

Local Chapter Activity Report at the 11th UNISEC-Global Meeting

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UNISEC-Philippines

History of Local Chapter Activities

Established in 2019

- **Attended UNISEC-Global Meeting** in 2019
- Participated in **CLTP** in 2022
- Hosted the **24th UNISEC virtual meeting** on August 2022
- Hosted/Organized seminars:
 - Amateur Radio training
 - Lectures on small satellites
 - SE4E: Space Education for Educators
- Held local chapter meetings
- **Indiana Aerospace University (IAU) hosted the Philippine Can Satellite Rocket Competition 2025**



History of Local Chapter Activities

- **Space-related projects:**
 - Maya-2, 3, 4, 5, and 6 deployed
 - Maya-7 under development
 - TERESA (IAU) and TALA (ADDU) rockets
 - FPGA-SDR development for OBC subsystem (MSU-IIT)
- Participation of students in the Philippine Space Agency's **Space Business Innovation Challenge (SBIC)**
- Presentation and participation in the **International Astronautical Congress (IAC) 2025**
- Moderation of the 61st Virtual UNISEC Global Meeting
- Activities with the Space Generation Advisory Council (SGAC) Philippines



IAC 2025

Ateneo de Davao University (ADDU) Participation in IREC 2025



ADDU Rocketry Team participated in the 30k COTS category of the IREC 2025. The Siklab Rocket was the first attempt for supersonic rockets in Philippine history!

ADDU Participation in Malaysia Rocket Cansat Competition



ADDU Rocketry Team won 1st place in the University Category 2 (Rocket and Cansat) at the Malaysia Rocket Cansat Competition held last September 2025.

Activities in Adamson University (AdU)

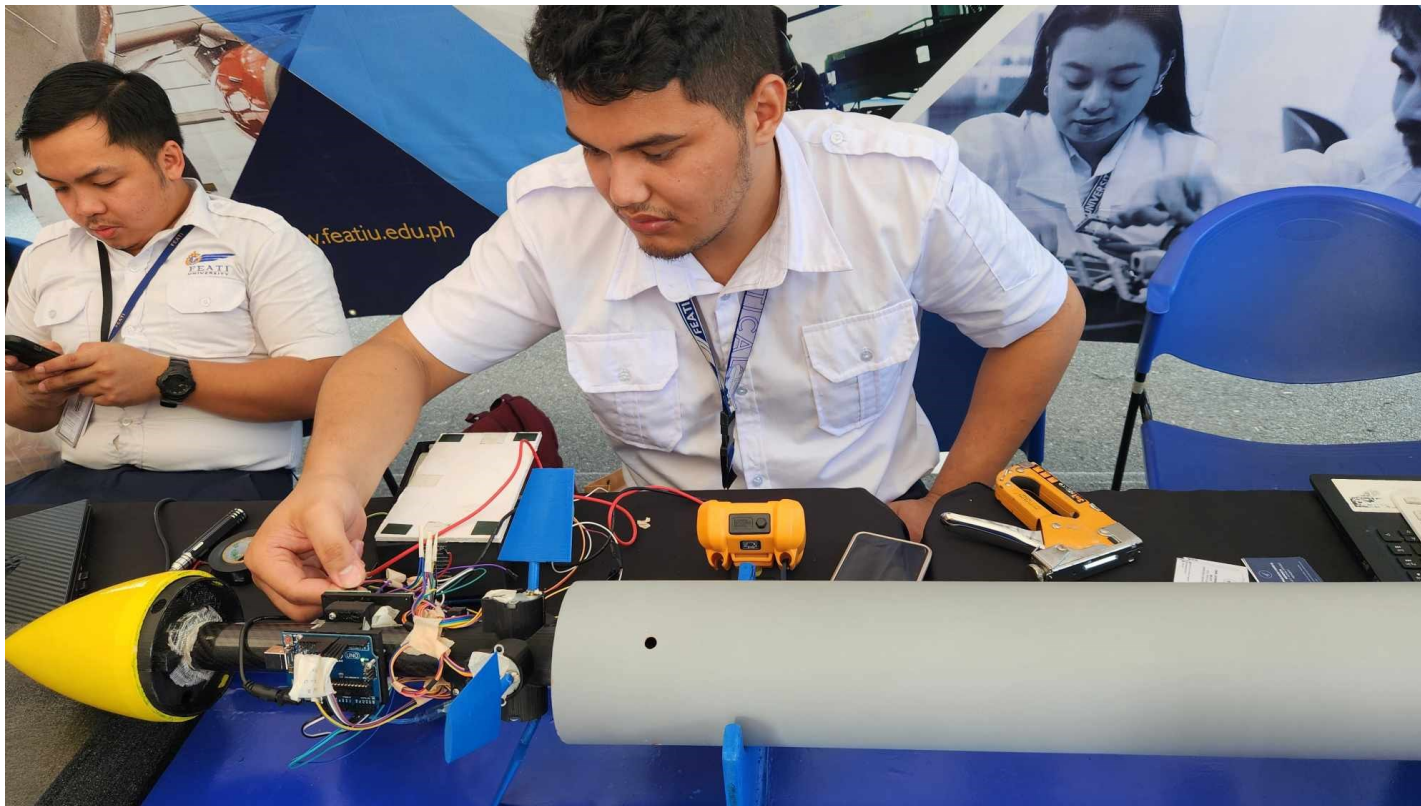
- Building & Utilizing Satellite Ground Stations: ECE Applications in Amateur Radio, May 10, 2025.



- 1st Philippine Space Science & Astronomy Research Conference (PSSARC)



Activities of FEATI University



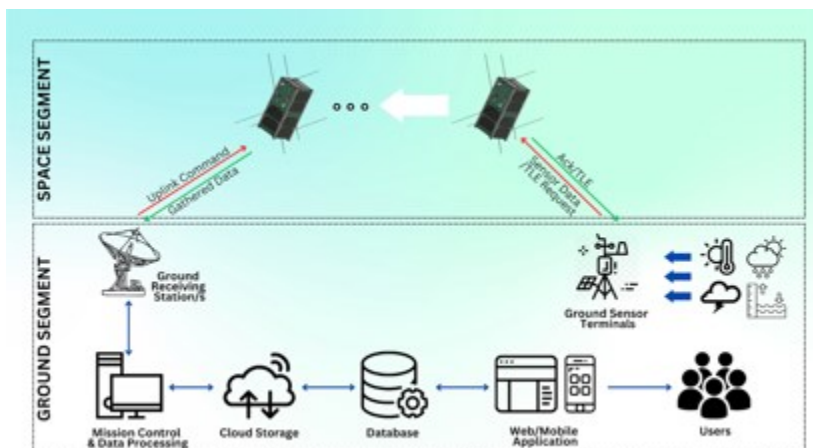
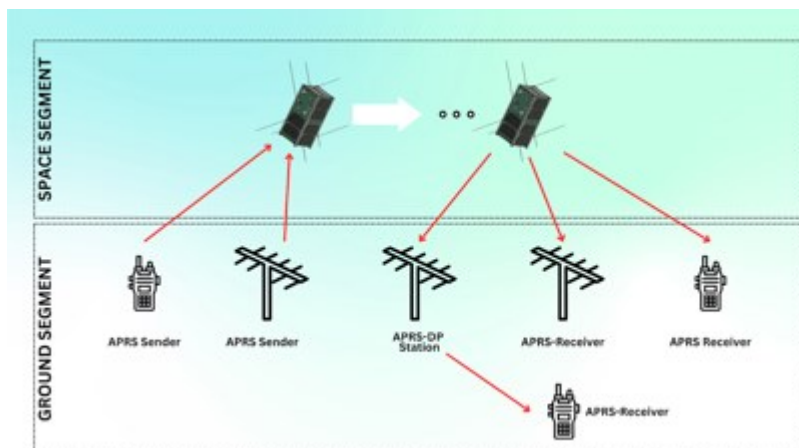
- Rocket development activities: amateur rockets, solid rockets and hybrid rockets. We plan to join international amateur rocket competitions in 2026.
- Establishment of Bachelor's degree in Aerospace Engineering Program which geared towards more to space such as satellite and rocket development. We hope to offer the said program in 2026 once approved.

AdU's Project MARiTES

Project MARiTES: **M**ultipurpose **A**PRS
 (Automatic Packet Reporting System) in
 Nanosatellite for **R**isk Reduction in **T**imes
 of **E**mergency **S**ituations



Implementation: 8/15/2024 to 8/14/2025



IAU's Philippine CanSat Rocket Competition 2025



Can Satellite, Rocket and
Telescope Workshop

FTV

Lunar Eclipse Viewing



Eggdrop Competition Water Rocket Competition

Quiz Bowl

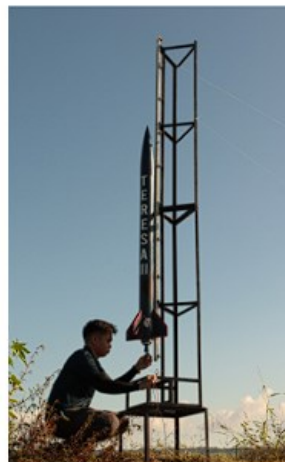
First Philippine Can Satellite Rocket Competition 2025

Host University: Indiana Aerospace University

• IAU's Competition Outreach Model

- Developed locally made reusable rockets (~353.02 US Dollars) and Can Satellites (~88.25 US Dollars)
- Developed modules for model rocketry and Can Satellites
- Implemented the Train-the-Trainer Program for faculty
- Collaborate with different government agencies and private organizations with interest in space science
- Organize a National Rocketry and Can Satellite Competition

Figure 2. Sample locally made reusable rocket produced by Indiana Aerospace University



Host University: Indiana Aerospace University

Location: Lapu-Lapu City, Cebu

Universities who join the competition:

1. **Indiana Aerospace University***
2. **University of the Philippines Diliman***
3. *Cebu Aeronautical Technical School*
4. **Adamson University***
5. *Rizal Technological University*
6. **De La Salle University – Manila***
7. **Cebu Technological University***
8. **University of Perpetual Health System - Dalta***
9. *Airlink International Aviation College*

***UNISEC-PH Member Universities**

• Philippine Can Satellite Rocket Competition Program Design

Phases	Description	Timeline	Date Implemented
1	Registration and Application	1 month	October 2024 - November 2024
	• (1) Can Satellite Category • (2) Can Satellite and Rocket Category		
	Acceptance Notification	1 week	November 10 - 15, 2025
2	Training and Workshop	2 weeks	November 26 - 28, 2024 December 2 - 4, 2024
3	Construction, Design, Fabrication and Testing	3 months	December 2024 - March 2025
4	Ascent2Inspire Lecture	1 day	May 27, 2025
5	Launch Campaign	1 week	July 17 - 21, 2025

First Philippine Can Satellite Rocket Competition 2025

Host University: Indiana Aerospace University
Location: Lapu-Lapu City, Cebu

• Training and Workshop

◦ Cebu-based Universities

[November 26 - 28, 2024 | 4 Universities/Colleges]

◦ Manila-based Universities

[December 2-4, 2024 | 7 Universities/Colleges]

The workshop topic includes the following:

[a] Mission Planning and Design, [b] Development of Flight Systems, [c] Software Development & Testing, [d] Integration & Environmental Sensor Testing, [e] Can Satellite Testing Deployment



Figure 3. Can Satellite and rocket workshop participants from (a) Cebu participants and (b) Manila



"We're beginners,...but necessity is the source of innovation." - DLSU Manila



"It doesn't feel like a competition, parang boot camp po siya, dahil marami kaming na learn," - UP Diliman



"Every failed launch, every misfire, every system error, each one was a lesson in disguise. Success isn't built in a single flight, but in the courage to try again and to rise, until one day, everything works, and the sky welcomes your dream" - Joaquin (IAU Research and Development)



"Growth happens when we try, fail, and try again. Keep dreaming big and aiming high because this is just the beginning" - Michelle (IAU Research and Development)

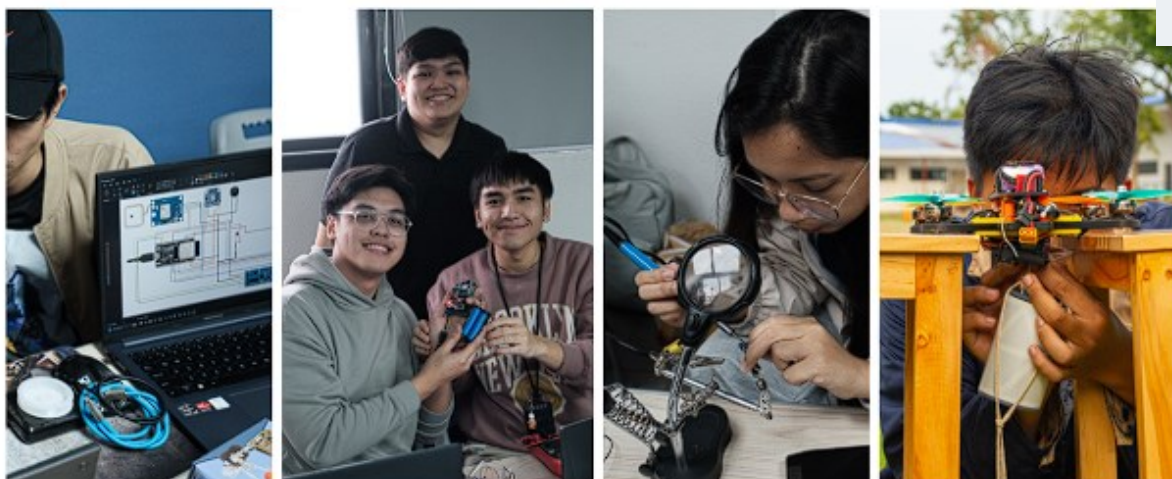


Figure 4. Can Satellite and Rocket workshop documentation (a) participants examining the schematic diagram (b) showing their final output of the workshop (c) soldering the ms5611 pressure sensor, and (d) a competition organizer attaching the can satellite into a drone for drop deployment testing

First Philippine Can Satellite Rocket Competition 2025

Host University: Indiana Aerospace University
 Location: Lapu-Lapu City, Cebu

SPECIAL EDITION

CEBU PHILIPPINES * ASCENT2ISNPIRE * 10°17'33.0"N 123°58'33.9"E

PHILIPPINE CAN SATELLITE ROCKET COMPETITION 2025

THE PHILIPPINES MADE HISTORY THIS JULY WITH THE INAUGURAL PHILIPPINE CAN SATELLITE ROCKET COMPETITION (PHCANSATRC) 2025, A GROUNDBREAKING NATIONAL EVENT HOSTED BY INDIANA AEROSPACE UNIVERSITY (IAU) THAT BROUGHT TOGETHER THE BRIGHTEST STUDENT INNOVATORS FROM ACROSS THE COUNTRY.



A NATIONAL FIRST FOR SPACE EDUCATION

Organized by IAU's Aerospace Engineering Research and Development Team, the week-long competition aimed to develop hands-on skills in satellite technology, rocketry, and systems engineering. Far from being limited to aerospace majors, the event welcomed students from diverse fields including engineering, physics, computer science, and applied sciences highlighting the interdisciplinary nature of space exploration.

BUILDING BRIDGES BETWEEN ACADEMIA AND INDUSTRY

PHCANSATRC was more than just a competition, it was a platform for collaboration. By bringing together universities,



PHILIPPINE CAN SATELLITE ROCKET COMPETITION 2025

July 17 - 21, 2025

- First nationwide Rocket & Can Satellite Competition in the Philippines hosted by **Indiana Aerospace University**
- Provide a Philippine Record of 23 High-Powered Rocket Launch in a single day (July 20, 2025)
- Two Categories:
 - Can Satellite & Rocket
 - Can Satellite Only
- 5 days event
 - Competition Exhibit
 - Final Preparation
 - Rest Day
 - Launching & Final Testing
 - Data Presentation & Awarding
- 30+ Teams (11 University Participated)



The Philippine Can Satellite Rocket Competition 2025 marks a pivotal milestone in national space education.

As the final rockets were recovered and the awards handed out, one message rang clear: the Philippines is ready to reach higher and dream bigger in the realm of space science and technology. 🚀 PH

mentors, industry partners, and government stakeholders, the event helped strengthen the foundations of the Philippines' emerging space ecosystem. This aligns with national goals set forth by the Philippine Space Agency (PhlSA) and partner institutions to inspire and equip the next generation of Filipino scientists, engineers, and innovators.

List of member universities

15 MEMBER UNIVERSITIES

1. Adamson University
2. Ateneo de Davao University
3. Bataan Peninsula State University
4. Batangas State University
5. Cebu Technological University
6. De La Salle University
7. FEATI University
8. Holy Angel University
9. Indiana Aerospace University
10. Mapua University
11. Mariano Marcos State University
12. Mindanao State University - Iligan Institute of Technology
13. University of Perpetual Help System
14. University of the Philippines
15. University of San Carlos

Plan for 2025-26 and beyond

- Make **UNISEC Philippines visible** to more universities nationwide.
- Involvement in and support of **IAU's 2nd Can Satellite Rocket Competition**
 - Includes High School and College Level
- Harmonize activities of member universities.
- Execution and hosting of **Space Mission Analysis and Design course**
 - Open to all undergraduate and graduate students in the country.
 - Weekly lectures with invited lecturers on specific topics.

Space Mission Analysis and Design Course *Tentative Outline*

Week 1	Introduction to Space Missions Engineering
Week 2	Spacecraft Design
Week 3	Trajectory and Orbits
Week 4	Command and Data Handling Subsystem
Week 5	Telemetry, Tracking, and Command Subsystem
Week 6	Electrical Power Subsystem
Week 7	Thermal Control Subsystem
Week 8	Attitude Determination and Control Subsystem
Week 9	Satellite Structure
Week 10	Space Environment Testing and Qualification
Week 11	Launch and Mission Operations
Week 12	Brief Introduction to Space Law and Policy

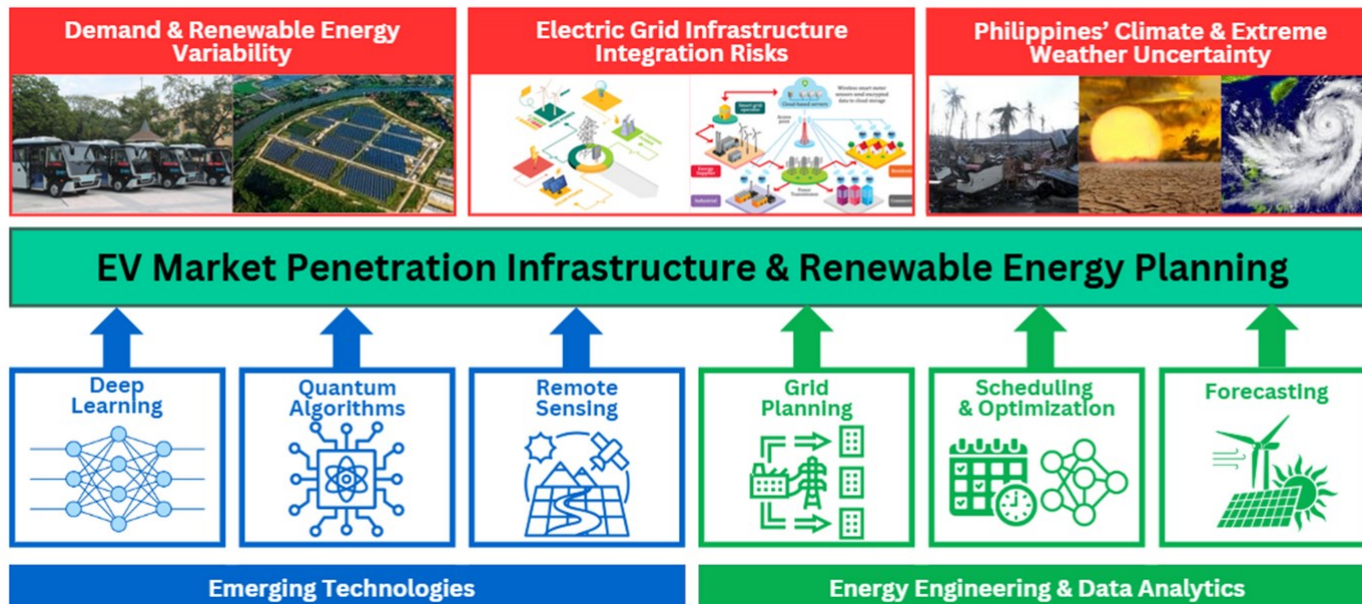
University Projects 2025-26 and beyond

- AdU's **Project STArQE**: Integrating **S**pace **T**echnology, **Q**uantum Algorithms Development, and **A**I Technology for Next-Generation Decision-Support for **E**-Vehicle and Renewable Energy Infrastructure Planning
- IAU's **Teresa-V** High Powered Rocket Launch (3km, 5km, 10km)
 - IAU SPATIUM Laboratory will be operational
 - Cubesat for Student Project Development
- MSU-IIT's **Project ORBIT**: **O**utreach and **R**esearch for **B**eyond-Earth Innovations and **T**echnologies
- UPD's **SATREPS** proposal **M-POWER**: Advancing Microwave Wireless Power Transfer in the Philippines
 - **Project POWER BEAM** (proposal stage)

AdU's Project STArQE

Project STArQE: Integrating Space Technology, Quantum Algorithms Development, and AI Technology for Next-Generation Decision-Support for E-Vehicle and Renewable Energy Infrastructure Planning (APPROVED)

Implementation: 8/4/2025 to 8/3/2028



IAU's SPATIUM Laboratory

Space Propulsion and Aerospace Technology Integration, Utilization, and Management Laboratory

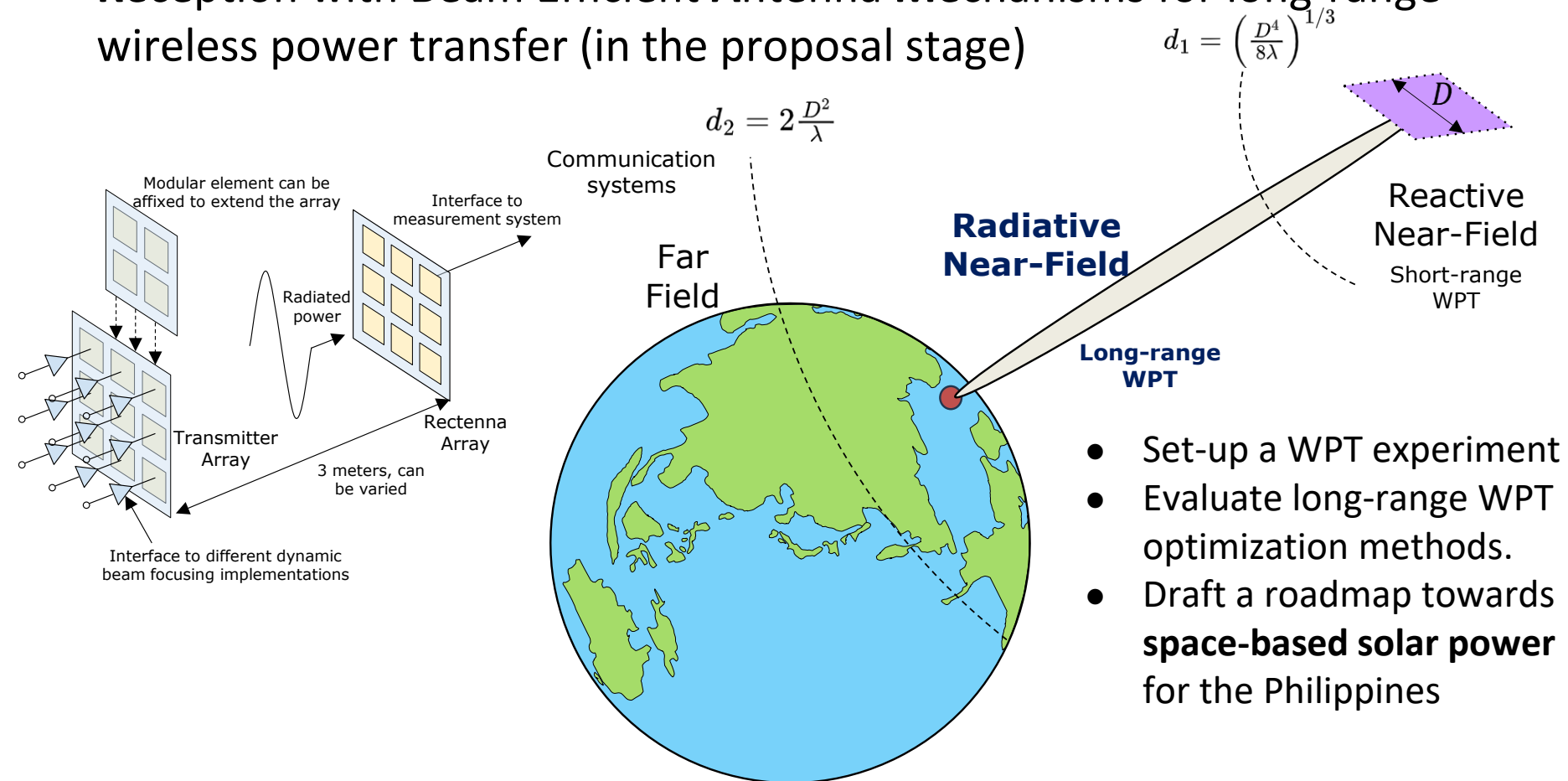


The SPATIUM Laboratory serves as Indiana Aerospace University's premier research and development hub dedicated to space propulsion, aerospace systems integration, and technology utilization for educational and national innovation. It focuses on the design, testing, and management of experimental propulsion systems, flight hardware, and satellite components developed by students and faculty under the university's hands-on aerospace engineering program.

- Spatium's Rocketry Research Laboratory
- Machining Workshop Laboratory
- Workshop Prototyping Laboratory
- Autonomous and Unmanned System Laboratory
- Solid Rocket Propulsion Laboratory

UPD's Project POWER BEAM

POWER BEAM: Prototyping and Optimization of Wireless Energy Reception with Beam Efficient Antenna Mechanisms for long-range wireless power transfer (in the proposal stage)



- Set-up a WPT experiment
- Evaluate long-range WPT optimization methods.
- Draft a roadmap towards **space-based solar power** for the Philippines

THANK YOU!

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