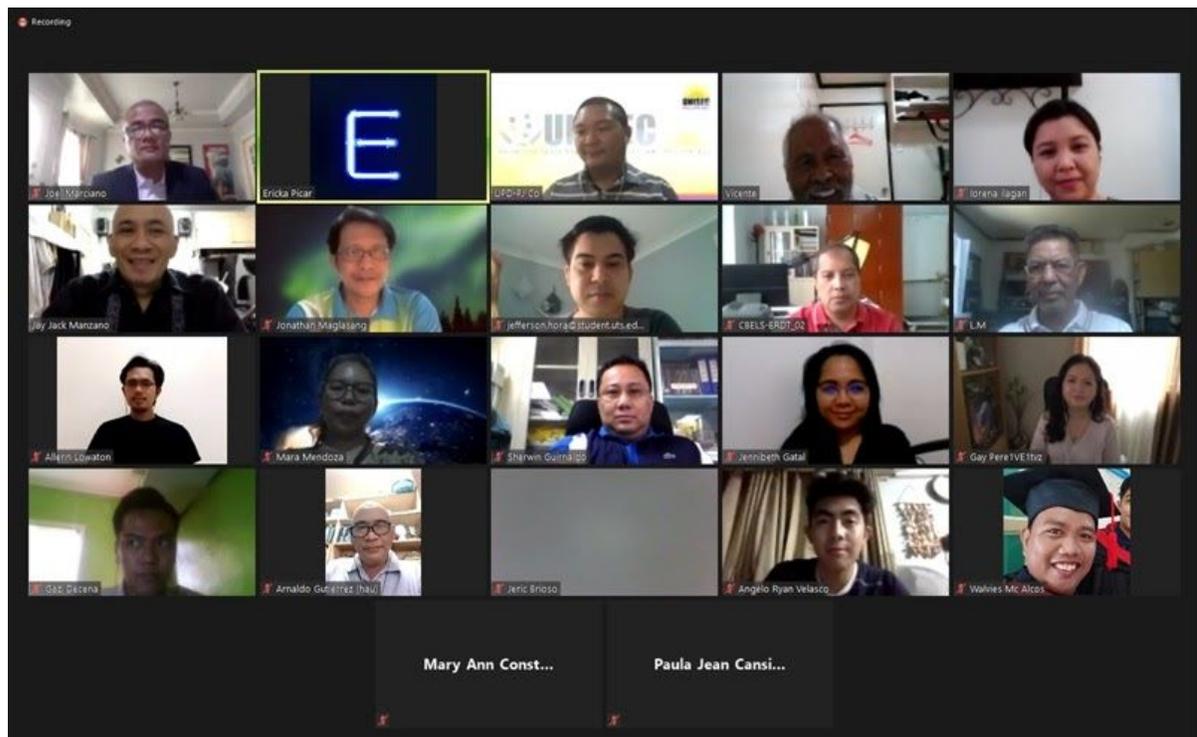




## UNISEC Philippines Meeting

July 17, 2020 | 08:30 am - 12:00 nn PHT

Virtually done via Zoom Video Communications, Inc.



## Part A

### Introduction and Meeting Opening Messages

#### Introduction

Engr. Paul Jason Co, UP EEEl / STeP-UP

#### Highlights

- Acknowledgement of Participants
- Presentation of House Rules

#### Opening Message

Dr. Rowena Cristina L. Guevara, Department of Science and Technology



#### Highlights

- Filipinos are curious people and that led us to explore more advanced technologies to participate in global efforts and respond to local needs
- Presentation of PHL-Microsat, the Philippine satellites, and STAMINA4Space Program
- Presentation of some of the accomplishments of Filipino engineers in space related activities

*[Presentation](#): 1st University Space Engineering Consortium (UNISEC) Philippines Meeting*

## Message of Support

Ms. Rei Kawashima, UNISEC-Global



### Highlights

- Congratulated and acknowledged the seven UNISEC Philippines member universities
- UNISEC Big Dream 2030: No one will be left behind
- Four approaches to achieve the big dream:
  - Provide training programs
  - Organize forums, conferences and technical competitions
  - Raise space awareness
  - Acknowledge and support programs initiated by member universities
- Pandemic Activities:
  - Stay Positive Project - initiated by Japanese students to keep their high morale and motivation during a pandemic
- Overcome language diversity by respecting the spirit of mutual assistance

## Part B

### Space Science and Technology Initiatives and Updates from UNISEC Philippines

University of the Philippines Diliman

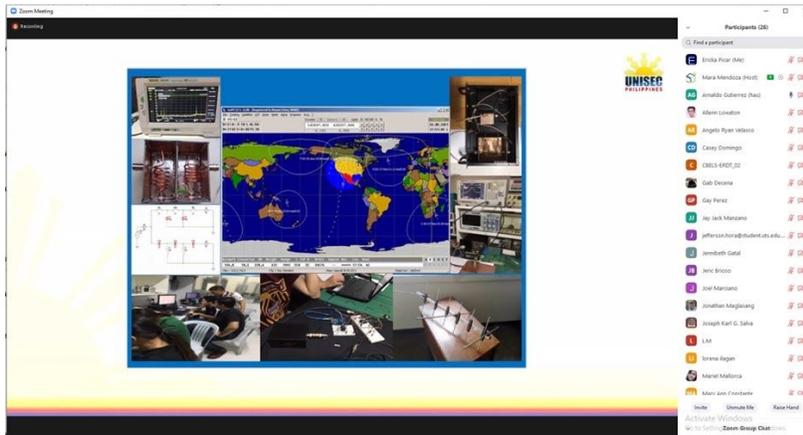
Engr. Paul Jason Co



- Commitment to UNISEC Philippines
  - Facilitate and open opportunities for collaboration and joint research
  - Exchange and sharing of information and materials (e.g. course materials, research papers, etc.)
  - Access to laboratory/facilities
  - Conduct of training, seminars, lectures, and workshops
  - Linkages to local and global networks
- Challenges:
  - Sustainability - depends on how active the members are. Activities of the UNISEC Philippines should continue beyond the STEP-UP Project, and more members join the consortium
  - Support
  - Active Participation
- Proposed Activities:
  - Training and Immersions
  - Opening of ARSS to other universities
  - Crafting of proposals

*Presentation: University of the Philippines-Diliman*

**Holy Angel University**  
**Engr. Arnaldo Gutierrez (on behalf of Engr. Adel Parungao)**



- **Space Initiatives:**
  - DARE-TO Weather Rocket Project
  - Continuous Development of AMSAT-Lab
  - Development of Automatic antenna rotator
  - Installation of Antenna Tower
  - Integration of Introduction to Satellite Communication to Elective courses
- **Future Plans:**
  - Establishment of multidisciplinary AMSAT Club
  - CANSAT making as collaboration project
  - Proposals for local and global consortium members
  - Future Integration of Satellite Communications courses in the curriculum
- **Commitment:**
  - Can offer facilities as venue for activities hosted by UNISEC Philippines
  - AMSAT LAB will be open for access
  - Faculty members can offer training and workshop
  - Participate in trainings and and other activities related to space science
- **Challenges:**
  - Curriculum was newly established, difficult to incorporate space-related courses right now
  - Multi-disciplinary projects would be a new normal if implemented
  - Lack of facilities and equipment that can be used for space-related projects
  - Lack of skills and knowledge in space science
- **Support needed:**
  - Equipment, training, workshop, project collaborations, and gearing the curriculum towards space science
- **Expectations:**
  - Support in terms of facilities, equipment, training/workshop
  - Future collaboration

- Sponsorship to international training and workshop
- Proposed activities
  - Collaboration
  - Countryside development
  - Utilization of satellite data to help farmers in central region

Presentation: Holy Angel University

## University of San Carlos Engr. Alberto Bañacia

**Background**

School of Engineering Enrollment Statistics  
2nd Semester SY 2019 -2020

Programs	BSCPE	BSC	BSCPE	BSECE	BSEE	BSIE	BSME	Graduate
Undergrad(old)	69	123	129	25	14	138	163(24)	
Undergrad(K12)	171	323	143	74	64	83	191	
MS/Meng'g.(PhD)	2	22	4	16	14	8	21(5)	
Subtotal	242	468	276	115	92	229	380	DEngg = 24
<b>TOTAL</b>	<b>1,826 (University wide = 11,589 August 2019 data)</b>							

**SOE Faculty Members**

- 75 – 80 Full time (all with at least a Master's degree)
- 8 FT (BSECE Program)
- 4 FT (BSEE Program)

Participants (20):

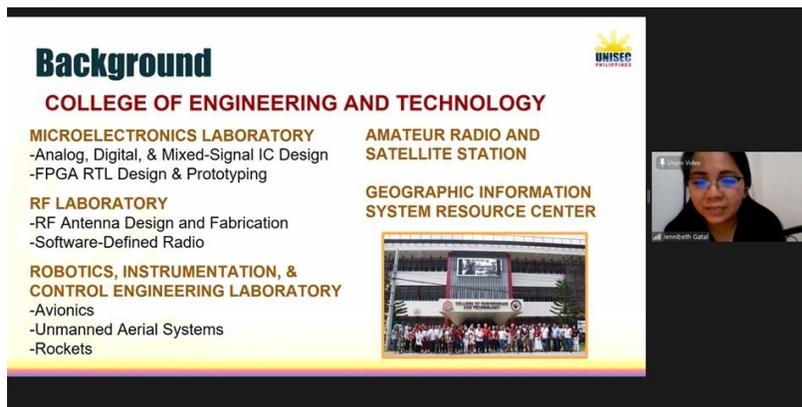
- Armando Galanec (Head)
- Carly Domingo
- Gab Devesa
- Gaylene Perez
- Jay Nick Mariano
- Jefferson Nolasco (Head of Institute)
- Jemboth Galat
- Joni Brisco
- Joni Mariano
- Jonathan Magbawang
- Joseph Karl G. Saha
- L.M.
- Veronica Begon
- Mariel Malbona
- Mary Ann Candalla
- Faith Jean Castillo
- Rosemarie Christine Gamara
- Sherrin Quinsabido
- UPD-01 Co.
- Viviana
- Wahneer Mc Alizo

- USC signs Research Agreement with NITC Japan and Malaysian Institutes
- Space Initiatives and Activities
  - ARSS and ARU Demo and Antenna Workshops
  - Tracking Activities of Amateur Radio Satellites
- Current Activities/Future Plans
  - Train select students on the use of ARSS to ensure continuity
  - Opening/Allowing visits to ARSS to stir interests among seniors from public/private schools and other stakeholders
  - Teaching of an elective class (e.g. Introduction to Satellite Communications)
  - Inclusion of Antenna workshops for satellite tracking in the wireless propagation laboratory
- Support:
  - Conduct seminar-workshops for satellite enthusiasts as they venture on the field of satellite communications
  - Provide other materials/facility equipment that can accommodate large numbers of faculty and students for a conducive learning environment.
- Proposed activities:
  - More seminars, workshops, and/or trainings for faculty and students to build capacity to conduct research and other space-related meaningful activities

- Invite students and other stakeholders to a tour on the facilities and laboratories of UNISEC Philippines
- Collaboration among member Universities to conduct research and other space-related meaningful activities
- Commitment
  - Facilities (in terms of space)
  - Faculty who can lecture on Introduction to Satellite Communications
  - Conduct training similar to ARSS Antenna workshop
  - Engagement in meaningful research once capacitated

*Presentation: University of San Carlos*

**Mindanao State University-Iligan Institute of Technology**  
**Engr. Jennibeth Gatal**



- Space Initiatives and Activities
  - 3rd Asia-Pacific Space Generation Workshop (AP-SGW 2016)
  - Spacecraft Dynamics and Control class was offered (2017)
  - Cassini Grand Finale (2017)
  - PHL-Microsat – MSU-IIT Collaboration through STeP-UP (2018)
  - Airbus Defence and Space Technical Seminar (2018)
  - Nanosatellite Lecture Series (2019)
  - UNISEC Philippines Membership (2019)
  - Apollo 11 50<sup>th</sup> Anniversary (2019)
  - STeP-UP visit in MSU-IIT (2019)
  - AI4EO (2019)
  - ARSS and ARU Demonstration and Antenna Workshop (2020)
- Future Plans
  - Space and Satellite Engineering, Satellite Communications in BSECE Curriculum
  - MS Nanosatellite Engineering student from MSU-IIT

- CanSat and Water Rocket Competitions
  - Promote Space Technology Benefits Awareness
  - MSU-IIT GIS Resource Center collaboration with DATOS
  - Northern Mindanao university linkages to promote Space Engineering and Technology through Amateur Radio Satellites
  - Partner with the Local Government Unit in harnessing the benefits of Space Technology
  - Projects utilizing satellite technology specifically in Healthcare and Disaster Management
  - Collaborate with University of Technology Sydney for RFIC projects.
- Aerospace Engineering Projects
    - Semi-ballistic rocket
    - Water rocket
    - Rocket motors
    - Blimp
    - Unmanned helicopter
    - Unmanned gliders
  - Satellite Engineering Projects
    - Satellite Technology in Healthcare
    - Satellite Technology in Disaster Management
  - Commitment:
    - Research and Design in RF Engineering (RADIRE) Laboratory
      - MSU-IIT can assist in the development and fabrication of satellite antennas
      - MSU-IIT can assist in the development of SDR-based satellite communication
    - Microelectronics Laboratory
      - MSU-IIT can assist in the development of nanosatellites based on FPGAs
      - MSU-IIT can partner with Analog Devices in the development of space-grade integrated circuits
    - Amateur Radio and Satellite Station
      - MSU-IIT can provide trainings and workshops to universities in the Northern Mindanao area
      - MSU-IIT can assist in the setup of an ARSS to universities in the Northern Mindanao area
    - Robotics, Instrumentation and Control Engineering Laboratory
      - MSU-IIT can assist in the development of rockets and rocket motors
      - MSU-IIT can assist in the development of unmanned aerial systems
      - MSU-IIT can assist in the satellite's Attitude Control
  - Challenges
    - Human resources - few would embrace the challenges in Space Engineering
    - Lack of in-depth knowledge
  - Support needed
    - Capacity Building

- In-depth training and workshop
- Future Plans
  - Launch a network of nanosatellites similar to Starlink

*Presentation: Mindanao State University-Iligan Institute of Technology*

**University of Perpetual Help – Las Piñas**  
**Dean Lorena Ilagan**



**Space Initiatives:**

- Initiative meetings with STAMINA4Space
- Development of first ASEAN collaboration project on nanosatellite: ASEANSAT

**Project Objectives**

- Provide a functional, fast and practical platform in the technology of nanosatellite’s development in Malaysia.
- Provide practical exposure and training to students / lecturers from universities involved in the whole process of nanosatellite’s development.
- Build human capital and expertise in the field of space technology among students / lecturers of universities in UiTM, enhance the visibility of UiTM, globally.
- Establish national and international networks between universities in Malaysia and abroad, government agencies as well as local industries, and this will drive research into the development of nanosatellite technology in Malaysia.
- A platform for nano and medium scale satellite development projects that involve cooperation between universities, industry and government agencies
- Visibility of UiTM/Malaysia among countries with expertise in the construction of nanotechnologies especially in ASEAN regions.
- To develop STEM education module based on satellite development and subsystems to nurture the interest in space-related technologies

**Challenges**

- STEM-SPACE: Modules to be prepared for STEM students
- Readiness, technical aspect, technology transfer

- External funding
- Student Mobility

#### Commitments

- Proliferate the growth of the development of nanosatellite
- Master/PhD and Professional Engineer/Technologies; development of human capital and expertise
- Contribute in the functional, fast and practical platform in the development of nanosatellite in country
- Empowering international collaboration between universities, government agencies and industries

#### Support needed

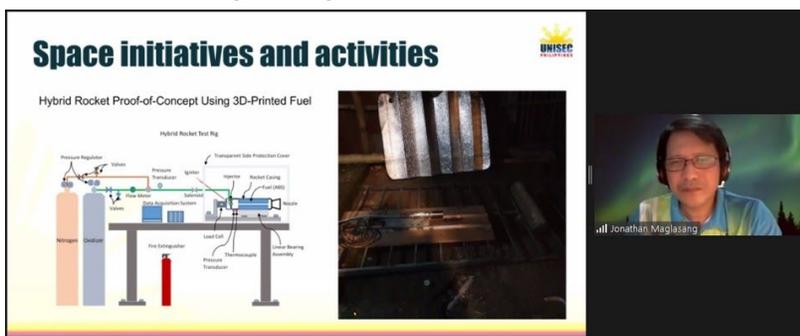
- Laboratory Use
- Consultation
- Endorsement
- Partnership

#### Expectations from UNISEC Philippines

- Active involvement in the Philippine Space Agency
- More technical transfer, workshops and training
- Joint/Collaborative engagements with more universities

*Presentation: University of Perpetual Help DALTA-Las Piñas*

### Cebu Technological University Dr. Jonathan Maglasang



#### Content / Highlights:

- CTU facilities to be established for Aerospace Engineering:
  - Propulsion Laboratory with Rocket Test Stands
  - Computational Design and Rapid Prototyping Lab
  - Vehicle Design and Dynamics Lab

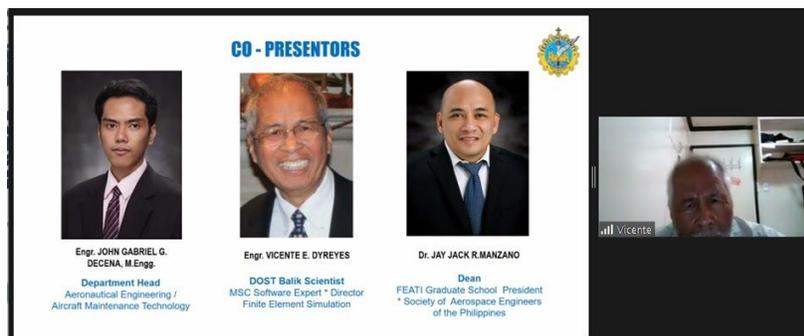
- Robotics, Instrumentation & Control Engineering (RICE) Lab
- Space and Terrestrial Communications Lab
- Wind Tunnels and Water Tunnels
- Space initiatives and activities
  - Introduced Space Engineering to undergraduate and graduate courses at MSU-IIT (Example: Spacecraft Systems Engineering, Spacecraft Dynamics and Control)
  - Water Rocket Challenge
    - Started in 2010 at MSU-IIT
  - Participated in Global Space Celebrations and Other Activities (Example: Cassini Grand Finale, Apollo 50th Celebration, Global Rocket Launch, etc.)
  - Solid Rocket Development with Holy Angel University (HAU)
  - Hybrid Rocket Development
    - Proof of concept using 3D Printed Fuel
- Commitment to UNISEC Philippines
  - Contribute in promoting space in Visayas region
  - Provide training programs to consortium members
- Challenges
  - Facilities (space and funds) - Hope to use the ULyS3ES of UPD
  - Manpower
  - Current Curriculum
  - Government support and funding
  - Facilities for members
- Proposed
  - Regular water Rocket Challenge to high school and elementary students
  - CanSat exposure to school children
  - Space Science and Engineering in TV/Radio/Online Program

[Presentation](#): *Cebu Technological University*

## FEATI University

### Dr. Cesar F. Domingo

Engr. John Gabriel Decena, Engr. Vicente DyReyes, and Dr. Jay Jack Manzano, Co-Presenters



## Content / Highlights:

- Background
  - To keep high level of academic effectiveness, its enrollment averages less than a thousand with a faculty of less than one hundred (full time & part time)
  - Skills Training Laboratories
    - Aeronautical Engineering
    - Aircraft Maintenance Technology
    - Solidworks and Robotics in High School
  - CAAP Accredited testing center for Aircraft Maintenance
  - MOA with MSC for training program on FEA
  - Digital design learning laboratory 200 licensed solidworks 50 MSC software license
  
- Space Initiatives:
  - 2019
    - Hosted DOST Balik-Scientist in the field of Aerospace Engineering
    - Opened Finite Element Analysis Training and MSC Software Lab via partnership from MSC Software
    - Center of Excellence for FEA
    - First Batch of Aero Engg student for FEA basic training course
    - Updated all engineering Curriculum and Syllabus to include FEA on design courses.
  - 2020
    - CHED Application for BS in Aerospace Engineering
    - FEATI became a member of UNISEC Philippines.
    - Development of Advanced FEA training courses (Aerospace Oriented)
    - Submit to DOST the establishment of Plasma Thruster Design Consortium
    - Reapplication as host to DOST Balik-Scientist Program
  - 2021
    - Initial offering of BS Aerospace Engineering Program
    - Partnership with other Academic Institutions locally and abroad (exchange student, faculty and research collaboration)
    - Establishment of local FEA Center for analysis and validation of designs
    - Collaborate in the development of guidelines for aerospace simulations
  - 2022
    - Localization and outsourcing of design, analysis and validation of aerospace related products
    - Expansion of FEA Center services to include other types of simulations and testing
    - Expand collaboration with other institutions with regards to training and research projects
    - Create a pool of personnel capable in basic and advanced simulation

- Challenges
  - Lack of skilled graduates capable of design and simulations of aerospace products.
    - Focus on maintenance and atmospheric vehicles Something so syllabus needs to be updated to include modern tech software
  - No specific guidelines on design certifications of Aerospace Products.
  - Financial supports or grants
- Commitment to UNISEC Philippines
  - FEATI University runs a Finite Element Analysis facility available for projects that may need FEA analysis and validation, including certificate technical training
  - Participate in the standardization of testing for advanced composite materials and defining failure criteria
- Support needed
  - Introduction to potential partners in UNISEC to open MSC Software to a wider use
  - Local and international exchange programs for faculty and students
  - Linking up with graduate students of other institutions with regards to thesis or research projects related to FEA
  - Loan/Lease program/package for the use of facility and equipment
  - Promotion of FEATI FEA Facility training programs to the academe and industry
- Expectations from UNISEC Philippines
  - FEATI's recognition as the lead institution and Center of Excellence in the application and utilization of FEA and related MSC software
  - FEATI can tap the UNISEC-Philippines for possible international linkages and collaborations for the Institution Capacity Building purposes
  - FEATI's participation with UNISEC-Philippines' initiatives in space and science
- Proposed Activities/ Other Matters
  - How can UNISEC-Phils extend assistance for international collaboration and linkages?
  - How will the Intellectual Property (IP) requirements be addressed for existing and future projects?
  - How will we conduct research/projects with UNISEC-Phils' other members in terms of composition, funding, monitoring, supervision and documentations?

[Presentation](#): FEATI University

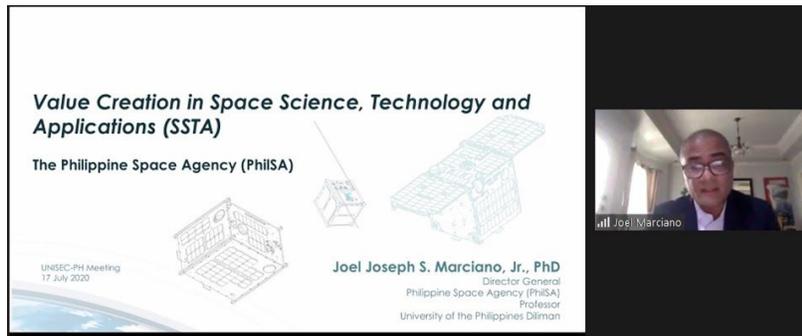
## Part C

### Space Science and Technology Education

#### Value Creation in Space Science, Technology and Applications (SSTA)

Dr. Joel Joseph Marciano, Jr.

Director-General, Philippine Space Agency



- Value Creations in SSTA
  - Philippine RA 11363 signed on 08 Aug 2019 (almost 1 year already)
  - Key development areas in PH Space Policy Framework and the corresponding Powers and Functions of the PhilSA
  - Composition of PSC
  - Proposed Organization Structure and Staffing Pattern (OSSP) still for review of DBM
    - 3 Deputy DG
    - 6 Technical Bureaus
    - 1 Administrative Service
  - Relevant Provisions in the IRR
    - Transition period (turnover) shall not exceed 5 years from effectivity of the IRR
    - Collaborating institution performs specific functions of PhilSa during the transition period
    - Affiliate Institution performs R&D or service in SSTA even beyond the transition period of 5 years
  - SSTA Projects
    - SAR AIS (DOST GIA: 2018-2023)
    - S4S (DOST GIA: 2020)
    - PEDRO (ASTI GAA: 2020)
    - DATOS (ASTI GAA: 2020)
  - Needs to build an ecosystem: PhilSA is not a one stop shop for everything in relation to Space. Current HR can move to PhilSA, stay in Universities, or apply to other institutions

## Part D Closing Message

**Dr. Gay Jane Perez**  
**Program Leader**  
**STAMINA4Space Program**



- Acknowledgement of Participants
- Member universities have their own strengths and needs while being part of the same niche, having the same goals and approaches
- Importance of the academe, its resources and knowledge.
- There is a bright future for the space field in the country

## Participants

Institution	Name
DOST	Dr. Rowena Cristina Guevara Undersecretary for Research and Development
PhilSA	Dr. Joel Joseph Marciano, Jr. Director-General, Philippine Space Agency
S4S	Dr. Gay Jane Perez STAMINA4Space Program Leader
Holy Angel University (HAU)	Engr. Arnaldo Gutierrez Engr. Leo Almazan
University of San Carlos (USC)	Engr. Alberto Bañacia Engr. Joseph Karl Salva Walvies Alcos (student) Mariel Mallorca (student)
Mindanao State University-Iligan Institute of Technology (MSU-IIT)	Engr. Jennibeth Gatal Prof. Allenn Lowaton Prof. Jefferson Hora Dr. Sherwin Guirnaldo
University of Perpetual Help – Las Piñas	Dean Lorena Ilagan
Cebu Technological University	Dr. Jonathan Maglasang
FEATI University	Dr. Cesar Domingo Dr. Jayjack Manzano Engr. Vicente Dy-Reyes Engr. John Gabriel Decena
University of the Philippines-Diliman / Space Science and Technology Proliferation through University Partnerships (STeP-UP) Project	Engr. Paul Jason Co, MSc Mary Ann Constante F. Mara Mendoza Paula Jean Cansino Jeric Briosio Ericka Picar Angelo Velasco

## Provisional Program

<b>Time</b>	<b>Speaker</b>	<b>Activity / Topic</b>
08:30 am - 08:35 am	<b>Engr. Paul Jason Co</b> <i>Secretary</i> <i>UNISEC Philippines</i>	Call to order, introductions, and welcome message
08:35 am - 08:45 am	<b>Dr. Rowena Cristina L. Guevara</b> <i>Undersecretary for Research and</i> <i>Development</i> <i>Department of Science and Technology</i>	Opening Message
08:45 am - 08:55 am	<b>Ms. Rei Kawashima</b> <i>Secretary-General</i> <i>UNISEC Global</i>	Message of Support <i>Video message</i>
<b>Space Science and Technology Initiatives and Updates from UNISEC Philippines</b>		
08:55 am - 09:10 am	Engr. Paul Jason Co	University of the Philippines Diliman
09:10 am - 09:25 am	Engr. Arnaldo Gutierrez <i>on behalf of Engr. Adel Parungao</i>	Holy Angel University
09:25 am - 09:40 am	Engr. Alberto Bañacia	University of San Carlos
09:40 am - 09:55 am	Engr. Jennibeth Gatal	Mindanao State University-Iligan Institute of Technology
09:55 am - 10:05 am	Dean Lorena Ilagan	University of Perpetual Help – Las Piñas
10:05 am - 10:20 am	Dr. Jonathan Maglasang	Cebu Technological University
10:20 am - 10:35 am	Dr. Cesar F. Domingo  Engr. John Gabriel Decena, Co-Presenter Engr. Vicente DyReyes, Co-Presenter Dr. Jay Jack Manzano, Co-Presenter	FEATI University
<b>Space Science and Technology Education</b>		
10:35 am - 10:55 am	<b>Dr. Joel Joseph Marciano, Jr.</b> <i>Director-General</i> <i>Philippine Space Agency</i>	Updates on the Philippine Space Agency (PhilSA)
<b>The Academe in Building the Local Space Environment</b>		
10:55 am - 11:55 am	Open forum and discussion	
11:55 am - 12:00 nn	<b>Dr. Gay Jane Perez</b> <i>Program Leader</i> <i>STAMINA4Space Program</i>	Closing Message