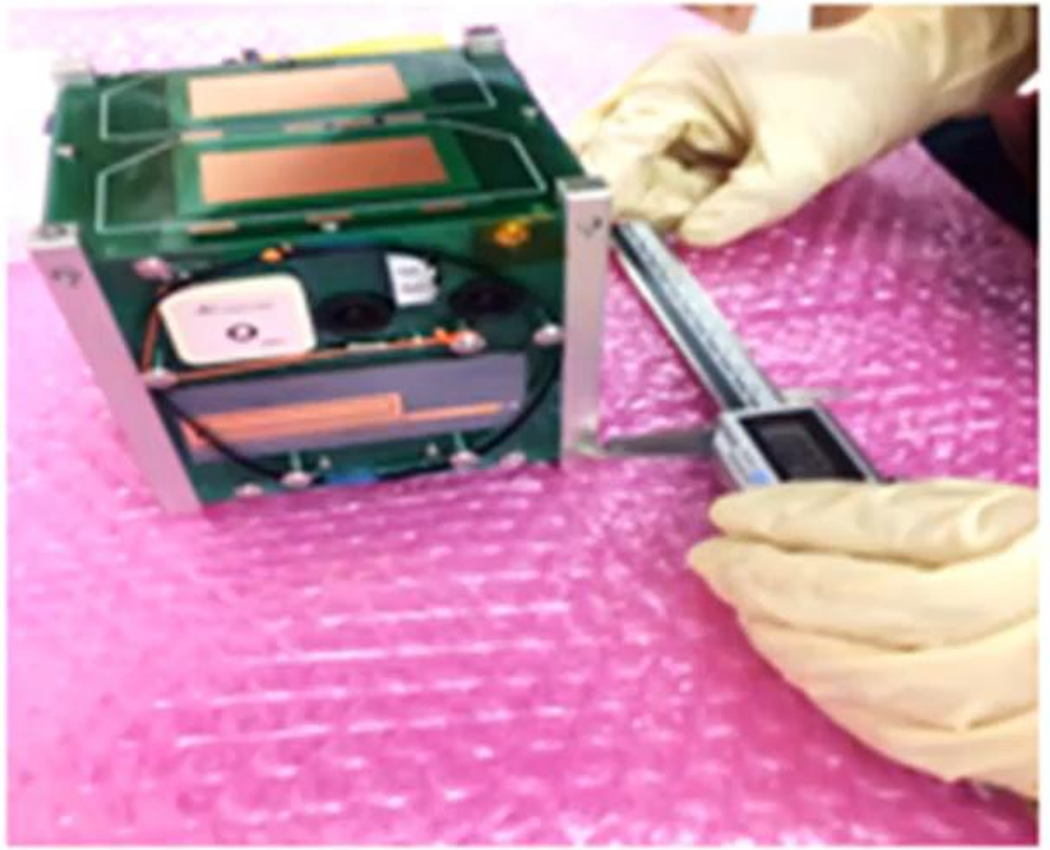
Edison Mojica
Configuration Manager

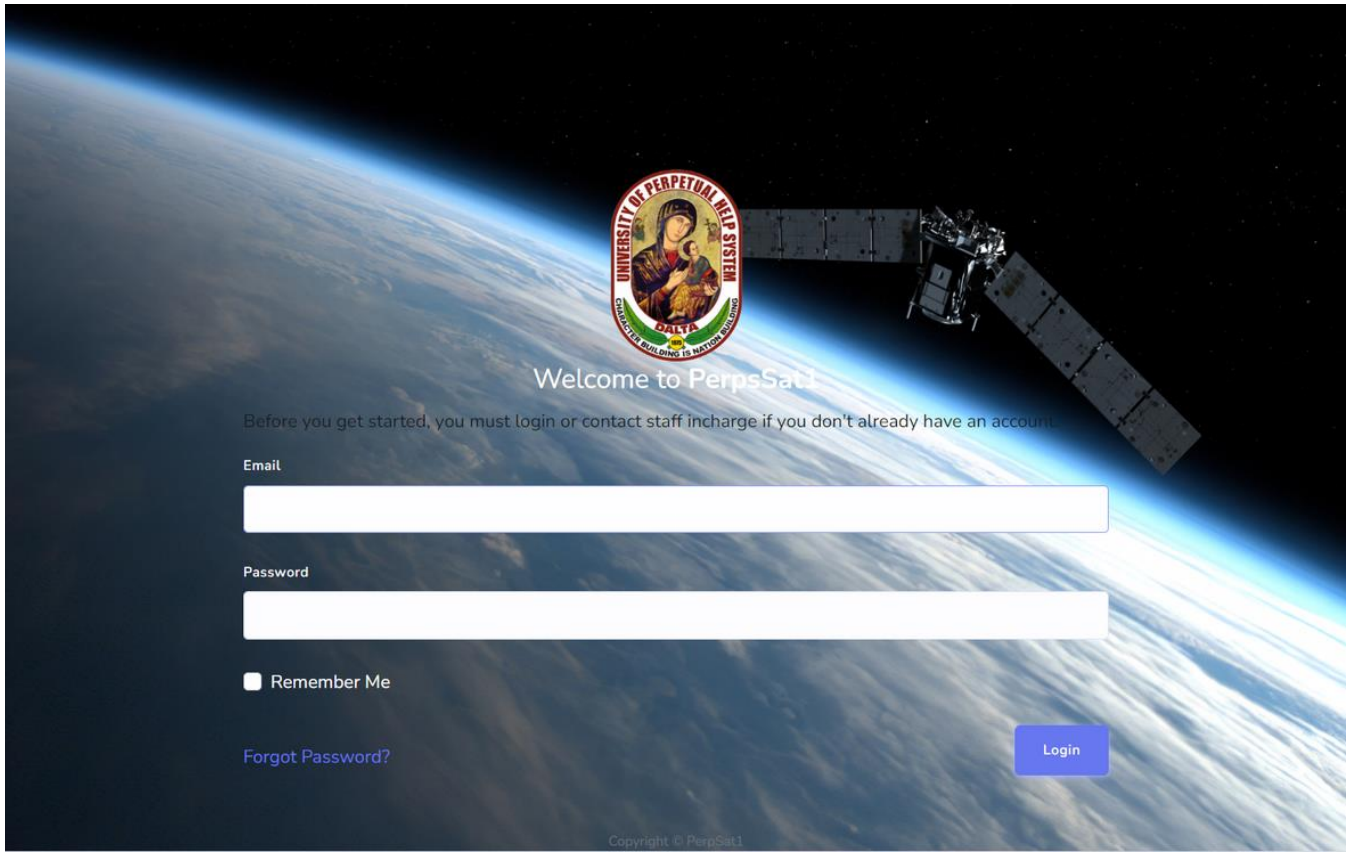
Marcelo Santos
Philippines GS

Lorena Ilagan
Philippines GST

7

ASSEMBLE ENGINEERING MODEL



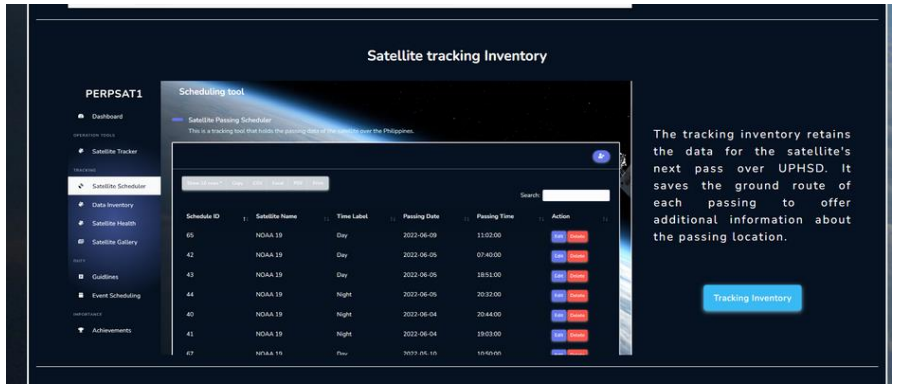


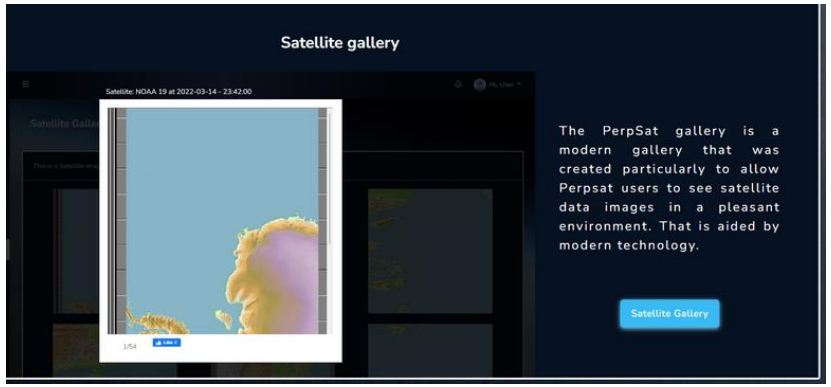
Login Page

Login Page was replaced with a new design. The design was enhanced to match the new colors of the system and also to match the logo of UPHSD.

the functionality of the login was fully implemented to be responsive to the system as a whole.

- the login system validates the user before and after login.
- Visitors of the system can not access the system without a valid account.
- Invalid signing in will be rejected and redirected to the login page.



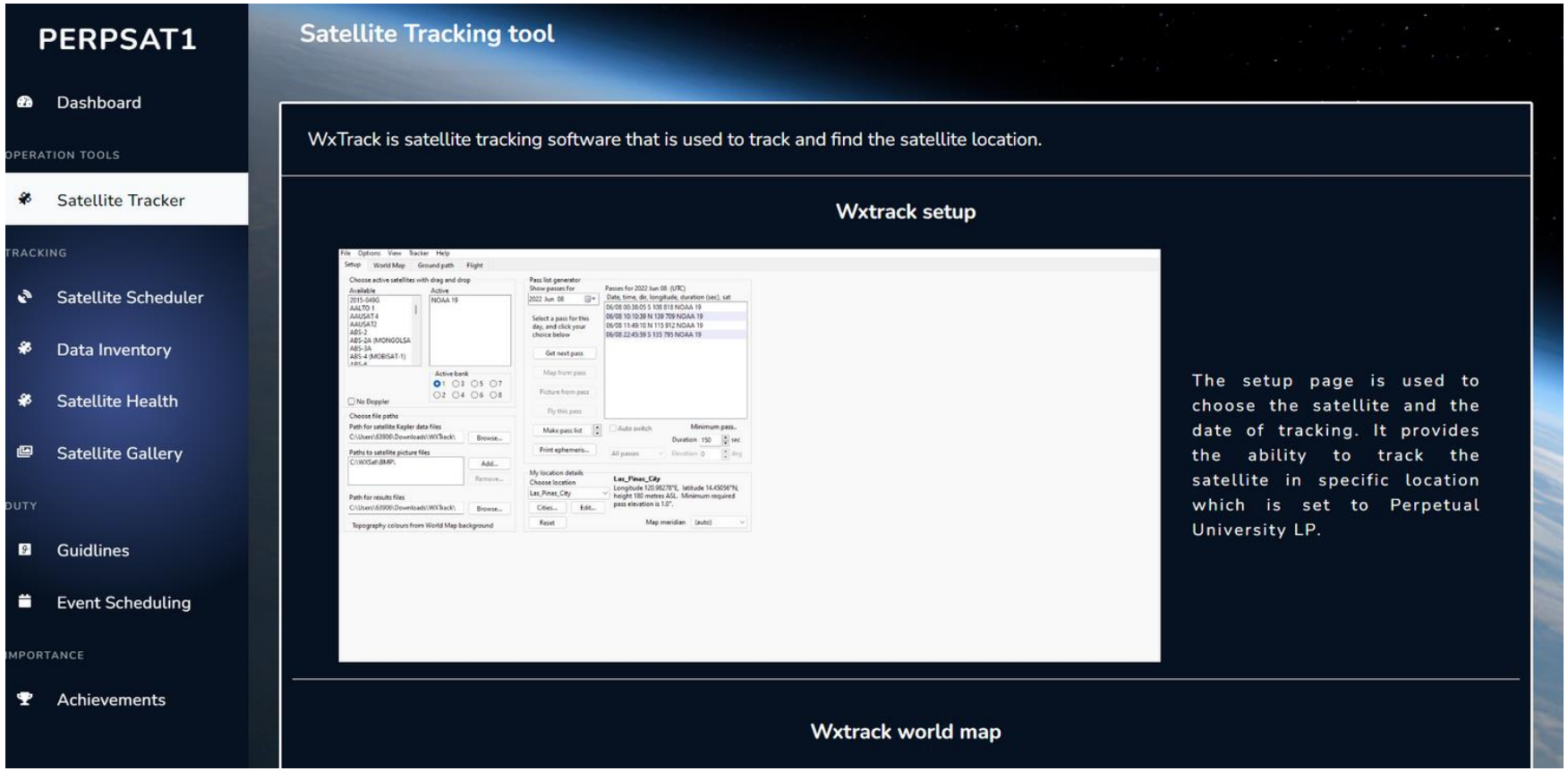


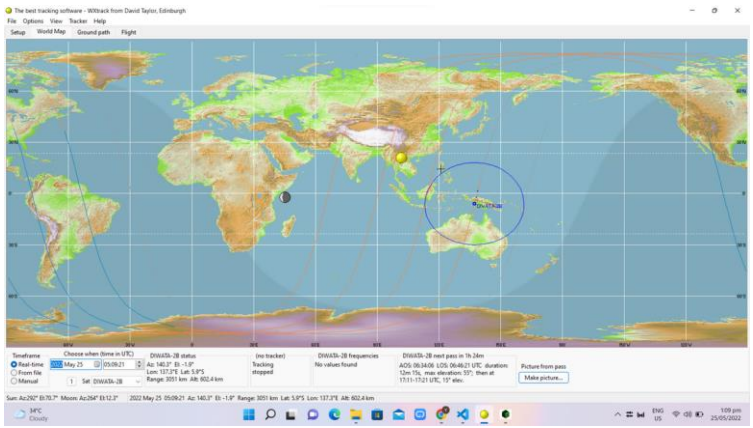
Dashboard Page

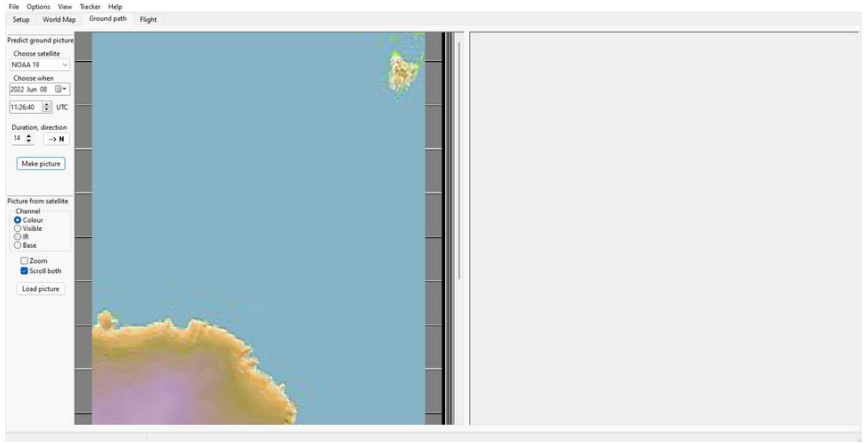
The dashboard page was recreated with a different layout and colors it was redesigned to:

- Display general information about the system tools
- Give a better understanding of the system at the first visit.
- Explains tracking tools, and inventory tools.

The dashboard page will be representing the general information of the software.





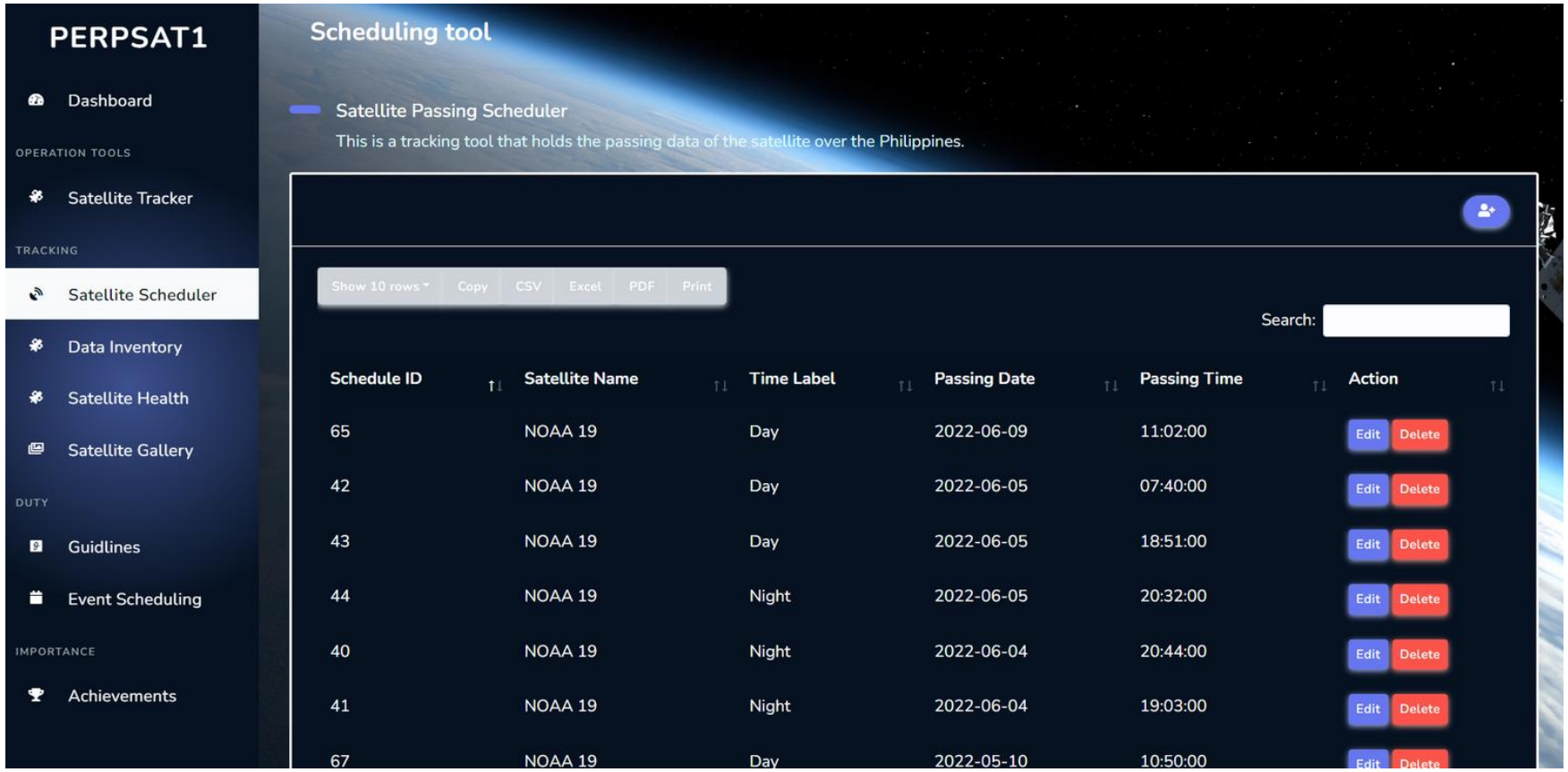


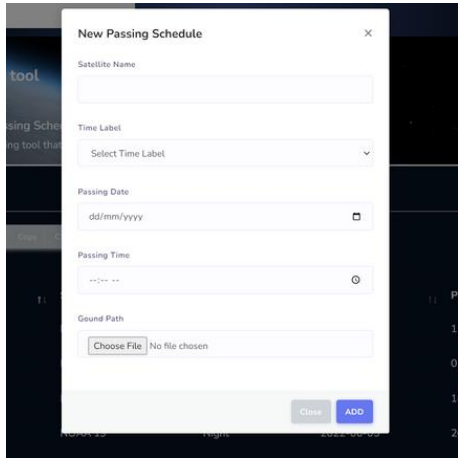
Tracking Tool

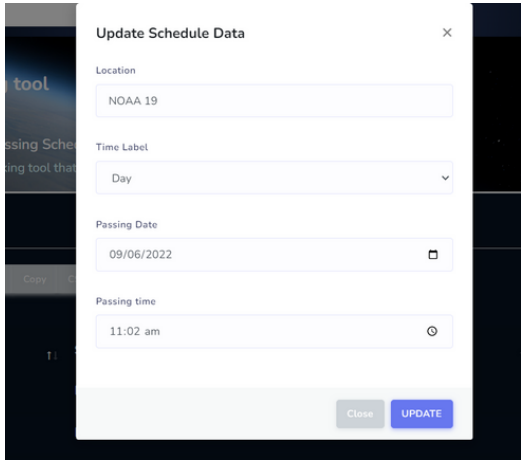
A web Tracking tool was added to the system using CESIUM. The tool uses TLE to simulate the location of the satellite. It has:

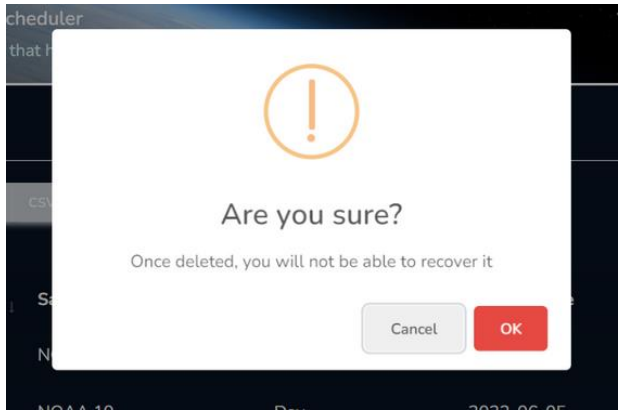
- Earth maps display
- The satellite location is represented by a dot on the map
- The library has an API that is being currently researched

The tool is still being developed to enhance the dashboard functionalities.







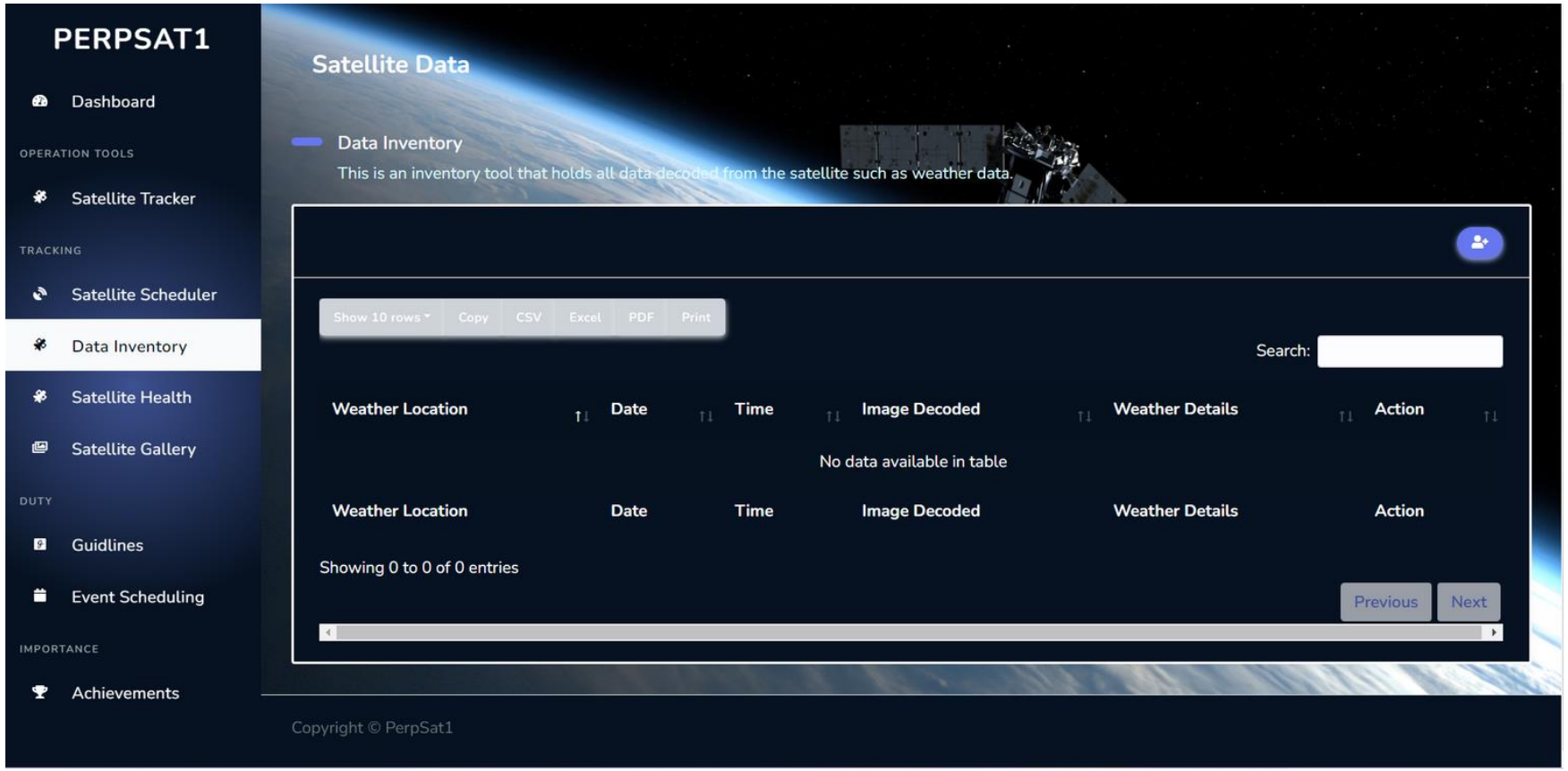


Scheduling Tool

The satellite tracking must be aware of the passage of time, which necessitated the development of a tool that maintains all of the data required for tracking.

This tool gives the ability to store the data and retrieve it later on.

- HTML models are designed to handle the forms needed for storing the data.
- The system works entirely by using Ajax and jquery which enables the system to work without refreshing the pages when need to update the data presented.
- Edit and delete functionalities were also built to ensure better control over the data.

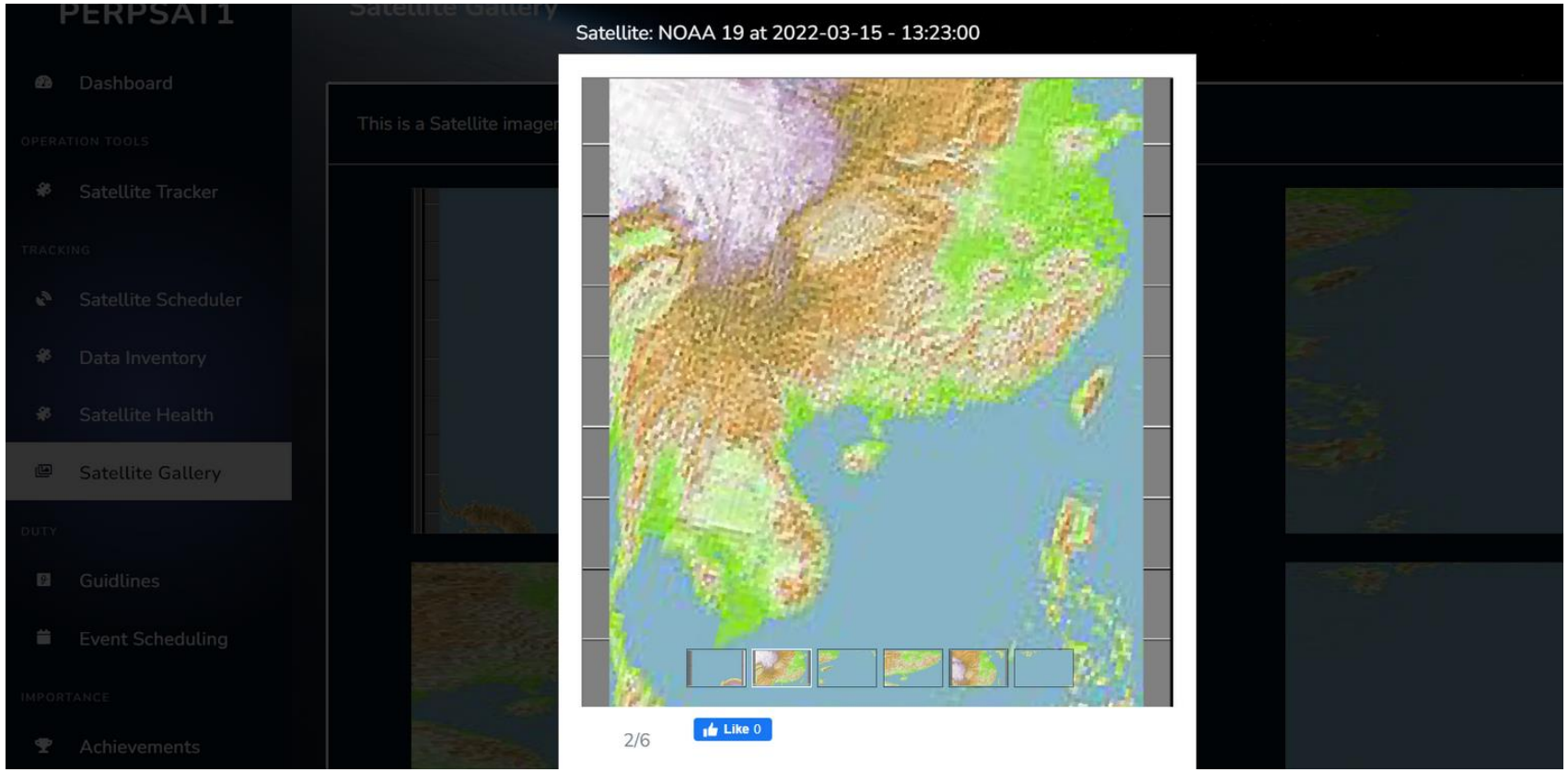


Inventory Tool

The Data decoded from the satellite must be stored to be able to retrieve it again. This tool ensures that satellite data will be saved within the database of the system.

This tool gives the ability to store the data and retrieve it later on.

- HTML models are designed to handle the forms needed for storing the data.
- The system works entirely by using Ajax and jquery which enables the system to work without refreshing the pages when need to update the data presented.
- Edit and delete functionalities were also built to ensure better control over the data.



Satellite Gallery

Imagery decoded from the satellite is being stored in the system but to build better friendly functionalities the gallery was built to give the user a better experience while using the system.

The gallery displays all pictures stored and related to the data of the satellite.

- The gallery only displays 6 images at a time.
- An autoloader was built to the gallery with the help of javascript and Ajax functions it loads more pictures if the user scrolls down.
- The gallery gives the ability to view each photo's details by clicking on it.

What's next?

01 Data Decoding tools

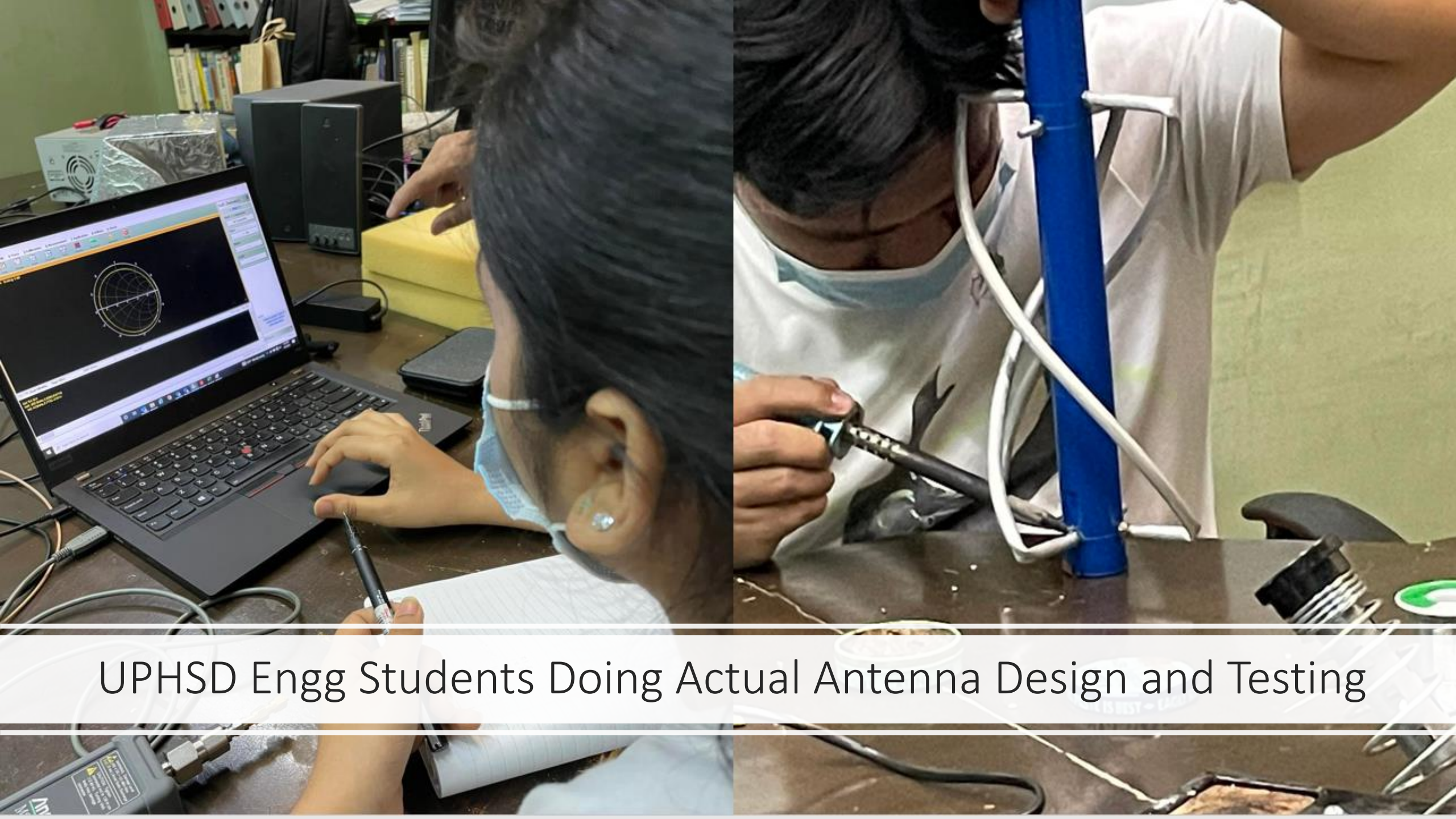
The decoding tool is now being researched to create a Python API that will allow the system to decode data from WAVE format to comprehensible format and save it on the system.

02 Administration tools

Based on the current development of system administration tools, new functionalities will be added.

03 Data Inventory tools

Development of the data inventory and its required functions

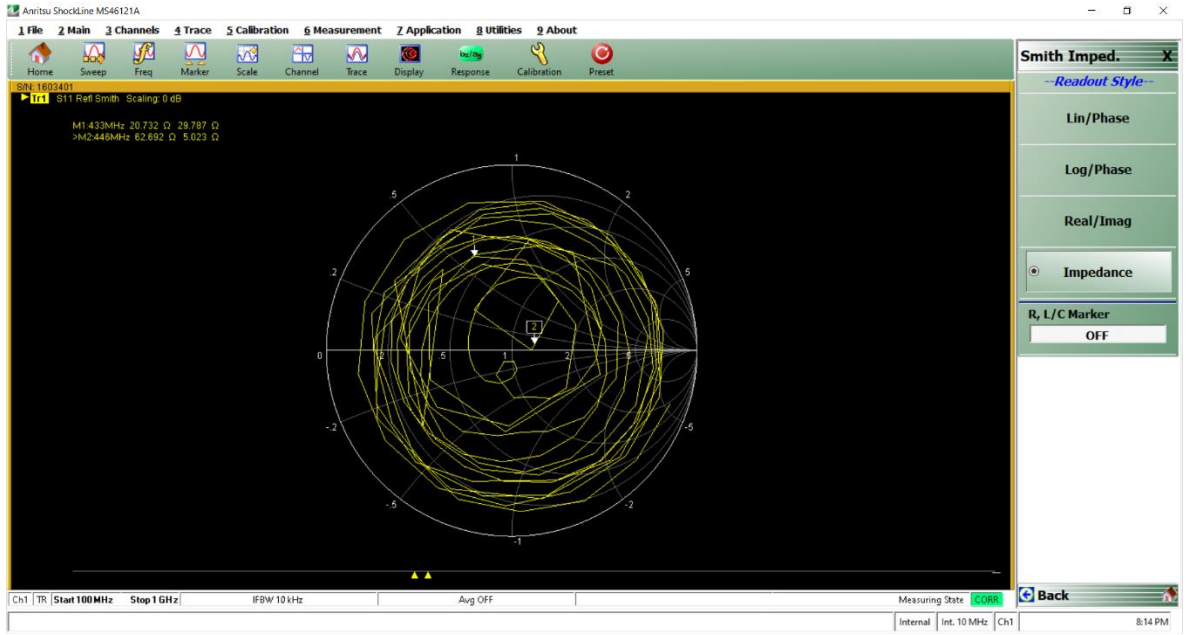


UPHSD Engg Students Doing Actual Antenna Design and Testing

Quadrifilar Antenna

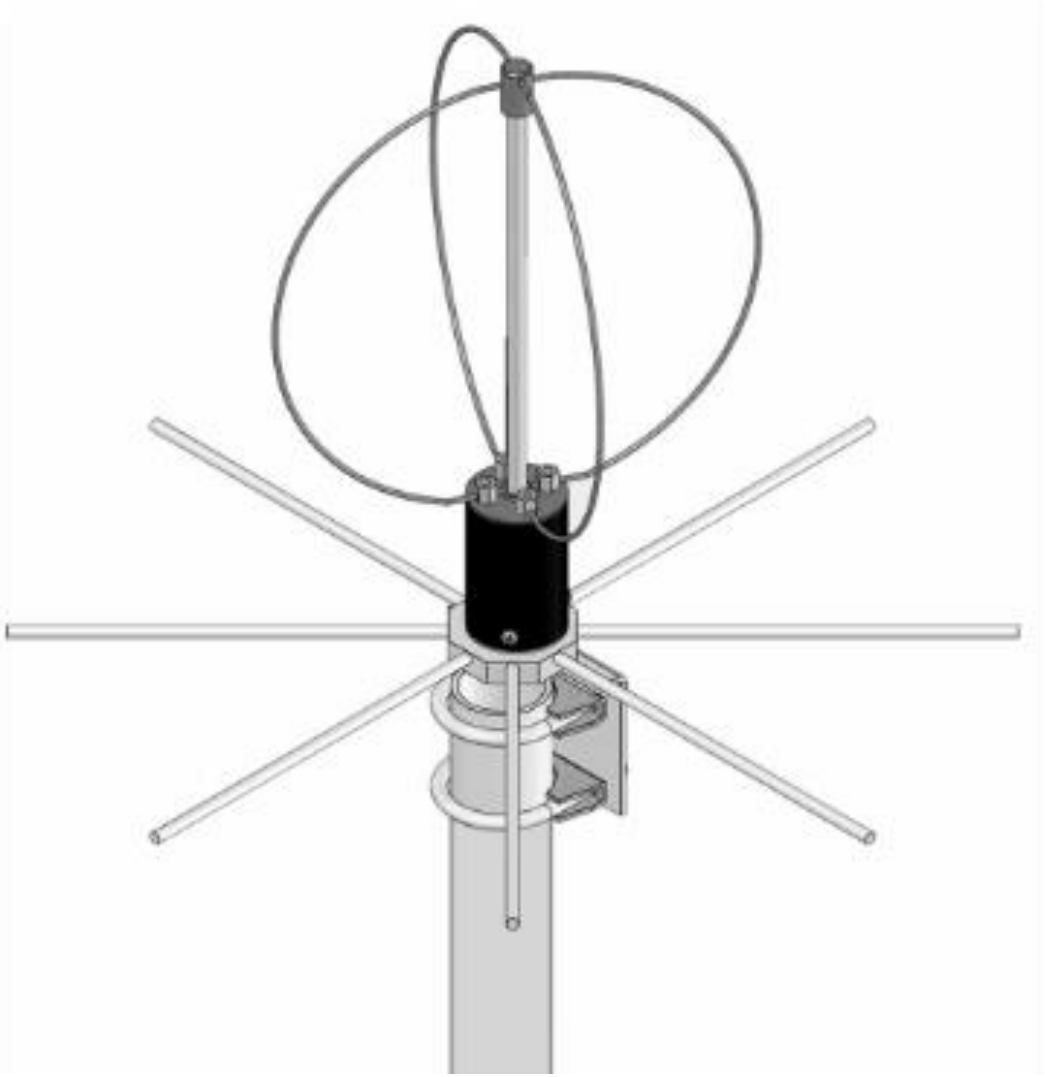
3pcs quadrifilar antenna for the Kitsune satellite.

These were hand built and tuned in the school lab.

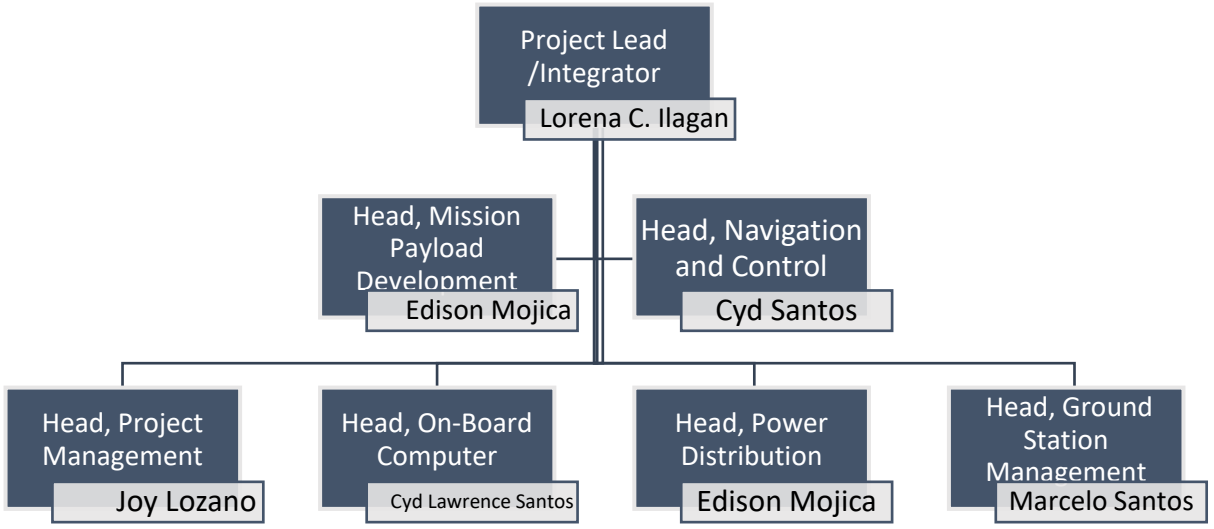


S11 reflection coefficient parameter of the antenna tuned to 433MHz

Next project in the pipeline – an Egg Beater antenna



Next built will be an Egg Beater antenna for the Asean satellite.



Position	Description of Function
Project Leader/ Project Integrator	Will check the progress of each component of the project. Disseminate tasks in each member. Provide initial administrative and technical expertise in implementation of the the project.
Head, Mission Payload	Assist to the function of the project leader. Provide technical expertise in each component. Provide information of the compatibility of each component within the mission
Head, Navigation and Control	Assist to the function of the project leader in the navigation and attitude control of the nanosatellite
Head, Project Management	Plan the overall execution of the project. Assign manpower needed for the applicable technology Plan the execution of task to complete the objectives
Head Power Distribution Management	Plan the execution of the power distribution in the nanosatellite payload with the required maximum capacity using solar energy. Do the necessary research applicable for the assigned component.
Head, On Board Computer	Plan the specific execution of the on board microcontrollers and processors in the payload. Do the necessary research for the assigned component
Head, Ground Station	Plan the necessary execution for the ground station set up. Do the necessary planning and research especially for the manning of the ground station

BS AERONAUTICAL ENGINEERING MAJOR IN SPACE FLIGHT

- Materials in Aerospace Vehicle
- Space Instrumentation
- Air and Space Transport Economics
- Meteorological Engineering
- Aircraft Modeling Analytics

FIFTH YEAR

FIRST SEMESTER

SUBJECT CODE	SUBJECT NAME/DESCRIPTION	HOURS		UNITS		PRE-REQUISITE	CO-REQUISITE
		LEC	LAB	LEC	LAB		
BSAE 5136	Materials for Aerospace Vehicle	3	0	3	0		
BSAE 5137	Aerospace Vehicle Structure 1	3	0	3	0		
BSAE 5138	Space Engineering Fundamentals	3	0	3	0		
BSAE 5139	Systems and Instrumentation of Aerospace Vehicle	3	0	3	0		
BSAE 5140	Air and Space Transport Economics Management	3	0	3	0		
BSAE 5141	Space Probes and Satellite	3	0	3	0		
	TOTAL	**18**	**0**	**18**	**0**		

TOTAL ACADEMIC UNIT(S): 18.0

SECOND SEMESTER

SUBJECT CODE	SUBJECT NAME/DESCRIPTION	HOURS		UNITS		PRE-REQUISITE	CO-REQUISITE
		LEC	LAB	LEC	LAB		
BSAE 5242	Aerospace Vehicle Structure 2	3	0	3	0		
BSAE 5243	Airport and Spaceport Engineering	3	0	3	0		
BSAE 5244	Aerospace Operations and Management	3	0	3	0		
BSAE 5245	Meteorological Engineering	3	0	3	0		
BSAE 5246	Aircraft Modelling Analysis	3	0	3	0		
	TOTAL	**15**	**0**	**15**	**0**		

TOTAL ACADEMIC UNIT(S): 15.0

Digital Students Curriculum

STRATEGY 1: Formulation of focus domains productivity tools, ICT, Programming & Multimedia, and Innovation & technopreneurship

Productivity Tools

COMPUTER

Essential Skills
Create and Collab
Compute Skills

Programming & Multimedia

DIGITECH 1

Programming Skills
Creative Skills
Coding Skills
Robotics

ICT Skills

TLE / ICT

Network Technology
Cybersecurity
Cloud Technology

Emerging Tech, Innovation and Technopreneurship

DIGITECH 2

Creating a Culture of Innovation and Technopreneurship
Emerging Technologies
Space Engineering

UNISEC
University Space Engineering Consortium PHILIPPINES

8 981-8500 Loc 3305
unisecph@gmail.com
Electrical and Electronics Engineering Institute,
University of the Philippines Diliman
Quezon City, Philippines 1101

27 February 2020

ENGR. LORENA ILAGAN
Dean
College of Engineering
University of Perpetual Help
Las Piñas Campus

Subject: UNISEC Philippines membership

Dear **Dean Ilagan**,

We would like to welcome the **University of Perpetual Help System Dalta Las Piñas Campus** to the University Space Engineering Consortium (UNISEC) Philippines, a local chapter of UNISEC Global.

UNISEC Philippines serves as the lead organization for research, instruction, and inter-university and global collaboration in space technology and applications. It is also envisioned to be the local hub for knowledge exchange and capacity development, where Filipino competencies in space technology and applications can be showcased.

As your university is now a member, our facilities at the University Laboratory for Small Satellites and Space Engineering Systems (ULyS^{3}ES) are being made available to assist in your space-related research and development, and various activities. ULyS^{3}ES houses a thermal-vacuum chamber, clean booths, rapid prototyping equipment, amateur radio satellite station, and full anechoic chamber, among others. We can also link you to other partners should you need other facilities to complement those we have at ULyS^{3}ES. In addition, we can also provide space- and engineering-related expertise, and can accommodate workshops and training on these topics.

Should you require these facilities and/or services, you may contact Ms. Mara Mendoza via email at mara.mendoza@eee.upd.edu.ph or via phone at 02 8981 8500 loc. 3305.

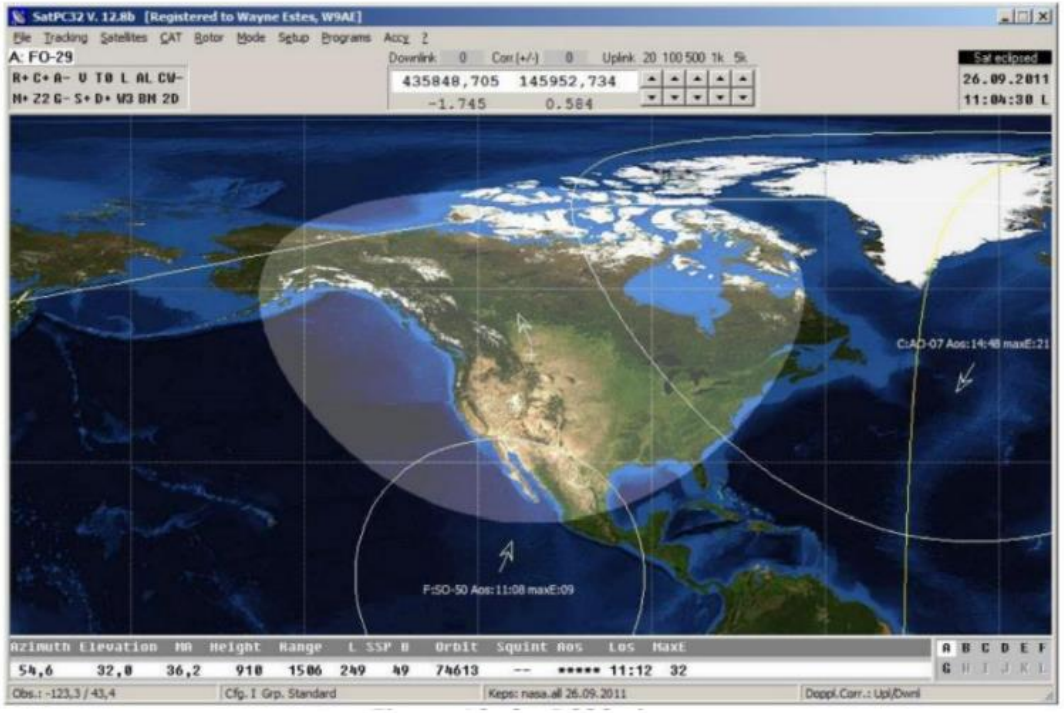
We are glad to have you on board with us as we continue to forge partnerships and we are looking forward to exploring opportunities for collaboration with you.

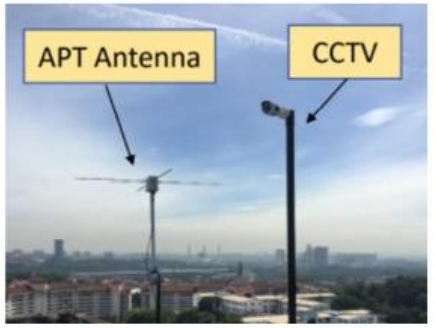
Again, welcome to UNISEC Philippines!

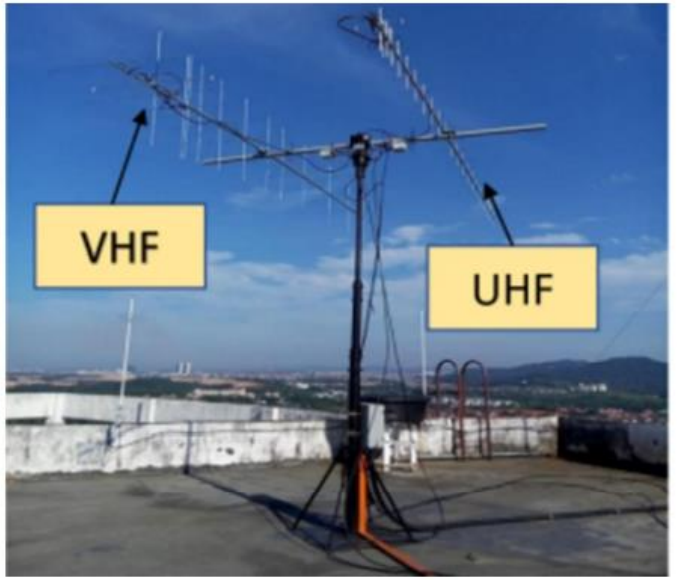
Sincerely,

ENGR. PAUL JASON CO
UNISEC Philippines Secretary
Project Leader, STAMINA4Space Project 3: STeP-UP
Assistant Professor, UP EEEI

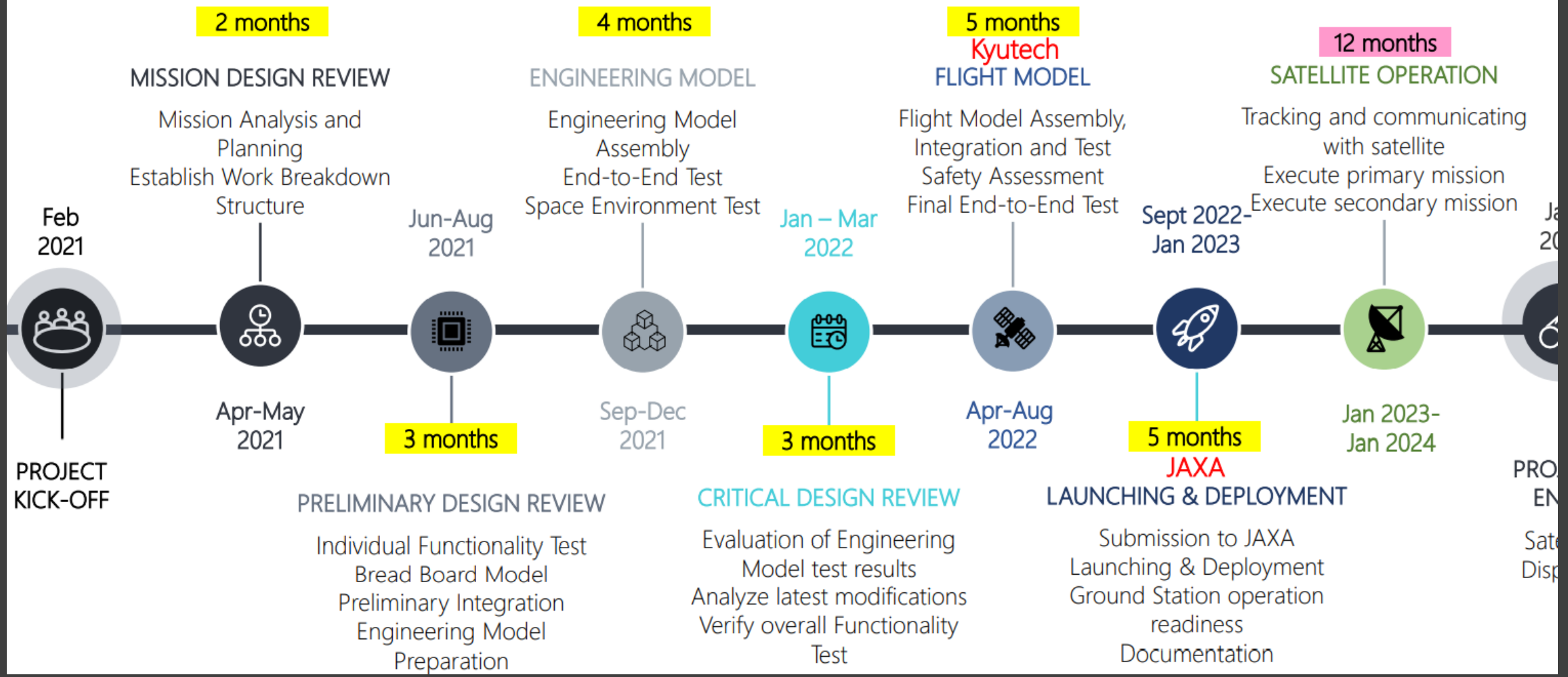
PERPSAT-1 GROUND STATION FUNDED BY DOST-PCIEERD USED FOR COMMUNICATING WITH NANOSATELLITE

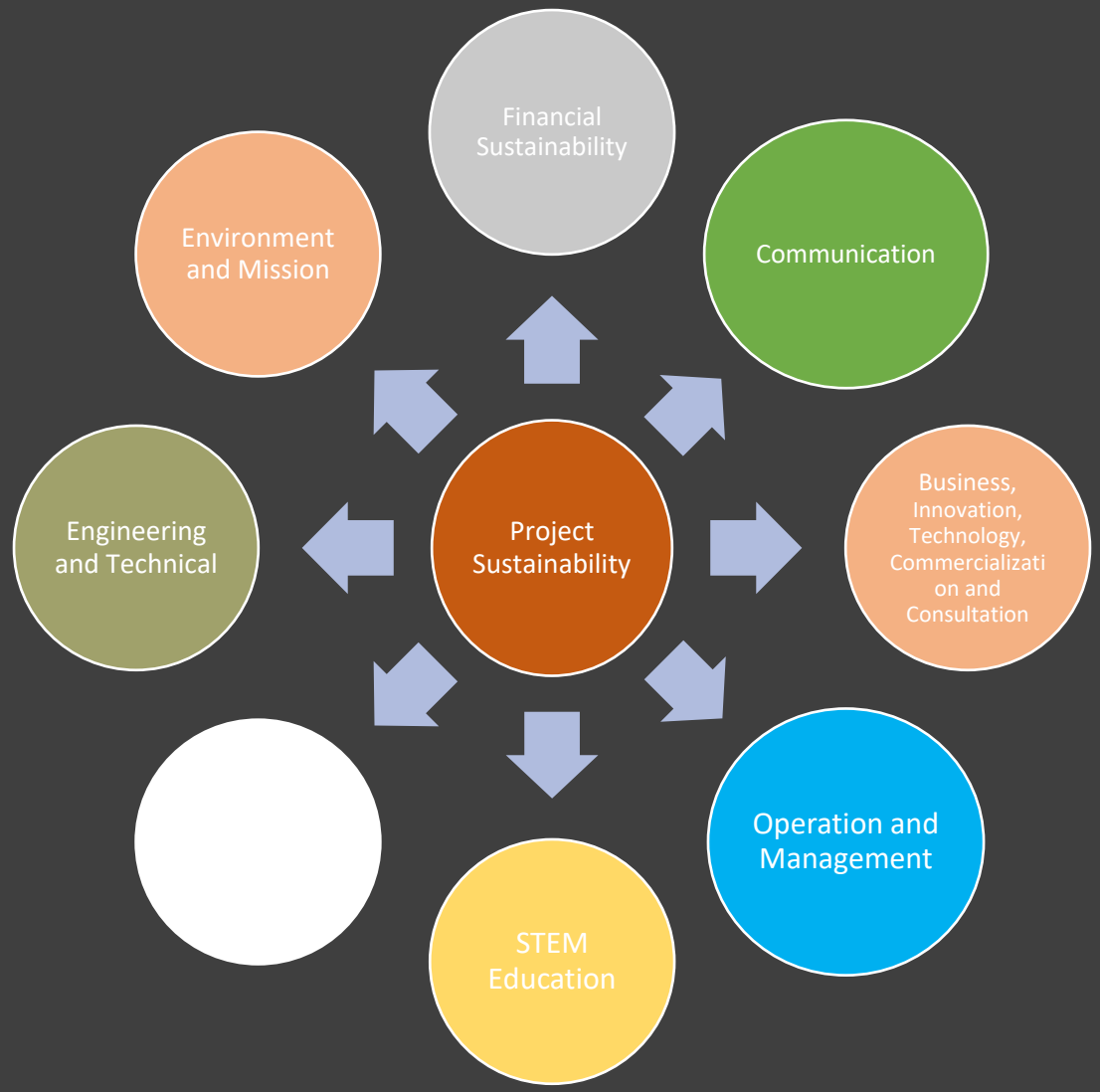






PROJECT TIMELINE




Financial Sustainability
Environment and Mission
Communication
Engineering and Technical
Project Sustainability
Business, Innovation, Technology, Commercialization and Consultation
Operation and Management
STEM Education

PH university to launch nanosatellite to space with Malaysian, Thai tech schools

By: Zacarian Sarao - @inquirerdotnet INQUIRER.net / 10:17 PM March 14, 2022

EDITORS' PICK MOST READ


TECHNOLOGY
A laptop that maximizes your WiFi so you can maximize your productivity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House energy committee chair Arroyo bats for cheap electricity


ENTERTAINMENT
'FPJ's Ang Probinsyano' officially ends after nearly

Republic of the Philippines
Department of Science and Technology
PHILIPPINE COUNCIL FOR INDUSTRY, ENERGY AND EMERGING TECHNOLOGY RESEARCH AND DEVELOPMENT (PCIEERD)

01 December 2021

DR. ANTHONY JOSEM. TAMAYO
President
University of Perpetual Help System Dalta
Pamplona III, Alabang-Zapote Road, Pamplona, Las Pinas City

Attention: ***ENGR. LORENA C. ILAGAN***
Project Leader

Dear ***President Tamayo***:

This refers to the project proposal titled "***PERPSAT1: UPHSD Amateur Satellite Ground Station Development***" submitted by Engr. Lorena C. Ilagan under the PCIEERD Institution Development Program.

We would like to inform you that the said proposal has been ***approved*** by the PCIEERD Management Team (PMT) in its September 9, 2021 meeting for a duration of twenty-four (24) months with funding assistance of ***Four Million One Hundred Fifty-Two Thousand, Two and 38/100 Pesos (P 4,152,002.38)***. The approval of the proposal was further confirmed by the PCIEERD Governing Council during its 113th meeting on November 11, 2021 through GC Resolution No. 136, S. 2021.

Please note that we have sent a copy of MOA thru Engr. Ilagan for your legal officer's review. Should you find the MOA acceptable, kindly facilitate the signing of 5 copies of the MOA and return it to us by 29 November 2021.The funds can be released only upon receipt of the originally signed MOA.

We shall schedule a virtual MOA signing ceremony and Pre-Implementation Meeting on a mutually agreed schedule. We will coordinate with Engr. Ilagan on the final schedule. For queries and information, please feel free to contact Ms. Eidel Quinn T. Eda through e-mail eteda@pcieerd.dost.gov.ph.

Very truly yours,

DR. ENRICO C. PARINGIT
Executive Director

Thank you!

- ***Contact information:***
- ***Ilagan, Lorena***
- **Dean**
- **College of Engineering**
- **lorena.ilagan@perpetuadalta.edu.ph**
- **(02) 8871-0639 loc 117**
- **www.perpetualdalta.edu.ph**
- **engineering.laspinas@perpatualdalta.edu.ph**