

The 7th UNISEC-Global Meeting



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Day 1

Keynote

Groupe Discussion

Sponsor / Exhibitor Presentation

Panel Discussion





**Group 1: Space Laser
Communications**

Alberto Carrasco-Casado, National
Institute of Information and
Communications Technology
(NICT)



Group 2: CubeSat Interface
Marloun Sejera, Kyushu Institute of
Technology



Group 4: Business Development of HEPTA-Sat
Masahiko Yamazaki, Nihon University and Michael Siddall, the University of
South Australia



GROUP DISCUSSION



**Group 3: Deep Space Exploration
Mission with CubeSats**
Masahiro Fujiwara, The University
of Tokyo



**Group 5: Global University Space
Debris Observation Network
(GUSDON)**
Fabio Santoni, Sapienza University
of Rome



Group 6: International collaboration proposal
Nicolas Martinod, EPFL Space Center

D1-03



GROUP DISCUSSION





BREAKOUT SESSION



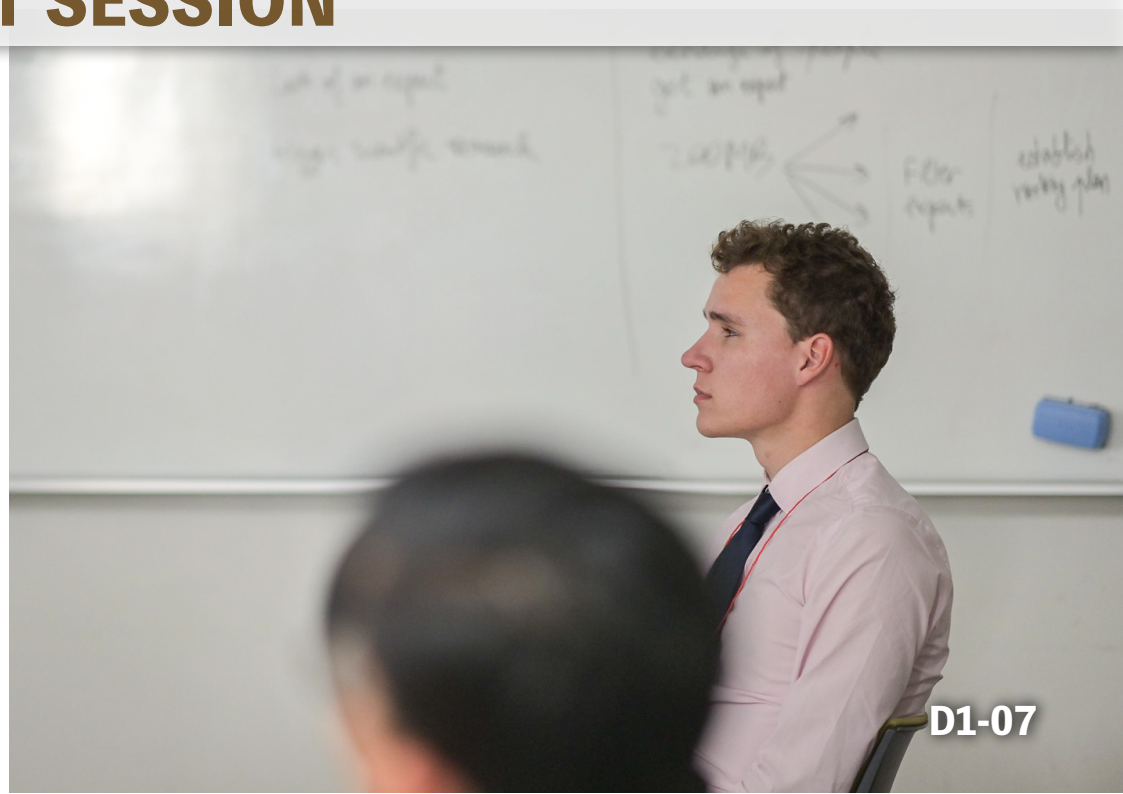


BREAKOUT SESSION



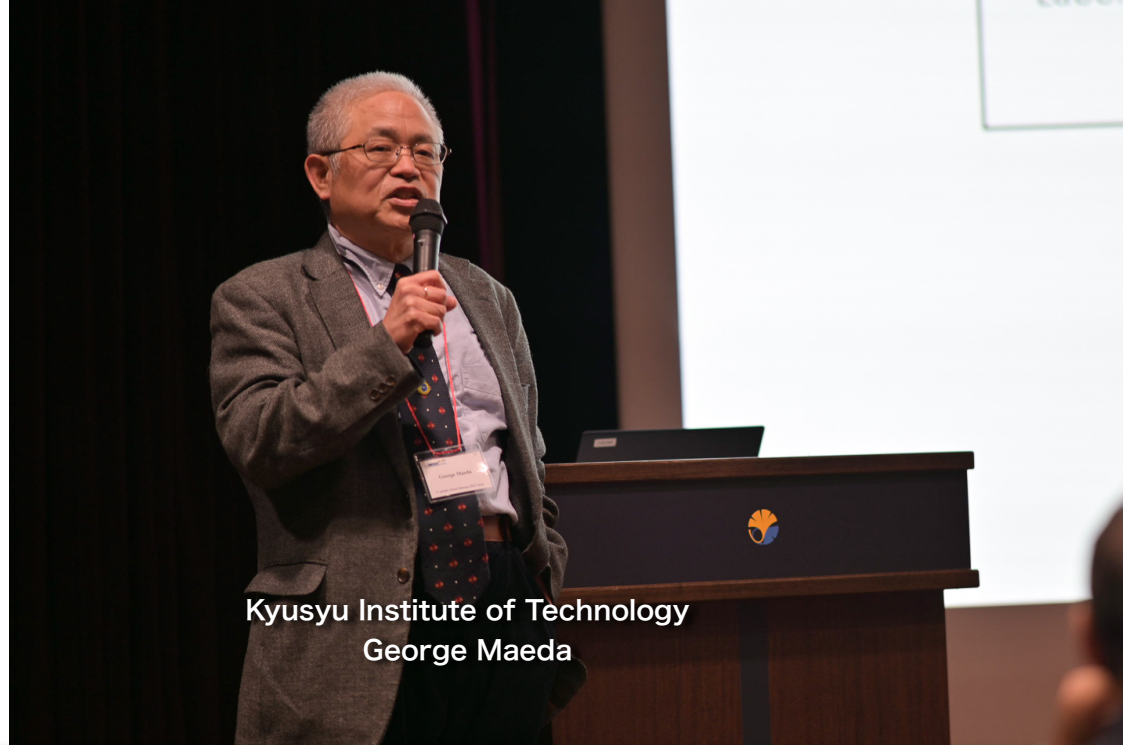


BREAKOUT SESSION





Space BD
Makoto Kanazawa



Kyusyu Institute of Technology
George Maeda

SPONSOR / EXHIBITOR PRESENTATION



ICECUBES
Hilde Stenuit



UNISEC
Masahiko Yamazaki



AAC Clyde Space
Mattias Orth



Mitsui Bussan Aerospace Co., Ltd.
Gota Mishima

SPONSOR / EXHIBITOR PRESENTATION



ISIS-Innovative Solutions in Space
Haley Doyle



PANEL DISCUSSION

HOW CAN SPACE TECHNOLOGY SOLVE DROUGHTS AND FLOODS?

MODERATOR: SHINICHI NAKASUKA, THE UNIVERSITY OF TOKYO



Shiori Kimura,
Synspective



Alice Pellegrino, Canon
Electronics Inc.



Yohei Sawada, The
University of Tokyo

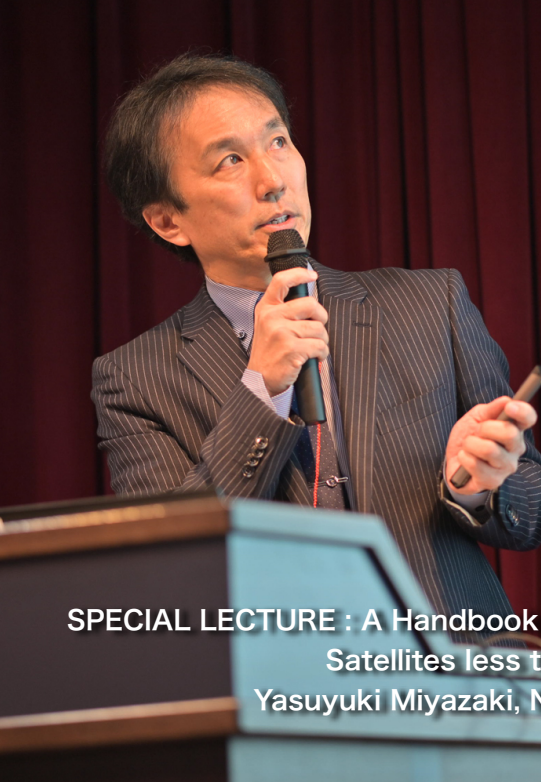


Kei Yoshimura, The University
of Tokyo



RECEPTION





SPECIAL LECTURE : A Handbook of Post-Mission Disposal for Satellites less than 100kg
Yasuyuki Miyazaki, Nihon University

Re-entry Survival

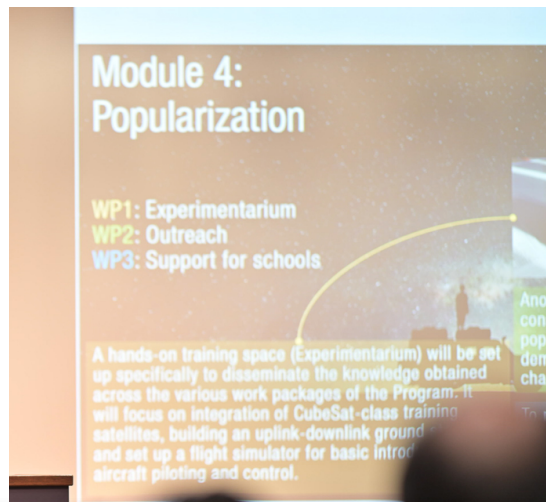
- Four primary characteristics that
 - ✓ Material: typically aluminum and circuit board
 - ✓ Mass: under 100kg (for microsats and sma
 - ✓ Construction: no hardened or especially de
 - ✓ Re-entry Trajectory: due to contraction fro



SPECIAL LECTURE : Worldwide Survey of Capacity Building Activities
Mengu Chō, Kyushu Institute of Technology



Bulgaria : Plamen I. Dankov, Sofia University



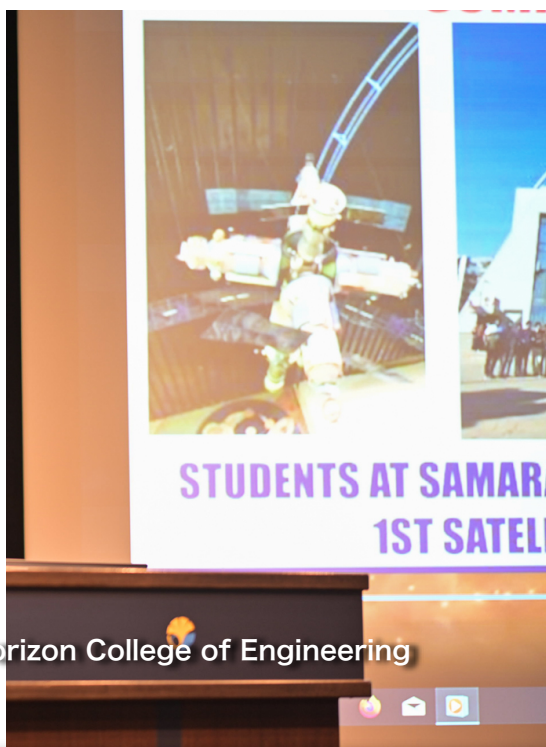
Egypt : Mohamed Magdy, Cairo University on behalf of Ayman Kassem, Cairo University



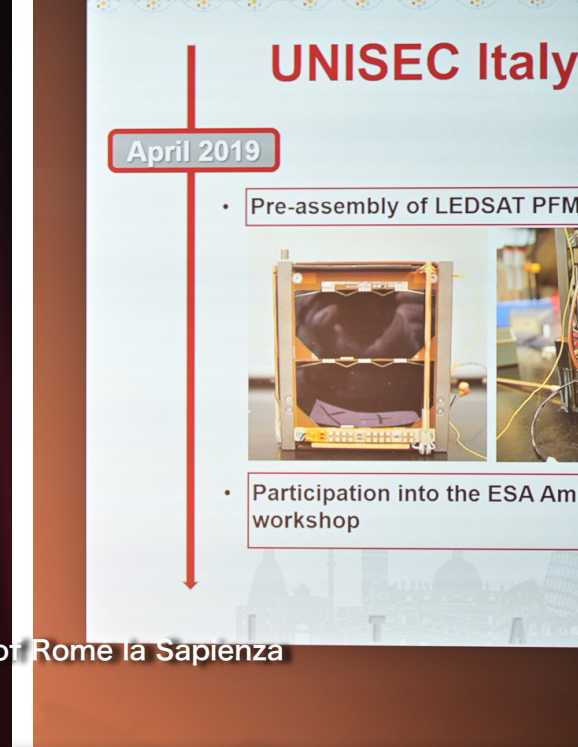
REGIONAL REPORT FROM POINT OF CONTACT



India : K.Gopalakrishnan, New Horizon College of Engineering



Italy : Fabio Santoni, University of Rome la Sapienza



REGIONAL REPORT FROM POINT OF CONTACT



Japan : Mengu Cho, Kyushu Institute of Technology



Germany : Alexander Kramer, Wuerzburg University





SAR : Herman Steyn, University of Stellenbosch



Electronic Systems Laboratory

Members

Southern Africa and UNISEC

Stellenbosch Univ

CPUT

UCT

NUST

Angola NOSA

CPUT

ZACube-2

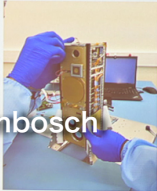
- Launched 27 December 2017
- Successfully commissioned and operating ground station with back up support Spaceteq and SANSA
- The 3U CubeSat is a technology demonstration payload:
- Software define radio AIS receiver
- Novel K-line medium resolution detection

Stellenbosch University supplied the

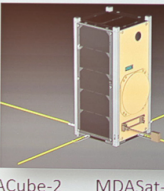
MDASat-1 (maritime domain aware)

- Constellation of 3x 2U CubeSats that
- Provide AIS services for vessel tracking EEZ

Both missions are funded by the South African Government



ZACube-2



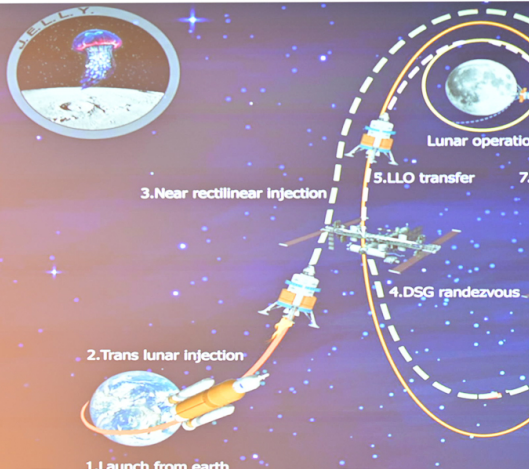
MDASat-1



Turkey : A. Rüstem Aslan, Istanbul Technical University (ITU)

AIAA SPACE DESIGN CONTEST

Reusable Lunar Surface Access



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REGIONAL REPORT FROM POINT OF CONTACT



Malaysia : Norilmi Amilia Ismail, Universiti Sains Malaysia (USM)



Philippines : Paul Jason Co., University of the Philippines-Diliman(UPD)

History of Local Chapter Activities

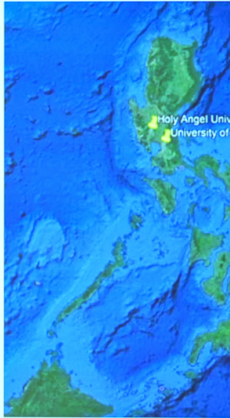
Started in June 2019

Initial members

- University of the Philippines Diliman
- Mindanao State University – Iligan
- Institute of Technology
- Holy Angel University

Membership processing

- Mapua University
- Adamson University
- De La Salle University
- University of Perpetual Help
- Far Eastern Air Transport (FEAT)
- University
- Debu Technological University



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Taiwan : Jyh-Ching Juang, National Cheng Kung University

Department of Space Science & Engineering

- Formed from merger of Graduate Institute of Space Science & Engineering with Dept. of Atmospheric Science and Space Undergraduate Division
- Allocated student body:
 - Undergrad: 130
 - Masters: 39
 - PhD: 28
- Emphasis:
 - Space weather & environment
 - Space Systems Engineering
 - Satellite & Sounding Rocket



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PANEL DISCUSSION ON “GENDER EQUALITY IN THE SPACE FIELD”

MODERATOR: ALICE PELLEGRINO, CANON ELECTRONICS INC.





Garvey McIntosh, NASA



Motoko Mizuno, JAXA



Naoko Yamazaki, former JAXA's
Astronaut



Tidiane Ouattara, African Union
Commission



Norilmi Amilia Ismail, University
Saints Malaysia (USM)



Yuko Kawabata, Mitsubishi Heavy
Industries (MHI)





Greetings from UNISEC-Japan:
Yasuyuki Miyazaki, Nihon
University and Chairperson of
UNISEC-Japan



Greetings from Board member of
ISU
Norimitsu Kamimori, JAXA



Greetings from JASI
Kenta Maruyama, JAXA



Lecture: "Introduction to ISU"
Chris Welch, ISU

ISU - UNISEC COLLABORATION NIGHT



Alumni talks
Toshinori Kuwahara, Tohoku
University



Alumni talks
Alison Reneau (USA)



Alumni talks
Hazuki Mori, JAXA



Alumni talks
Michael Siddall (Australia)



Networking with wine (provided by IHI)



D2-09



Day 3

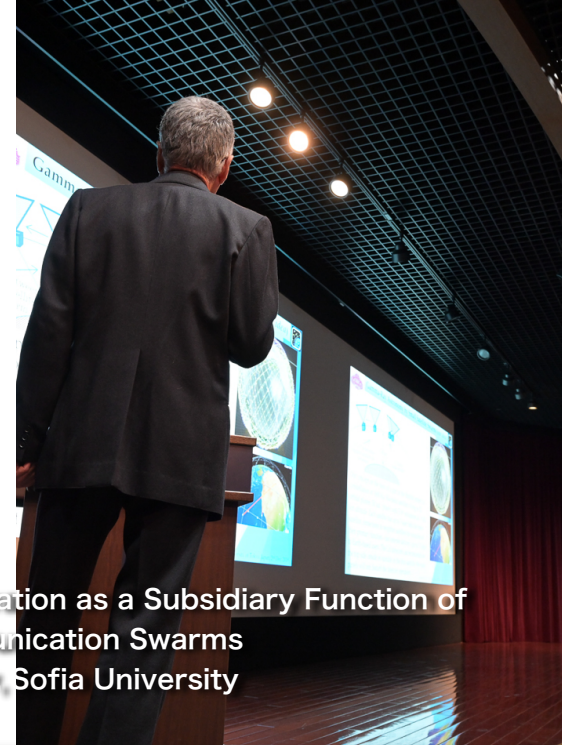
The 6th Mission Idea Contest for Achieving
Sustainable Development Goals with Human
Spaceflight



On-orbit Measurement of Radiation Effects on Commercial-Off-The-Shelf (COTS) Hardware for Small Satellites
Senior Shimhnda, Kyushu Institute of Technology



Gamma-Ray Astronomy Observation as a Subsidiary Function of CubeSat Communication Swarms
Plamen Dankov, Sofia University



MIC6 CATEGORY : ISEEP



Spectrum Monitoring from Space with i-SEEP (SMoSiS)
Genedyn Gems S. Mendoza,
Advanced Science and Technology Institute and University of the Philippines-Diliman



Mountain VIEWS
(Mountain Volcano Identification and Early Warning System)
Muhammad Purwa Manggala, Muhammad Hafizh, and Syaeful Himan Supratman, Telkom University



Quantification of metal extraction from a substrate by biomining processes in bacteria of the genus *Bacillus* under microgravity conditions
Graciela Lopez Campos / Catalina Porrás Silesky

MIC6 CATEGORY : ICECUBES



MUSA: An ISS Experiment for the research of a dual culture for Panama Disease
Valeria María Dittel-Tórtos and Fiorella Arias-Bonilla
Costa Rica Institute of Technology (TEC)



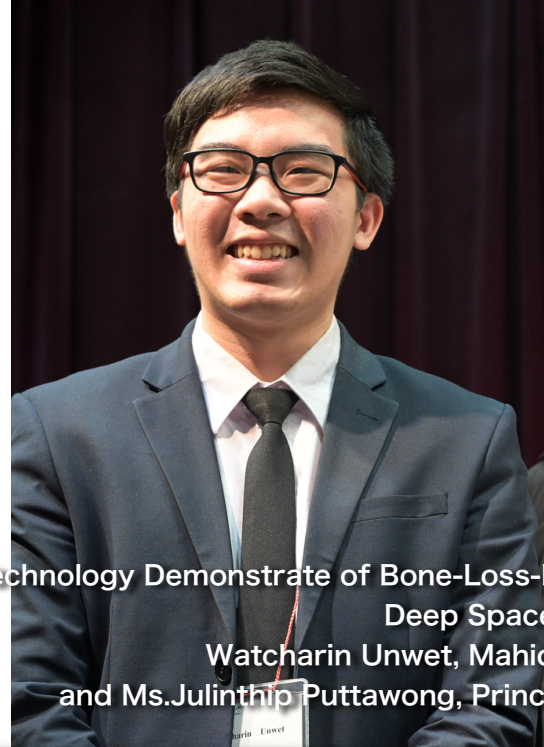
MARGE - Melanoma Apoptosis Reduced Gravity Experiment
Giorgio Bagolan, Gianluca Cocirla,
Angelo Fabbri, Pierluigi Federici,
Emanuele Neri, Maria Giulia Pancalli,
Alessio Piergiacomo, Maurizio Renda,
and Eleonora Vestito, Sapienza University of Rome

MIC6 CATEGORY : ICECUBES





HVBM: Heart Valve prosthesis Behavior in Microgravity environment
Anisia Lauditi, Politecnico di Milano
and Chiara Manzini, ISAE-Supaero



Technology Demonstrate of Bone-Loss-Reducing Bacteria Culture for
Deep Space
Watcharin Unwet, Mahidol University
and Ms.Julinthip Puttawong, Prince of Songkla University



MIC6 CATEGORY : ICECUBES



Bacteriological Mutation by Cosmic Radiation
Santos Gustavo Javier, UTN-FRC

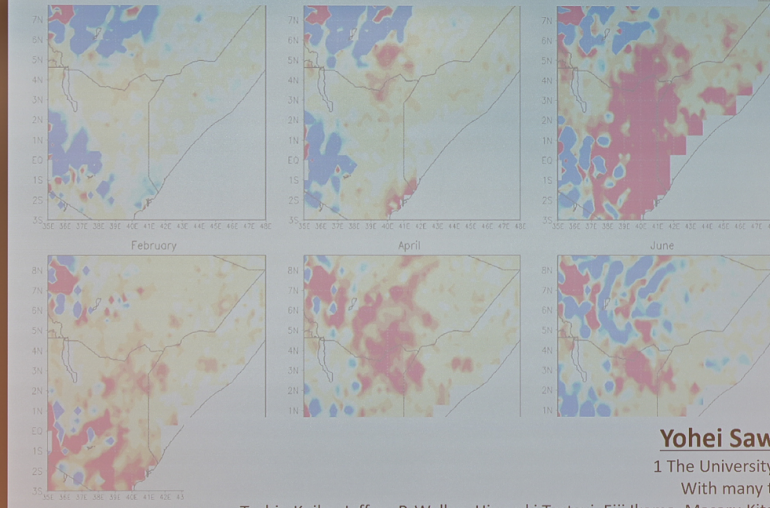


AFRICA: THE NEW ELDORADO FOR SPACE BUSINESS

Special Lecture : "Africa: The New Eldorado For Space Business"
Tidiane Ouattara, African Union Commission

SPECIAL LECTURE

How does space technology save our lives?
Case study of drought monitoring and prediction



Special Lecture : "How does space technology save our lives?: Case study on drought monitoring and prediction"
Yohei Sawada, the University of Tokyo

Yohei Sawada
1 The University of Tokyo
With many thanks to
Toshio Koike, Jeffrey P. Walker, Hiroyuki Tsutsui, Eiji Ikoma, Masaru Kitsu



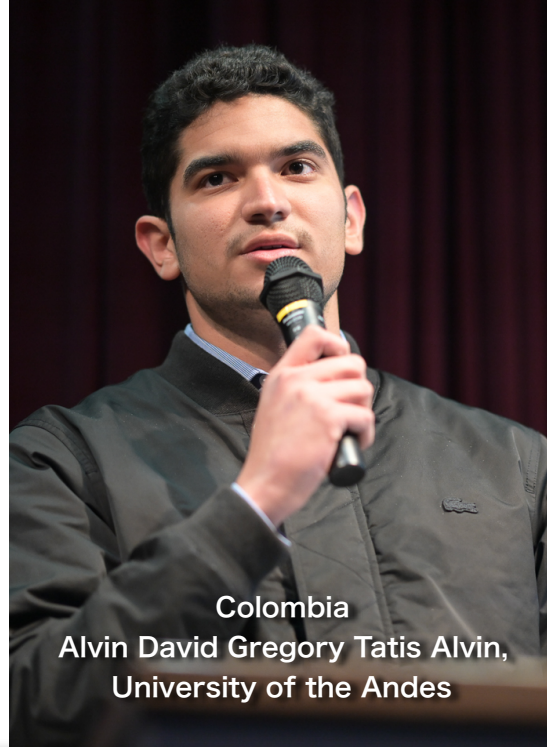
GOMSPACE AT A GLANCE

History and Status - Founded in 2007. Commercial from the start - Based on research at Aalborg University - HQ in Aalborg and operations in Sweden, USA, and Luxembourg - Approximately 160 employees - Listed on Nasdaq First North Premier in Stockholm since 16 June 2016 ("GOMX").	Market Traction - Customers in 55 countries - Participated in more than 50 satellite missions - ESA investing €4Mio in product improvements for deep space
Achievements - Pioneered aircraft tracking from space - Delivered the first nanosatellite to the European Space Agency - Developed the strongest product portfolio in the industry	Competitive Advantage - Proven nanosat capability, flawless "flight heritage" - World class radio technology capability

Special Lecture : "Small satellite trends in Europe"
Dennis Elgaard, GomSpace



Colombia
Giovanna Estefania
Ramirez, AESS



Colombia
Alvin David Gregory Tatis Alvin,
University of the Andes



New Zealand
Jim Hefkey, the University of
Auckland



Spain
Fernando Aguado Agelet, Vigo
University

REGIONAL REPORT FROM POC



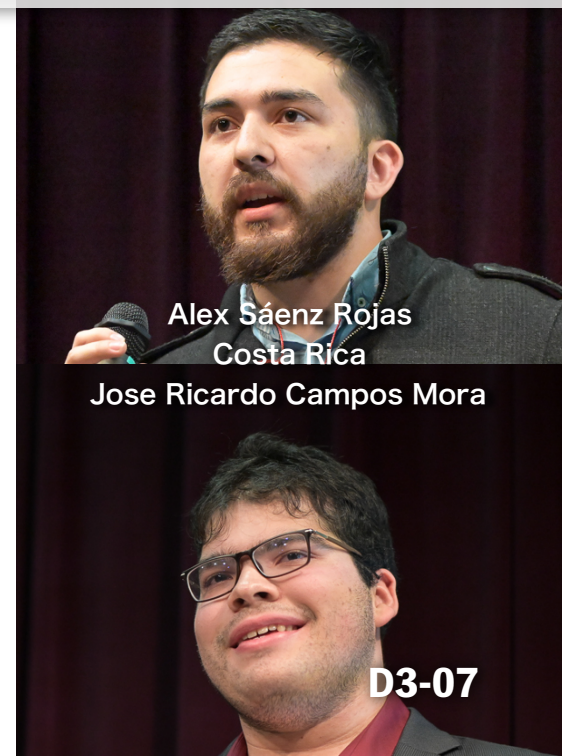
Sudan
Hind Mahmoud Elhaj
Mohammed, Kyushu Institute of
Technology



Switzerland
Alfonso Villegas, EPFL Space
Center



Thailand
Phongsatorn Saisutjarit, King
Mongkut's University of
Technology North Bangkok



Alex Sáenz Rojas
Costa Rica
Jose Ricardo Campos Mora

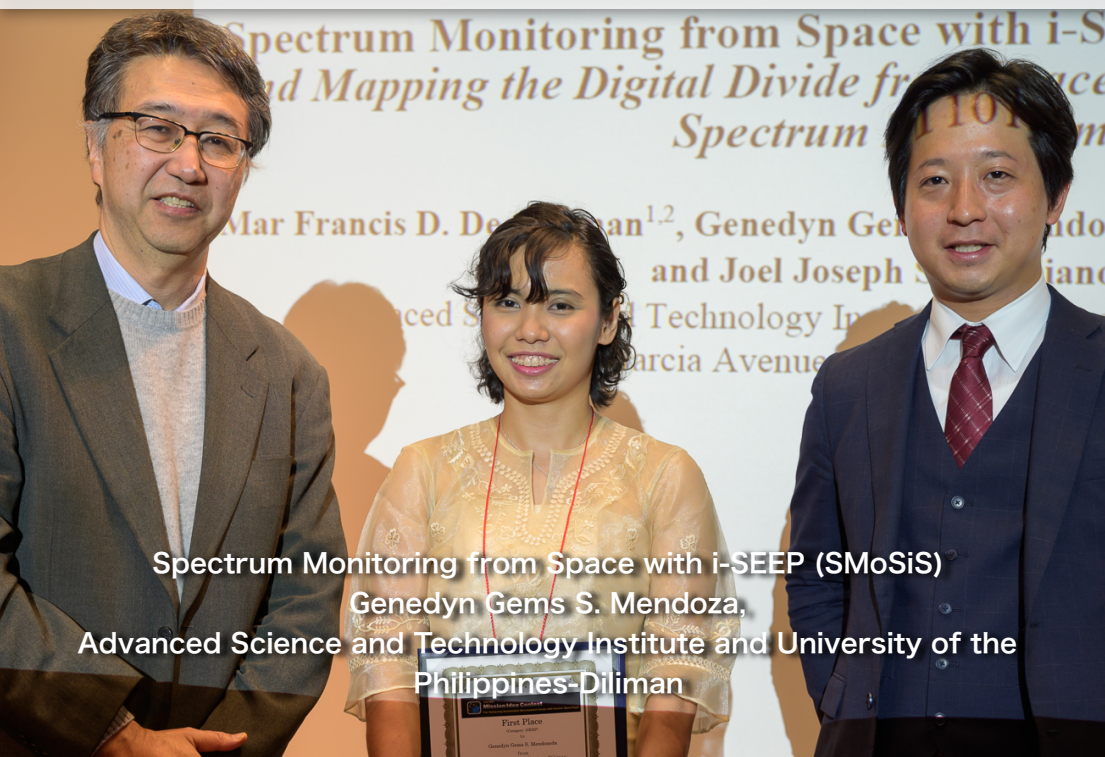


Mountain VIEWS
 (Mountain Volcano Identification and Early Warning System)
 Muhammad Purwa Manggala, Muhammad Hafizh, and
 Syaeful Himan Supratman, Telkom University

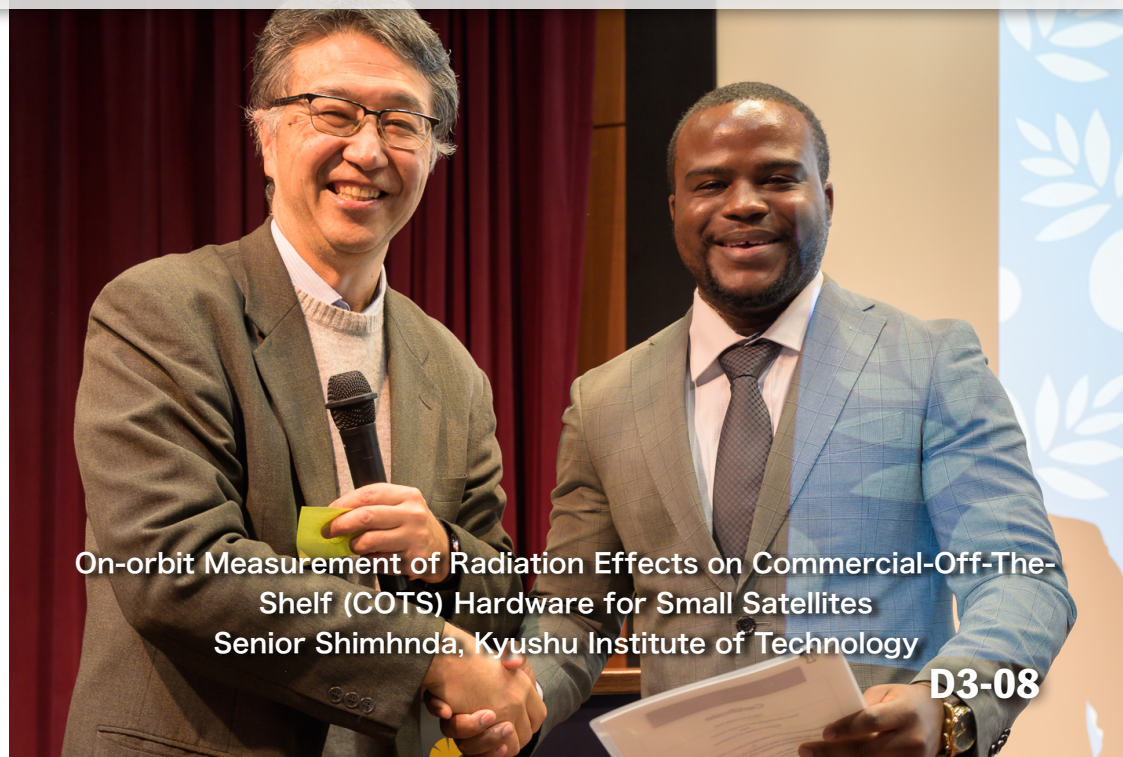


MARGE - Melanoma Apoptosis Reduced Gravity Experiment
 Giorgio Bagolan, Gianluca Cocirla,
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MIC6 AWARD CEREMONY



Spectrum Monitoring from Space with i-SEEP (SMoSIS)
 Genedyn Gems S. Mendoza,
 Advanced Science and Technology Institute and University of the
 Philippines-Diliman



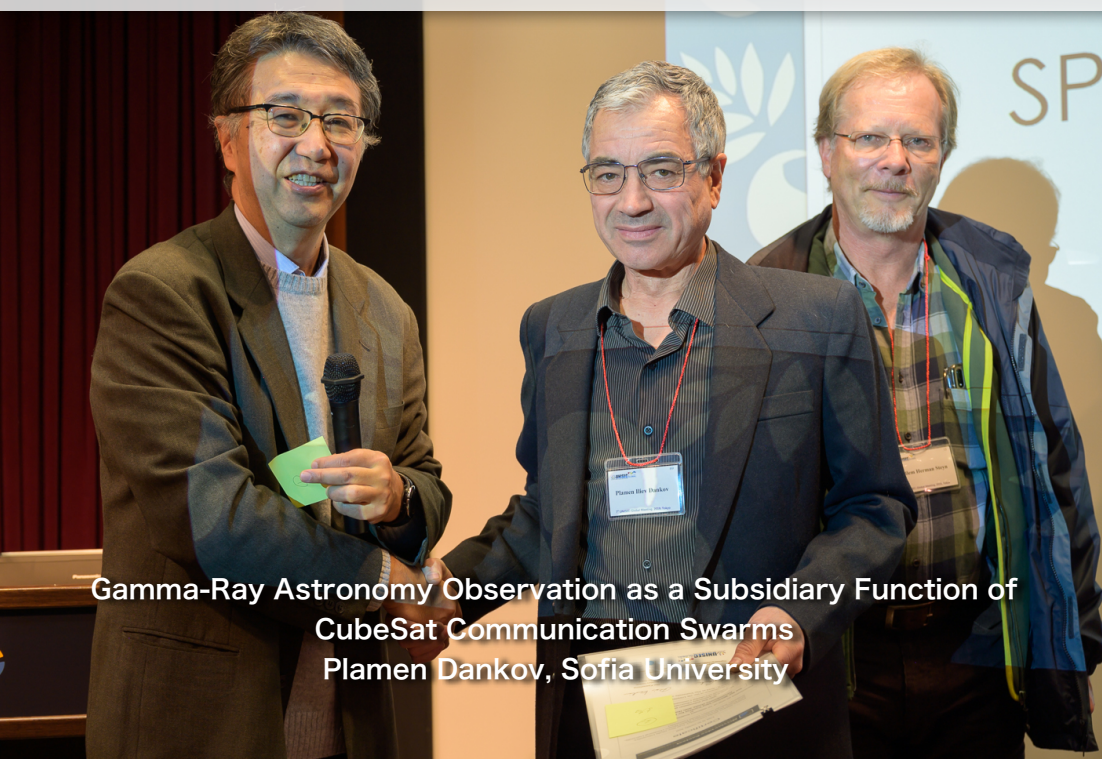
On-orbit Measurement of Radiation Effects on Commercial-Off-The-Shelf (COTS) Hardware for Small Satellites
 Senior Shimhnda, Kyushu Institute of Technology



MUSA: An ISS Experiment for the research of a dual culture for Panama Disease
Valeria Maria Dittel-Tórtos and Fiorella Arias-Bonilla
Costa Rica Institute of Technology (TEC)



MIC6 AWARD CEREMONY





MIC6 AWARD CEREMONY





MIC6 AWARD CEREMONY





GALA DINNER





Day 4

Group Discussion Final Presentation

Students Representative Presentation

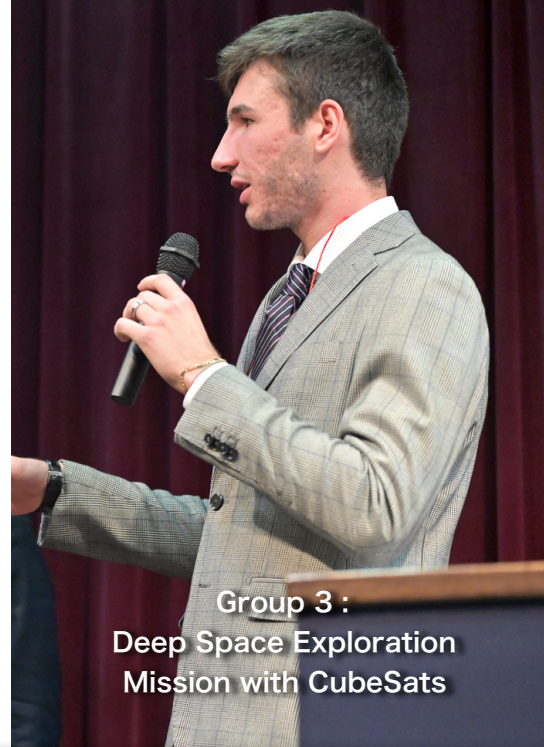
Closing Ceremony



Group 1 :
Space Laser
Communications



Group 2 :
Cubesat Interface



Group 3 :
Deep Space Exploration
Mission with CubeSats



Group 4 :
Business Development of
HEPTA_Sat

GROUP DISCUSSION FINAL PRESENTATION



Group 5 :
Global University Space Debris Observation Network



Group 6 :
International collaboration proposal

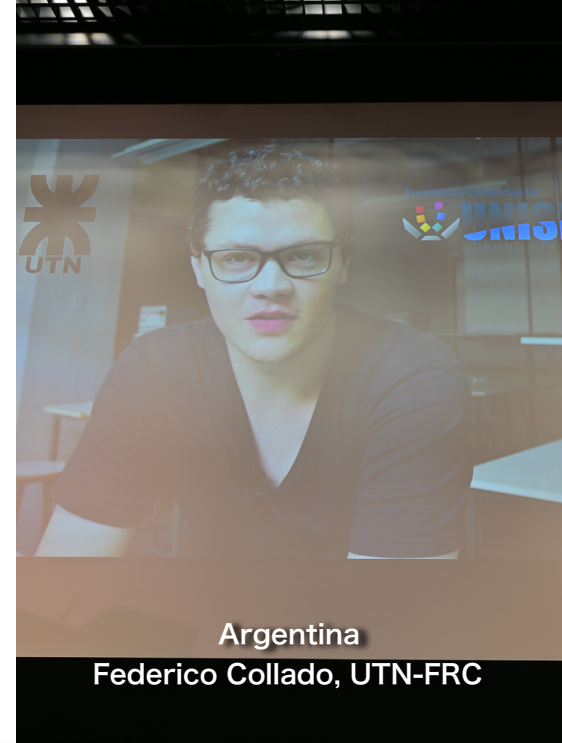


Group 8 :

Commercialization of ISS - How to keep the ISS sustainable by promoting private sectors involvement



Group 9 :
Global Space job Fair



Argentina
Federico Collado, UTN-FRC

STUDENT REPRESENTATIVE PRESENTATION



Colombia
Alvin David Gregory Tatis,
University of the Andes



Egypt
Mohamed Elsherbiny Emam and Mohamed Magdy Ahmed,
Cairo University



Germany
Alexander Kramer,
Wuerzburg University

D4-03



India

Nikhil Riyaz, New Horizon College
of Engineering



Italy

Paolo Marzioli, Sapienza University
of Rome



Japan

Makiko Kishimoto,
Kyusyu Institute of Technology



Japan

Hiroto Seki, The University of
Tokyo

STUDENT REPRESENTATIVE PRESENTATION



Malaysia

Farah Hanum Mohd Fadzil,
University of Science Malaysia



UNISEC-Samara

A. Rüstem Aslan, Istanbul Technical
University (ITU) on behalf of Igor
Belokonov



Switzerland

Tristan Trebaol, EPFL Space Center



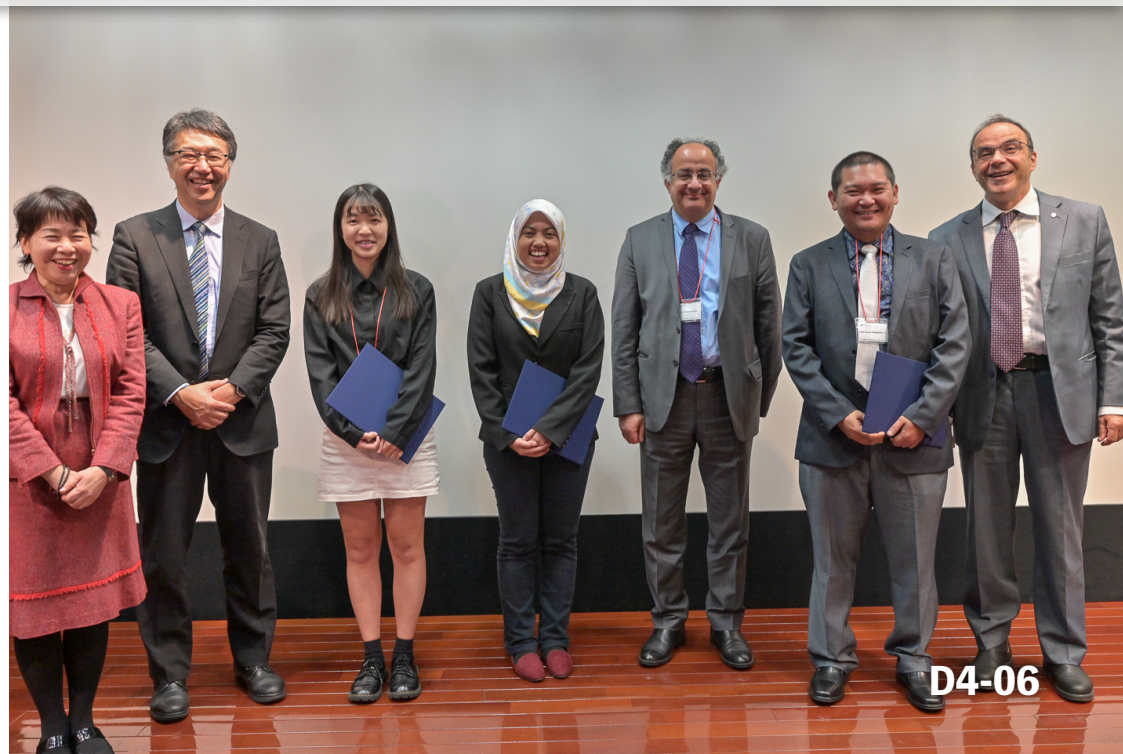
Taiwan

Yun-Rong Yang,
National Cheng Kung University

D4-05



ACKNOWLEDGEMENT OF NEW LOCAL CHAPTERS





Closing Remarks

- Space project is never realized without international collaborations
 - Mutual relationships **with trust** is important !
 - **Strengthening our community** is essential
 - **Know-who network**
- Please use the **UNISEC contests** for getting funds from your government and industry
- Try to **realize at least one project** discussed UNISEC-GLOBAL community

CLOSING CEREMONY

