



According to Bryce Space & Technology Co., among academic operators, Kyutech is No. 1 in number of small satellites launched

Members of BIRDS -1, -2, -3, and -4, on 29 Nov 2018 in front of the lab building



Archive website: <http://birds1.birds-project.com/newsletter.html>

All back issues are archived at this website.

Acknowledgment of support: This newsletter is supported, in part, by *JSPS Core-to-Core Program, B. Asia-Africa Science Platforms.*

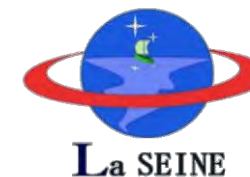
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BIRDS Project Newsletter

Issue No. 47
(16 Dec. 2019)

Edited by:
G. Maeda

Laboratory of Spacecraft Environment
Interaction Engineering (LaSEINE),
Kyushu Institute of Technology (Kyutech)
Kitakyushu, Japan



All back issues of this newsletter can be easily downloaded.

Go to here: <http://birds1.birds-project.com/newsletter.html> and scroll down to the desired issue.

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End

From Sudan

The Guest Box



The River Nile is the longest river in the world with a length of 6,650 km. It flows through 11 African countries and formed mainly of two rivers, which are the White Nile that originates from the Lake of Victoria in Uganda and passes through the Republic of South Sudan, and the Blue Nile which originates from the Lake of Tana in Ethiopia. At the city of Khartoum, the capital of Sudan, the two rivers merge together making a junction, and the Nile then flows to the north through the Sudanese desert to Egypt. North of Cairo, the River Nile splits into two branches that flow into the Mediterranean Sea, forming a large Delta.

-- by Sondos W.A. Mohamed
ISRA of Sudan



JSPS Reminder

When you publish a paper on a topic related to BIRDS, please include this acknowledgement in the paper:

**This work was supported by JSPS Core-to-Core Program,
B. Asia-Africa Science Platforms.**

01. Report from Paraguay



Capacity BUilding in REsearch & Innovation

For Space

The “CABURE+I 4S” Project

Newsletter

November 2019 Summary

Contributors:

Students and members of
The CABURE+I 4S Project Team

Edited by:

Cristhian Coronel



FIUNA



FPUNA



UNG



Agencia Espacial del Paraguay – Paraguay Space Agency
(AEP)

The “CABURE+I 4S” Project Newsletter

News from Paraguay

CABURE+I 4S Team members participation in the 2nd IAA Latin American Symposium on Small Satellites

The 2nd International Academy of Astronautics (IAA) Latin American Symposium on Small Satellites: Advanced Technologies and Distributed Systems was hosted by the Colomb Institute with support of the Universidad de San Martin (UNSAM) and the Comision Nacional de Actividades Espaciales (CONAE) from Argentina.

The event was carried out on the week of Nov. 11 to Nov. 16, 2019. In the Centro Cultural de la Ciencia (C3) in Buenos Aires and in the Investigaciones Aplicadas (INVAP) in Bariloche. A group of members of the CABURE+I 4S team had the opportunity to present their works and give an oral presentation in this important Latin American event.

A group of members of the CABURE+I 4S team had the opportunity to present their works and give an oral presentation in this important Latin American event.



(from right to left) Lucas Moreira, Dr. Diego Stalder, Esteban Fretes, Aldo Galeano, Esteban Acosta and Jose Moreira posing in front of the C3, the site where the Oral Presentations were made.

The selected group this time was conformed by 7 students 6 of them presenting their work in the oral presentation, and 1 of them was presenting a poster. The team was accompanied by their advisors.



(from right to left) Prof. Javier Ferrer, Cristhian Coronel, Mayra Mosqueda and Dr. Jorge Kurita on their way to the plane that will take them to Buenos Aires, Argentina.

The “CABURE+I 4S” Project Newsletter

News from Paraguay

CABURE+I 4S Team members participation in the 2nd IAA Latin American Symposium on Small Satellites

The oral presentations were carried out between Nov. 11th to 15th. They were organized in Sessions. Each session was presented by a chair member, who also made their own presentations.

The first group presenting where Mayra Mosqueda and Cristhian Coronel, on Wednesday Nov. 13.



(from right to left) Javier Ferrer, Dr. Diego Stalder, Dr. Jorge Kurita, Cristhian Coronel and Mayra Mosqueda, A couple of minutes before Cristhian and Mayra start their presentation. Cristhian is holding his prototype for his “Screwless CubeSat structure”

The next day, the rest of the group had their chance to present their works. In both days, the presenters did an outstanding job and got the audience impressed. They got a lot of questions.



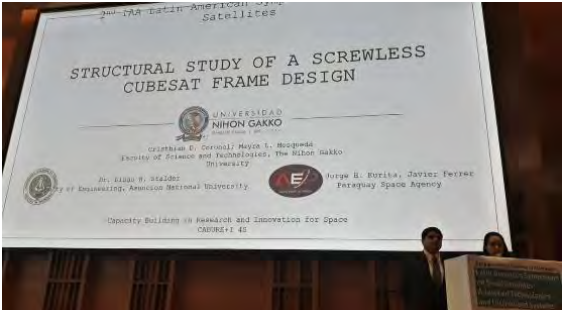
We showed up super early in the morning that day. (In the first row and from left to right) Jose Moreira, Esteban Fretes, Lucas Moreira and Aldo Galeano. They were the ones presenting that day. (next row) Dr. Diego Stalder, Noelia Acosta, Prof. Javier Ferrer, Cristhian Coronel, Mayra Mosqueda, Dr. Jorge Kurita and Esteban Acosta.

The “CABURE+I 4S” Project Newsletter

News from Paraguay

CABURE+I 4S Team members participation in the 2nd IAA Latin American Symposium on Small Satellites

Mayra Mosqueda and Cristhian Coronel, on Wednesday Nov. 13 presenting their work to the audience for the “Session 8- Satellite Technologies: Subsystems I”. The chair member in charge was Ronnie Nader, from Civilian Ecuador Space Agency (CEXA)



Cristhian Coronel (left) and Mayra Mosqueda (right) On the stage.

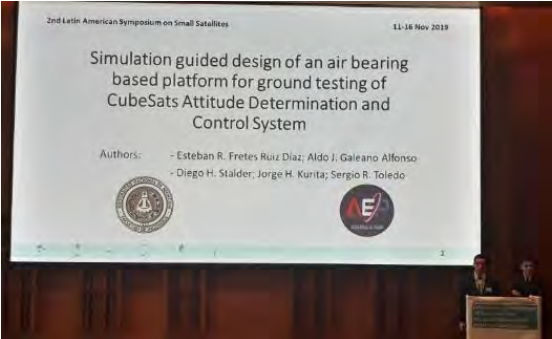
The next group where the Moreira brothers, Lucas and Jose. They gave a great presentation. The Session was the number 11-University projects/Education

Jose Moreira (left) and Lucas Moreira (right) during their presentation on Thursday Nov. 14.



On the same day, the students Esteban Fretes and Aldo Galeano presented their work too.

Mr. Nader (man on the down right corner) was very interested on the prototype that the students brought with them. He asked a lot of questions to them.



Esteban Fretes (left) and Aldo Galeano (right) during their very interesting oral presentation.

The “CABURE+I 4S” Project Newsletter

News from Paraguay

CABURE+I 4S Team members participation in the 2nd IAA Latin American Symposium on Small Satellites

That day, the organizers offered some gifts for the best oral presentations. Lucas Moreira and Jose Moreira won this gift. Congratulations to the Moreira brothers!



(from left to right) Rainer Sandau, Lucas Moreira, Pamela Millar and Jose Moreira

That day, in another room, the Posters session was carried out during the after noon. Esteban Acosta was the CABURE+I 4S team member who presented a poster related to his work.



On the middle, Esteban is sharing details of his work to some professors and students during the posters session.

The “CABURE+I 4S” Project Newsletter

News from Paraguay

CABURE+I 4S Team members participation in the 2nd IAA Latin American Symposium on Small Satellites

That day, the event had a closing ceremony with pictures and a live concert.



The CABURE+I 4S team members didn't miss the opportunity to appear on a group picture with the organizers and chairmen.



The band of the Colomb institute was not complete that day, so the event organizer Dr. Livio Gratton (with the sax in the middle right) and Satellogic Sales director Mr. Luciano Gieso (on the mic in the middle) along with Thomas Terzibaschian (on the violin on the left) got into the stage and made an outstanding presentation. It was very fun.

The “CABURE+I 4S” Project Newsletter

News from Paraguay

CABURE+I 4S Team members participation in the 2nd IAA Latin American Symposium on Small Satellites

The event continued the day after, but in Bariloche. However, it was optional to participate from that part of the event. Some people did not took the trip and decided to stay and share some time and g



The CABURE+I 4S advisors
(from left to right) Dr. Jorge Kurta, Marcos Reina, Makoto Kanasawa, Dr. Diego Stalder and Javier Ferrer.

Also the CABURE+I 4S team got the opportunity to visit the Satellogic laboratories in Buenos Aires. The visit was guided by the sales director Luciano Giesso. Students from Brazil also went with the group.

Here the group sharing a selfie in the lobby of the Satellogic headquarters.



Here the group, hearing the Satellogic stuff talking about their jobs. It was a very interesting visit.

The “CABURE+I 4S” Project Newsletter

News from Paraguay

Kyushu Institute of Technology professor visiting Paraguay

In the event of Buenos Aires, the CABURE+I 4S team meet with Dr. Kim Sangkyun, who also came to Paraguay.



Dr. Kim Sangkyun giving his presentation in Buenos Aires.

The Team invited Dr. Kim to do a quick lunch close to the C3 in Buenos Aires.



The CABURE+I 4S Team sharing a selfie, before lunch, during the event in Buenos Aires.

The “CABURE+I 4S” Project Newsletter

News from Paraguay

Kyushu Institute of Technology professor visiting Paraguay

During his visit to Paraguay Dr. Sangkyun, among his many activities, got a time to visit the CABURE+I 4S Laboratory. The team gathered to talk about their works.



Dr. Kim Sangkyun with Dr. Kurita attended a meeting in the Japan International Cooperation Agency (JICA)



A photo taken during the meeting in the CABURE+I 4S Laboratory Paraguay Space Agency (AEP) President was also present that day.

**End of report
from Paraguay**

02. BIRDS-3 member writes Annual Progress Report for NAST



Annual Progress Report

Prepared by:

Hari Ram Shrestha, M2
Space Engineering International Course (SEIC)
PNST/MEXT Scholarship, LaSEINE, KyuTech, Japan

Approved by:

Prof. Mengu Cho, Academic Adviser

Submitted to

Nepal Academy of Science and Technology, (NAST), Khumaltar, Lalitpur, Nepal 25th
27th Nov 2019

Contents

- Overview of BIRDS Satellite Project
- BIRDS-3 Stakeholders
- BIRDS-3 Missions and system Design
- Operational status
- Nepal Ground stations
- Motivation and Results
- PNST/SEIC Program
- Kyushu Institute of Technology (KyuTech)
- Class and Result
- BIRDS-4
- Annex

BIRDS Introduction

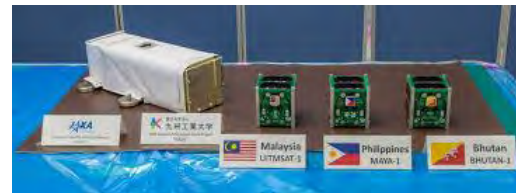
- Acronym for Joint Global Multi-Nation *BIRDS* Satellite Project ,Targets non-space fairing countries
- The objective of the BIRDS project is to reach the engineering students from overseas and Japan to build the satellites by experiencing the entire development process before sending satellites into space.
- stages includes mission planning, hardware design, space craft testing, launching and in-orbit operation in 2 years.

Photo: JAXA,LaSEINE, Kyutech



<http://birds1.birds-project.com/>

BIRDS-1



<http://birds2.birds-project.com/>

BIRDS-2



<http://birds3.birds-project.com/>

BIRDS-3

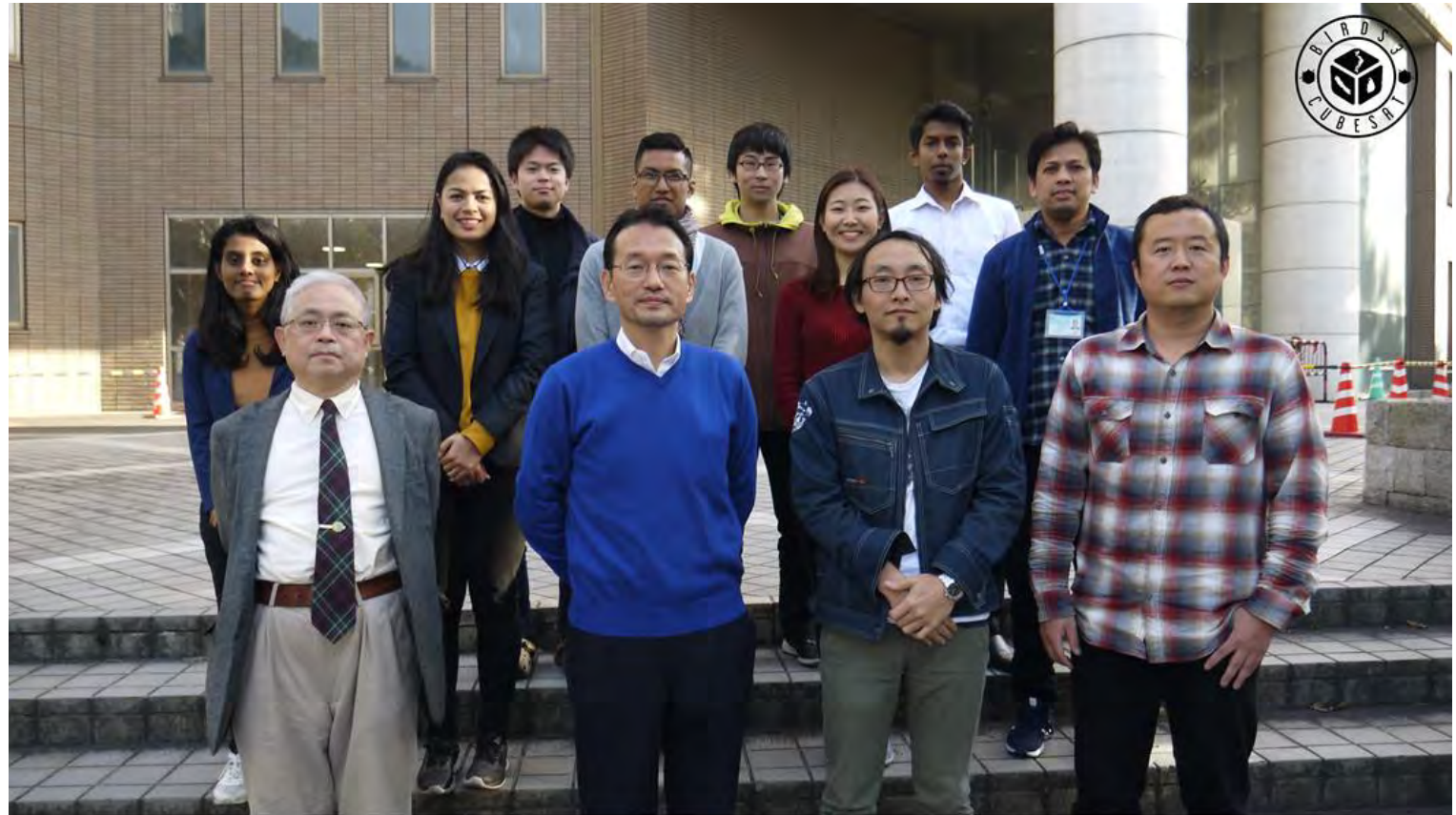
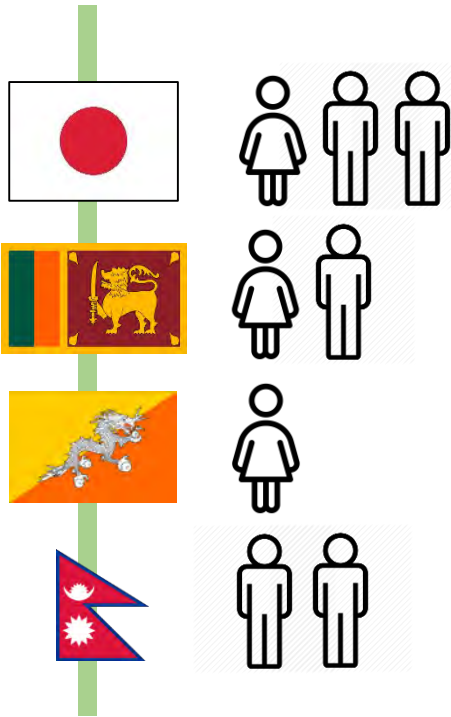


NEPAL - JAPAN COLLABORATION


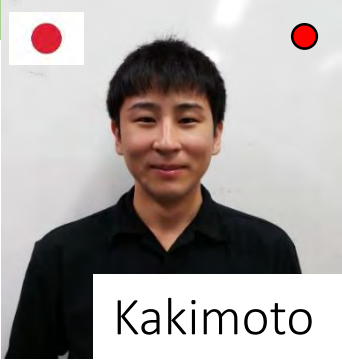








- Declaration Date: 17th Jan, 2017
- Cooperative Research Agreement signing Ceremony (CRA)
- Prof. Oie (Left), President, KyuTech and Prof. Jibraj Pokharel, Former VC of NAST

BIRDS-3 Mission and Team



Team Members: System/Mission Assignments

 <p>Pooja</p> <p>EPS</p>	 <p>Kakimoto</p> <p>OBC</p>	 <p>Makiko</p> <p>Antenna Ground Station</p>	 <p>Sasaki</p> <p>Structure</p>
 <p>Dulani</p> <p>ADCS</p>	 <p>Tharindu</p> <p>COM LDM</p>	 <p>Hari</p> <p>EPS BIRDS-4</p>	 <p>Abhas</p> <p>Project Manager CAM BPB</p>

Color Codes



Undergraduate
(学部)

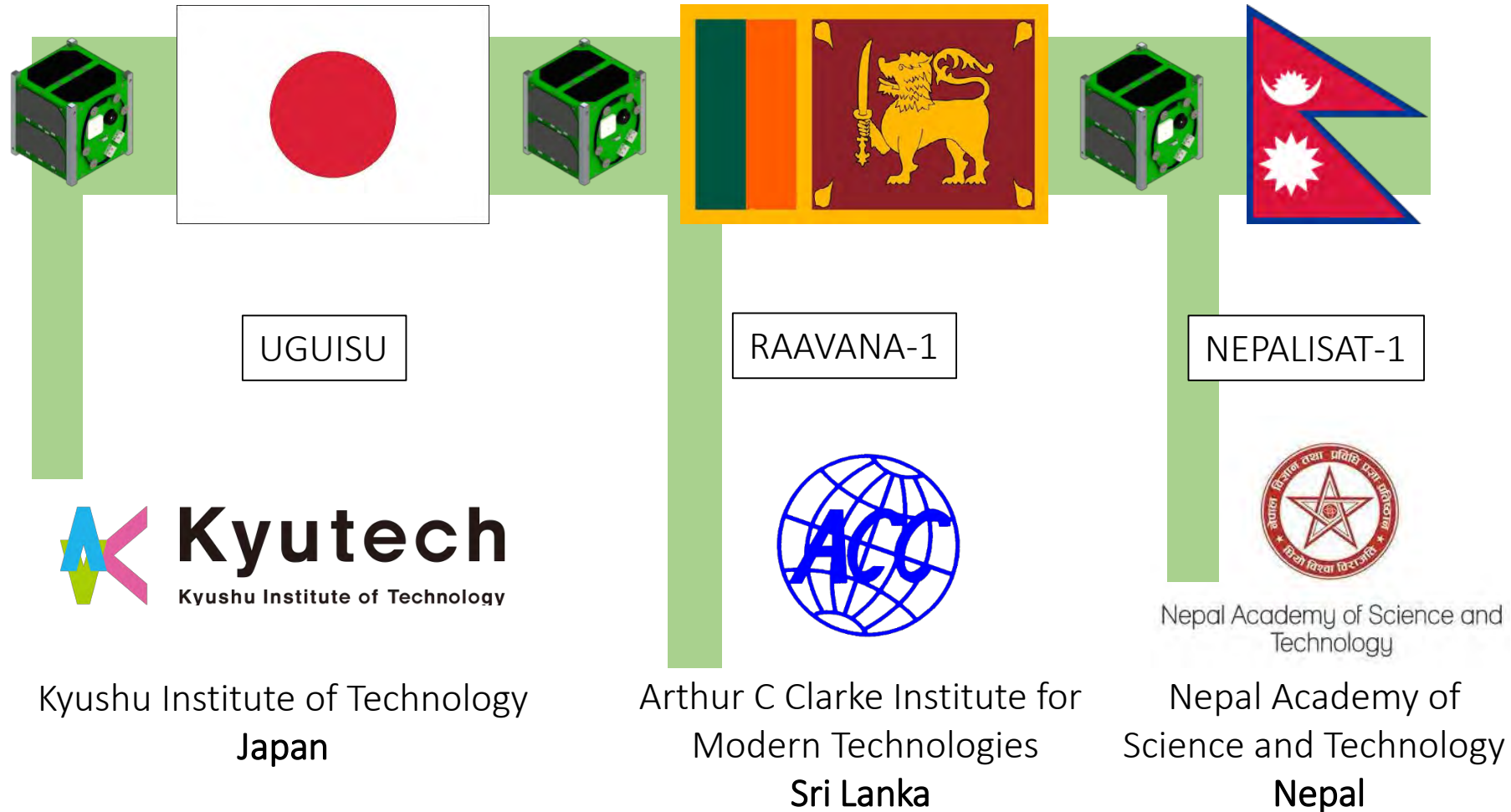


Master's
(修士)



PhD
(博士)

BIRDS-3 Satellites




Kyushu Institute of Technology
Japan

Arthur C Clarke Institute for
Modern Technologies
Sri Lanka

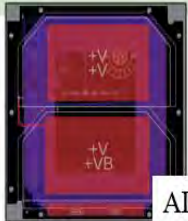
Nepal Academy of
Science and Technology
Nepal

Missions


MSN	Objectives	Parameter	Properties
CAM	Media and Social outreach	Ground Swath	700 km x 350 km
		Module	OV5642 Arducam
ADCS	Active Stabilization	PCB MTQ	3axis, I = 0.03A
LDM	LoRa Demonstration Validate module	Module	HopeRF's RFM95W x2 (Semtech SX1278)
BPB	Validate new software BPB	CPLD	ispMACH




CAM



ADCS



LDM



BPB

Table. BIRDS-3 Missions and its objectives

BIRDS-3 has five missions

- LoRa Demonstration Mission (LDM),
- Imaging Mission (CAM),
- Attitude Determination and Control Mission (ADCS),
- Software Configurable
- Backplane Mission (BPB)
- Amateur messaging.

Design

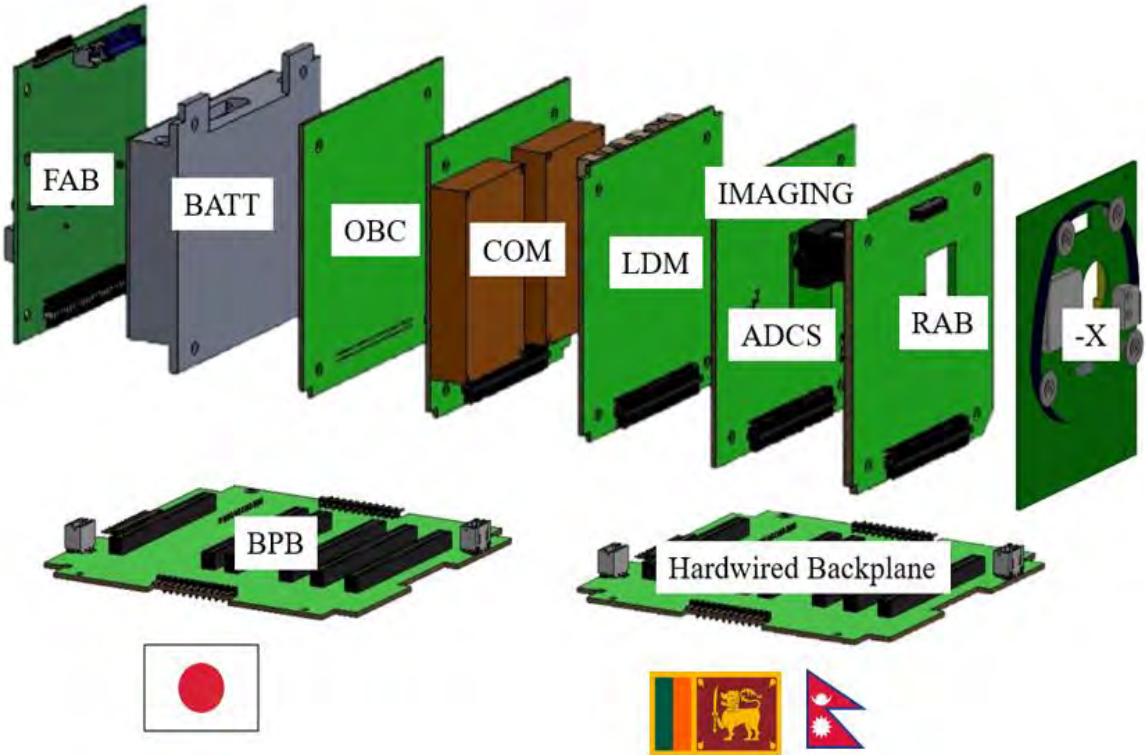


Fig. Internal structure of nanosatellites.

1U CubeSat standard

- Dimension of 113.5mm(external) x 100 mm x 100mm.
- Mass: approximately 1kg

Project Timeline

1. Mission Definition Review(MDR) 28th Dec 2017
2. Preliminary Design review (PDR) 24th April 2018
3. Critical Design Review (CDR) 1st Sep 2018
4. Press Conference 15th Feb 2019
5. Submitted to the JAXA 18th Feb 2019
6. Launched 17th April 2019
7. Deployment from ISS* 17th June 2019

*ISS: International space centre

*JAXA: Japan Aerospace Exploration Agency



Operational Concept Status

- operate in the amateur Ultra High Frequency (UHF) band of 437.435 MHz
- satellites are in ISS orbit at an altitude of 400km

Planned	Specifics
Orbit	ISS orbit ~400km
Inclination	51.6°
Period	92.6 min (~60 min sunlit)
Frequency	Amateur, 437.435 MHz
Uplink	UHF (4800 bps)
Downlink	UHF (4800 bps)

BIRDS Ground Station Network/Nepal Ground station



Nepal GS: equipped with VHF and UHF Yagi-Uda directional antenna, antenna rotator for antenna pointing, Terminal Node Controller (TNC), Radio Transceiver, and ground station computer.



<https://mapchart.net>

Photo: KyuTech

Motivation and Result

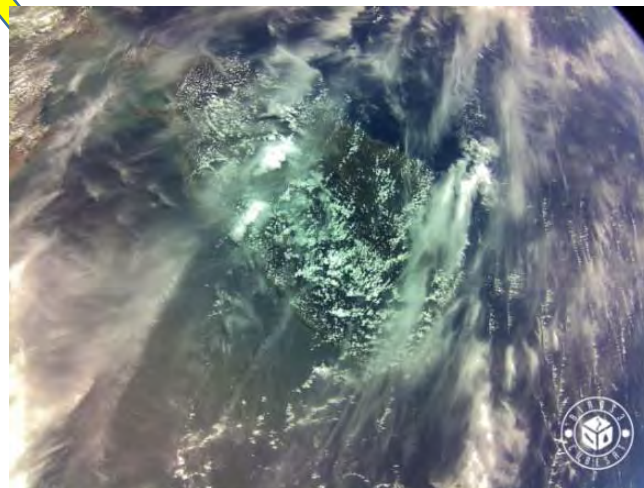
- Nepal is the Earthquake prone and different types of natural disasters like floods, landslides, avalanches etc
-
- Communication
 - Remote Sensing
 - Track landscape changes

BIRDS-3 Imagery Database

Sri Lanka



Pacific



Mongolia

Parameter	Details
Resolution	640x480
GSD	1200m
Format	JPEG
Completed	30
Size	7~73kB

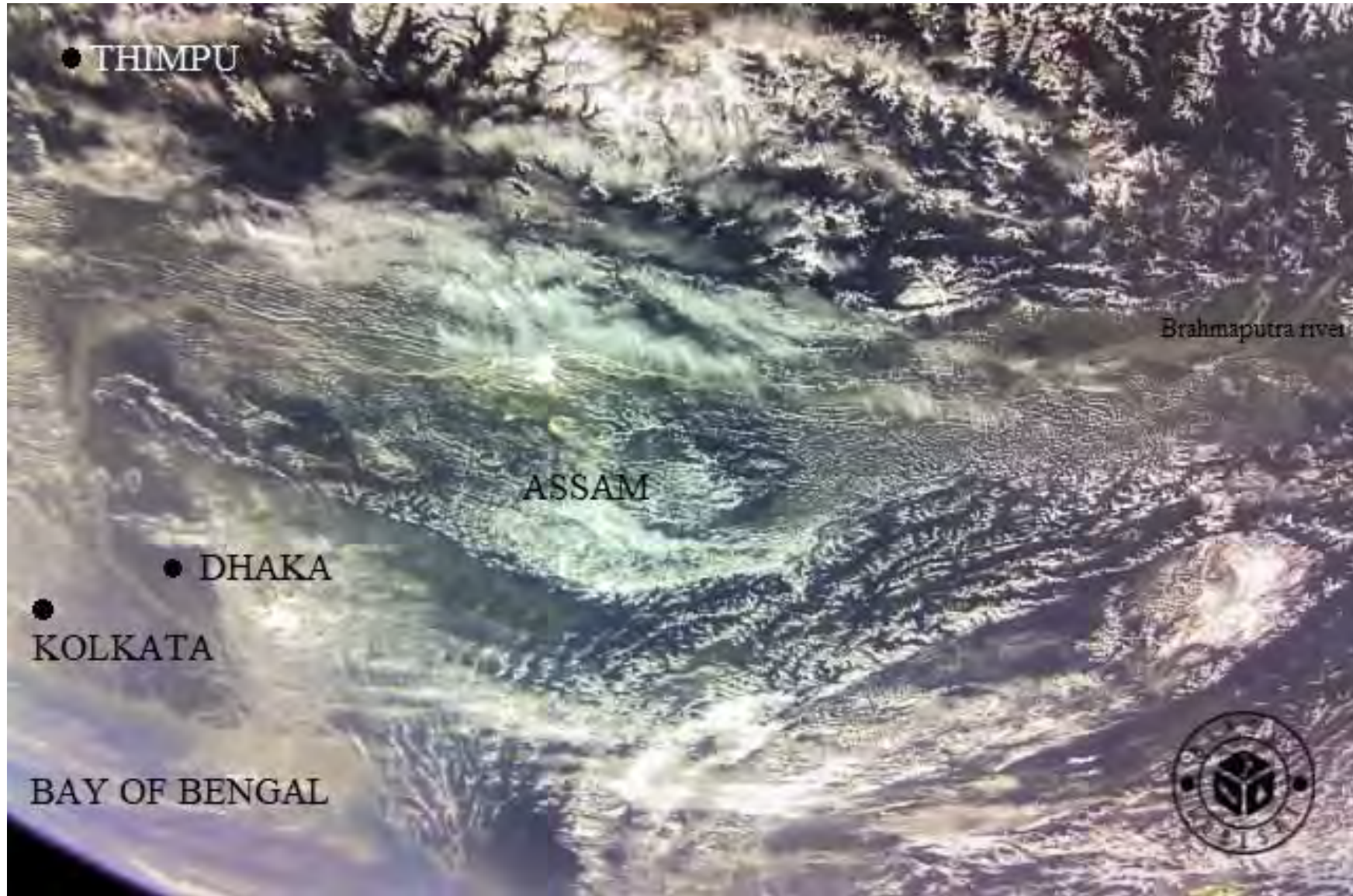
*GSD: Ground Sampling Distance

Source: BIRDS-3 Team

Sri Lanka



South Asia



BIRDS GS Network Leverage

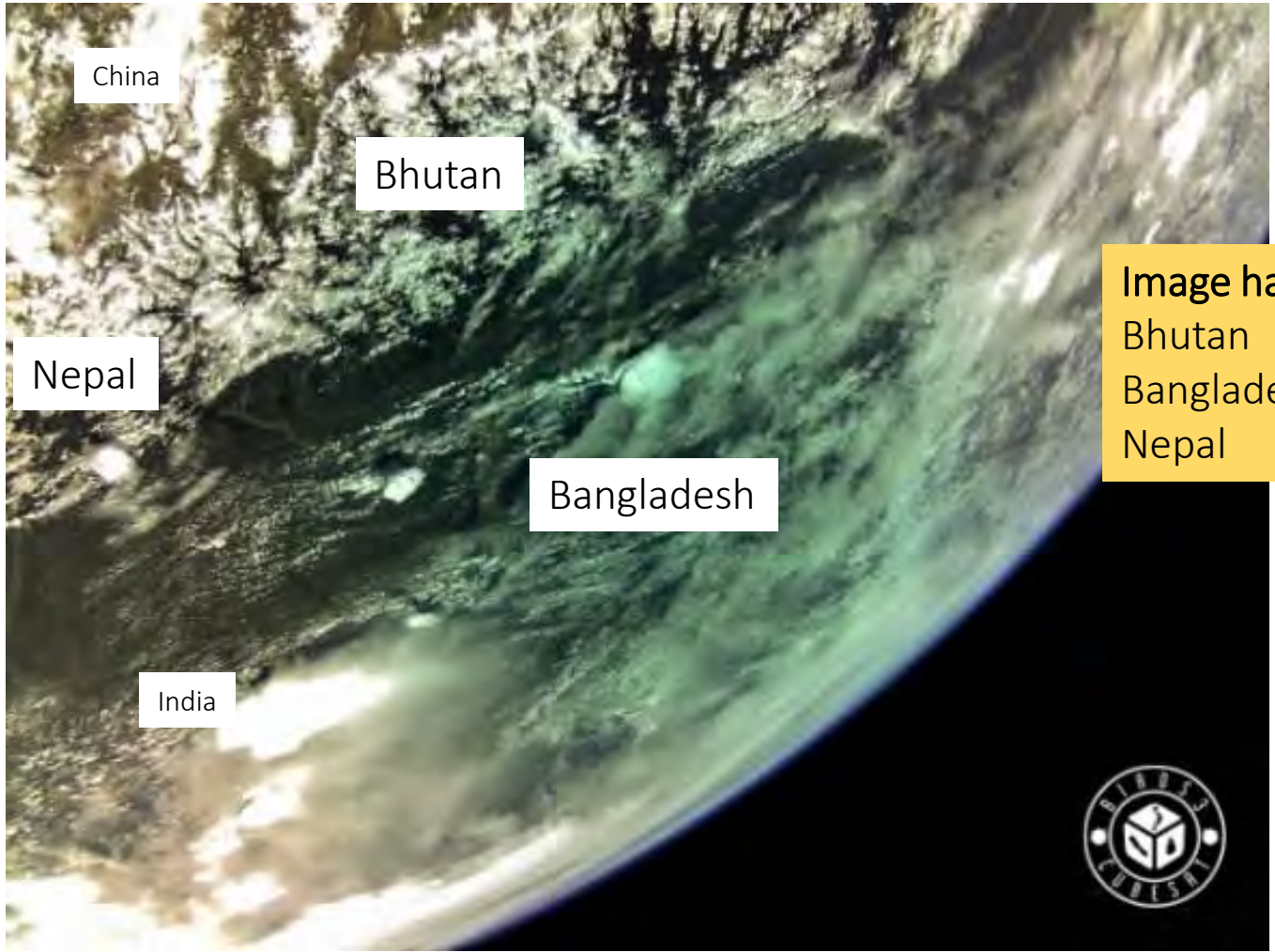


Image has:
Bhutan
Bangladesh
Nepal

Reserve Command:
Sri Lanka
(Raavana-1)



Downlink Support:
Japan
Mongolia
Thailand

Over Japan



QSL Cards (Amateur Radio)



Arthur C. Clarke Institute for Modern Technologies
Moratuwa – Sri Lanka
www.accimt.ac.lk



Dear Mr/Mrs

We are pleased to confirm your reception from our Raavana-1 satellite
On:
Time: **UTC**
Frequency: **MHz**
TX power: **mW**
TX type:

Ref:
To:

Thank you very much for your reception report

ACCIMT Ground station manager
(4S7AC)
Date:



KYUSHU INSTITUTE OF TECHNOLOGY

laplace.ele.kyutech.ac.jp/



Dear Mr/Mrs

We are pleased to confirm your reception from our Uguisu satellite
On:
Time: **UTC**
Frequency: **MHz**
TX power: **mW**
TX type:

Ref:
To:

Thank you very much for your reception report

KIT Ground station manager
()
Date:



Nepal Academy of Science and Technology
<http://www.nast.gov.np/>



Dear Mr/Mrs

We are pleased to confirm your reception from our Nepalisat-1 satellite
On:
Time: **UTC**
Frequency: **MHz**
TX power: **mW**
TX type:

Ref:
To:

Thank you very much for your reception report

Nepal Ground station manager
()
Date:

<https://birds3.birds-project.com/2019/06/17/qsL-cards/>

PNST/SEIC

- The PNST Fellowship Program was initiated in 2013 by the United Nations Office for Outer Space Affairs (UNOOSA) and the Government of Japan in conjunction with the Kyushu Institute of Technology (Kyutech).
- (PNST)" Fellowship Program will accept up to three students in the Masters course (2 years duration) and up to three students in the Doctorate course (3 years duration).
- designed for aspiring students and engineers with passion for space, satellites, or the desire to return skills and technology to their home country

SEIC(Space Engineering International Course)

SEIC students(Oct. 2018)

Number of Students	Nationality
27	Japan
5	Philippines
4	Bhutan
3	France, Malaysia, Nigeria
2	Colombia, Mexico, Indonesia, Nepal, Sri Lanka, Sudan, Thailand
1	Algeria, Bangladesh, Costa Rica, Egypt, Ghana, Kenya, Mongolia, Namibia, Turkey



Leading University for Small Satellite Launches

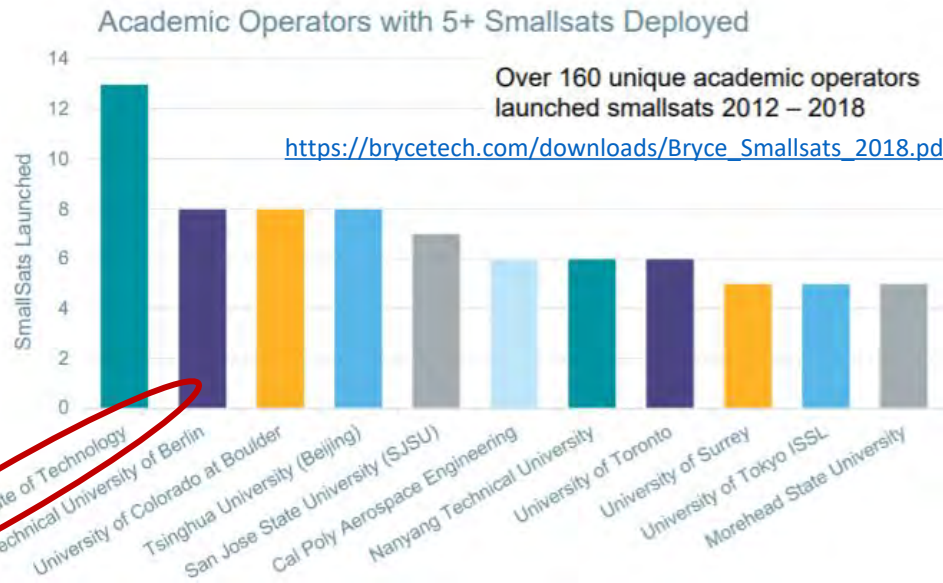


Kyutech as world No. 1 in university small satellite launches

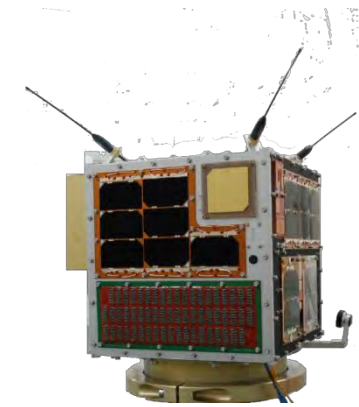
<http://www.kyutech.ac.jp/english/en-news/topics/entry-6106.html>

Update:2018.12.27

A space industry report states that Kyutech is the world No. 1 academic operator of small satellites.



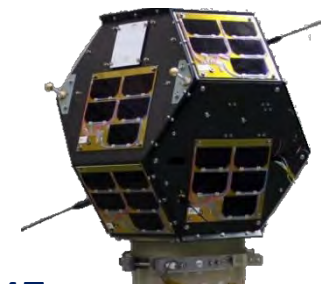
Spatium



Horyu-IV



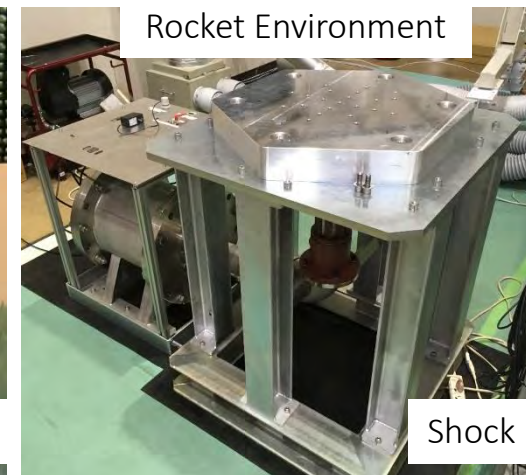
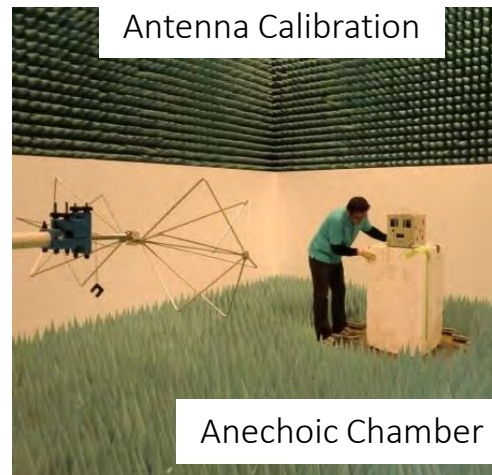
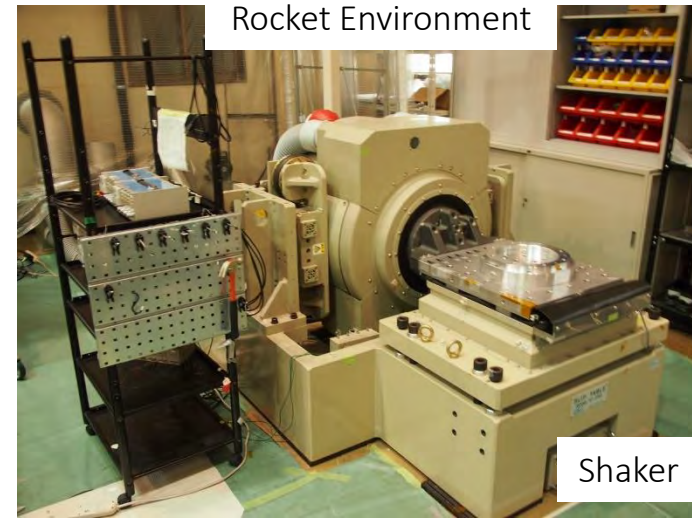
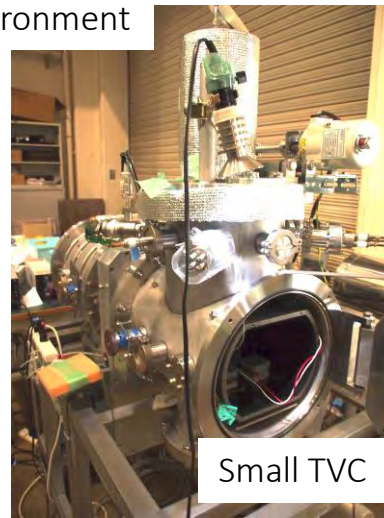
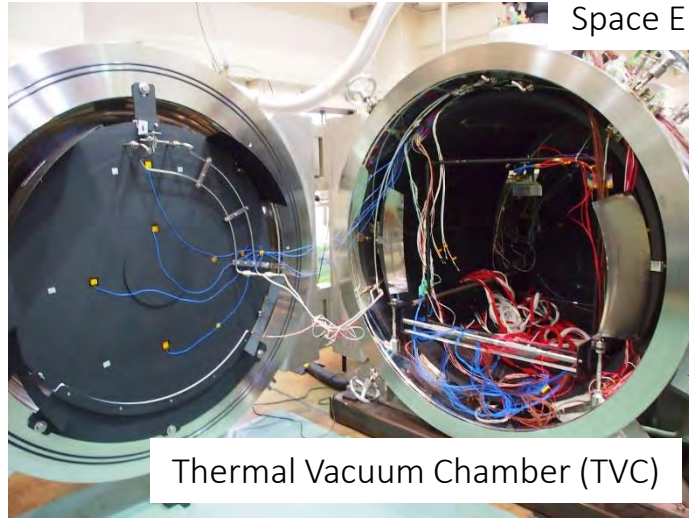
BIRDS Series



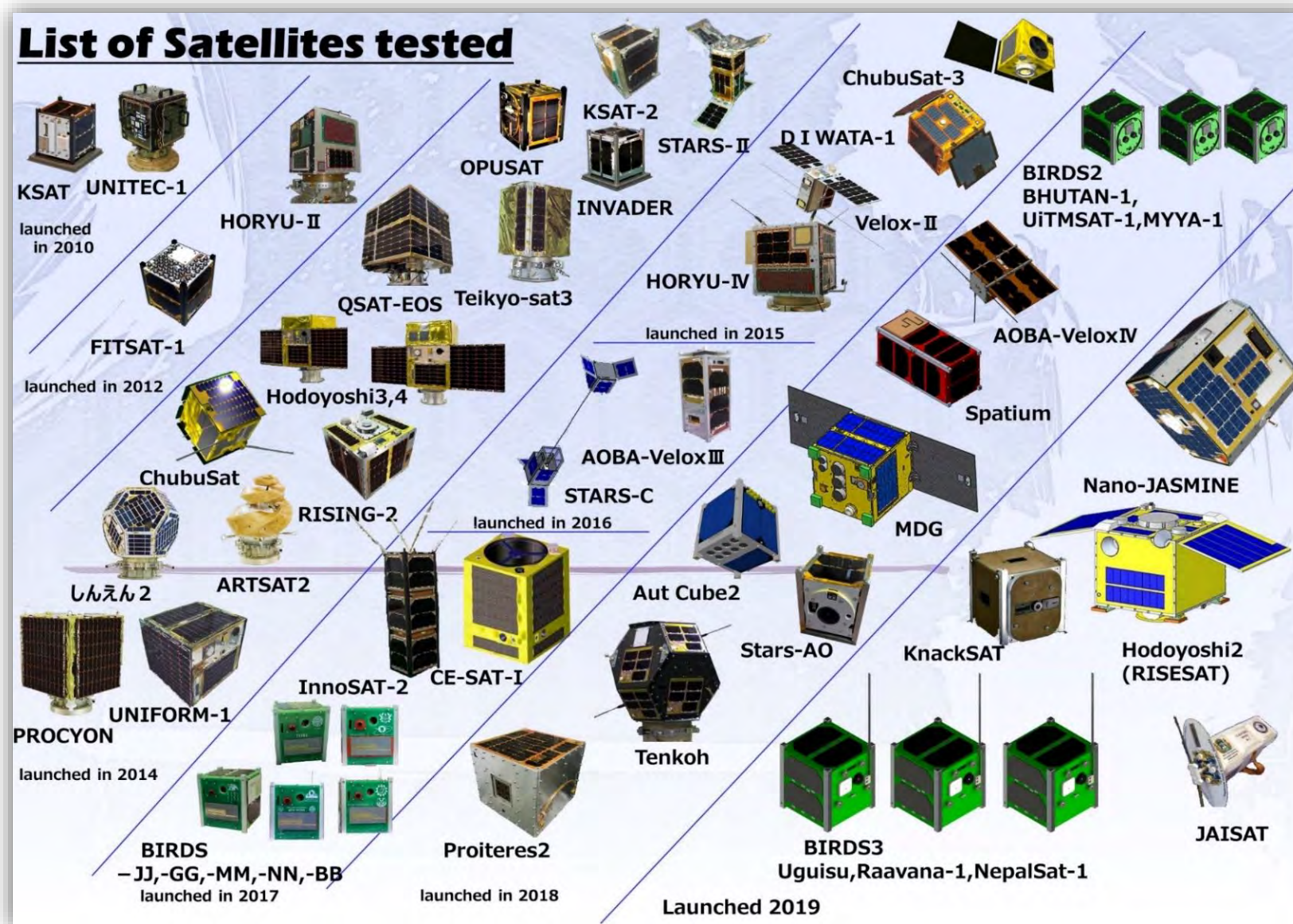
Ten-Koh



Center for Nanosatellite Testing (CeNT)



Satellites Tested at Kyutech



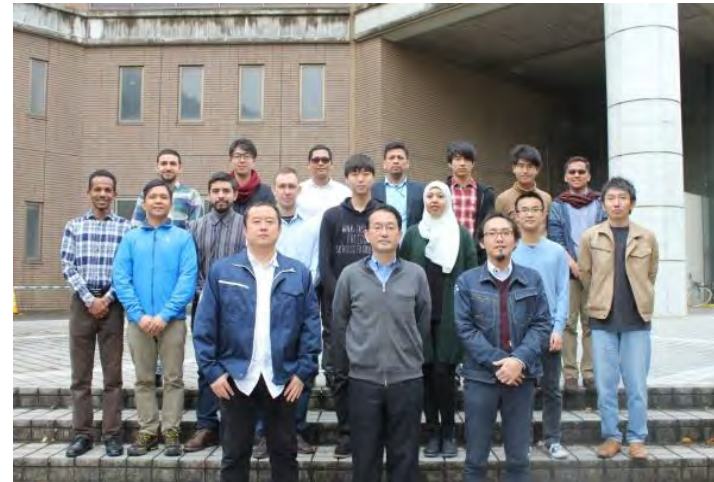
LaSEINE



- Laboratory of Spacecraft Environment Interaction Engineering was established in December 2004. According to the KyuTech the purpose of the center is to research and develop space-resistant environmental technologies necessary to achieve next-generation space use such as small satellites, high-speed and large-capacity communications, high-precision geodetic measurements, remote sensing, material creation, tourism, exploration, and energy generation

LaSEINE

- The BIRDS-4 project is the fourth project for non-space faring countries supported by Japan participating countries are Philippines, Japan and Paraguay.



BIRDS-4 Team members with Professors.

(Photo credit: BIRDS-4)

Course and Results

Space Engineering International Course (SEIC) Requirements 2019

【Master course /The course requirements】

Subject category		SEIC / Course requirements	
Liberal Arts Subjects group	(B)Advanced Liberal Arts Subjects	Compulsory	<i>Space Environment Testing Workshop</i> 1 credit
	(C)Advanced Language Subjects		<i>Space Systems PBL I · II</i> 2 credits
	* (D)Practical Training Subjects	Elective Compulsory	<i>Japanese for Beginners</i> or <i>English XA</i> 1 credit
Specialized Subjects group	(G)Special Seminar Subjects	Compulsory	<i>Thesis Research for Degree of Engineering</i> 2 credits <i>Special Experiment of Engineering</i> 1 credit
	(E)Mathematical information subject (F)Specialized Subjects	Compulsory	<i>Advanced Embedded Systems</i> 2 credits
		Elective	30 credits minimum from SEIC subject table including all the Compulsory subjects and 14 credits minimum from Major course subjects.
		Elective Compulsory	Sub-Major Module S1 + S2 = 6 credits minimum (S1, S2: 2credits minimum each)
Required credits (total amount)		30 credits minimum	

* Master course students can earn upto 4 credits from (D)Practical Training Subjects. If you earn additional credits, they are not counted as the requirements, but they will be written in your transcript.

Total required credits for Master Degree: 30 credits minimum from Master Program SEIC Subjects
Including 14 credits minimum from Major Course Subjects,
6 credits minimum from Sub-Major Module,
and Compulsory and Elective Compulsory Subjects.

Courses and Results

Student number: 18350936 Student name: SHRESTHA Hari Ram

**Credits that cannot be included in graduation and completion due to "excess" in the total line will not be added.
For courses marked with "○" in the upper limit column, the number of credits earned exceeding the upper limit is not a requirement.**

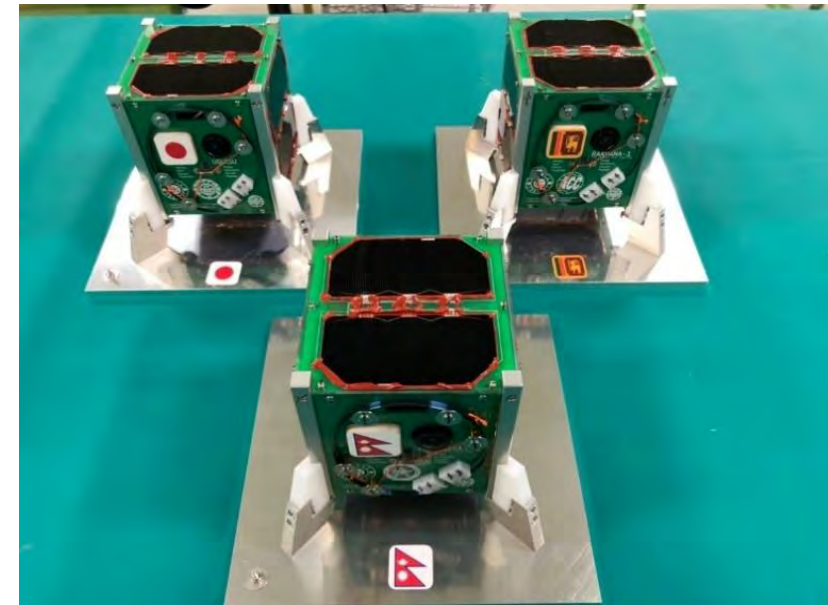


Major requirement category	Medium requirement category	Subject category	Unit classification	Necessary unit	Upper limit unit	Upper limit	Credits earned			Requirements remaining	Academic credits	
							Mastery	Replacement	Excess			
Lectures (main major)	Common course selection	Specialization common	Selection	6	0		6	0	0	0	2	
	Total requirements				6			6	0	0	0	2
	Specialized subject required	Self-major specialization	Necessary	6	6		2	0	0	Four	0	
	Total requirements				6			2	0	0	Four	0
	Specialized subject selection	Self-major specialization	Selection	0	0		14	0	0	0	Three	
	Total requirements				0			14	0	0	0	Three
	Practical course selection required	Practice subjects	Must	1	1		1	0	0	0	0	
	Total requirements				1			1	0	0	0	0
	Practical course selection	Practice subjects	Selection	0	0		Three	0	0	0	2	
	Total requirements				0			Three	0	0	0	2
	Practical course required	Practice subjects	Necessary	1	1		1	0	0	0	1	
	Total requirements				1			1	0	0	0	1
	Total requirements				30			27	0	0		8
	total				30			27	0	0		8
Out of requirement / out of assessment							0		0		0	

Annex



- Prof. Oie, Prsudent of Kyutech (left), Prof. Mengu Cho, Dr.sunil Babu shrestha,VC, Abhas Maskey (BIRDS-3 Project Manager) at Press conference on 15th Feb 2019, at Kyutech.



- NepalSat-1 with all nanosatellites



- Dr.Suresh Dhungel, Asst. Professor Maeda, and Abhas Maskey



← After completion of Flight Module Integration; all three satellites in our clean room.



- President of Kyushu Institute of Technology and Vice chancellor of NAST with Replicate NepaliSat-1

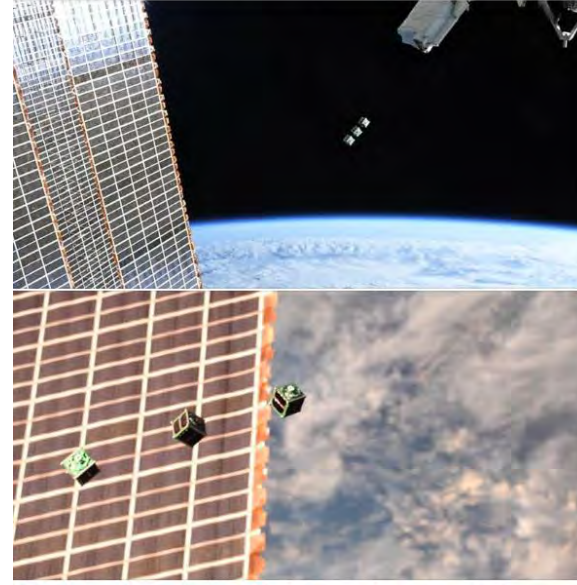


- Nepali two engineers Abhas and with Dr.Sunil Babu Shrestha, VC, NAST in clean room



- Hon. Minister Shree Giriraj Mani Pokahrel, (MoEST), Nepal and Ambassador for Japan Dr. Prativa Rana in JAXA, NepalSat-1 during deployment time.

Photo credits : NASA Astronaut Nick Hague



- During Deployment moment of BIRDS-3 by International space station (ISS)

References

1. Introduction to BIRDS Ground station Network for BIRDS satellites , Apiwat Jirawattanhon, LaSEINE Kyushu Institute of Technology, Japan
2. Overview of BIRDS-3 Satellite Project involving Sri Lanka, Nepal and Japan ,Abhas Maskey, LaSEINE ,Outreach
3. <https://kyutech-laseine.net/>
4. <https://www.tobata.kyutech.ac.jp/gr-school/gra-program/seic/>



03. Highlighting the food culture of Japan



From E-mail Newsletter "Highlighting JAPAN"

<http://www.gov-online.go.jp/eng/publicity/book/hlj/index.html>

No. 138 (November 2019)

The online magazine HIGHLIGHTING JAPAN is published once a month by the Government of Japan to help readers better understand Japan of today.

もっと知りたい、伝えたい。日本の'今'をアップデート ~ オンライン・マガジン HIGHLIGHTING JAPAN



04. IAF Awards for Prof. Cho and SEIC students mentioned at Kyutech web site

Kyutech professor and students receive the medal and the awards at IAC

Update:2019.12.11

At the International Astronautical Congress (IAC) 2019 held during 21st-25th October 2019 in Washington D.C., Prof. Dr. Mengu Cho (Department of Space Systems Engineering of Kyutech) received the 2019 Frank J. Malina Astronautics Medal, which is "presented annually to an educator who has demonstrated excellence in taking the fullest advantage of the resources available to them to promote the study of astronautics and related space sciences", from the International Astronautical Federation (IAF).

Three of Kyutech international students, Mr. Mustapha Femi Ishola (from Nigeria), Mr. Izrael Zenar Casople Bautista (from Philippines), and Mr. Yasir Abbas (from Sudan) won the Emerging Space Leaders (ESL) awards, which selected only 25 students and young professionals from as many as 120 applicants, to participate in the IAF Emerging Space Leaders (ESL) Grant Programme.



Prof. Mengu Cho receives the Frank J. Malina Astronautics Medal



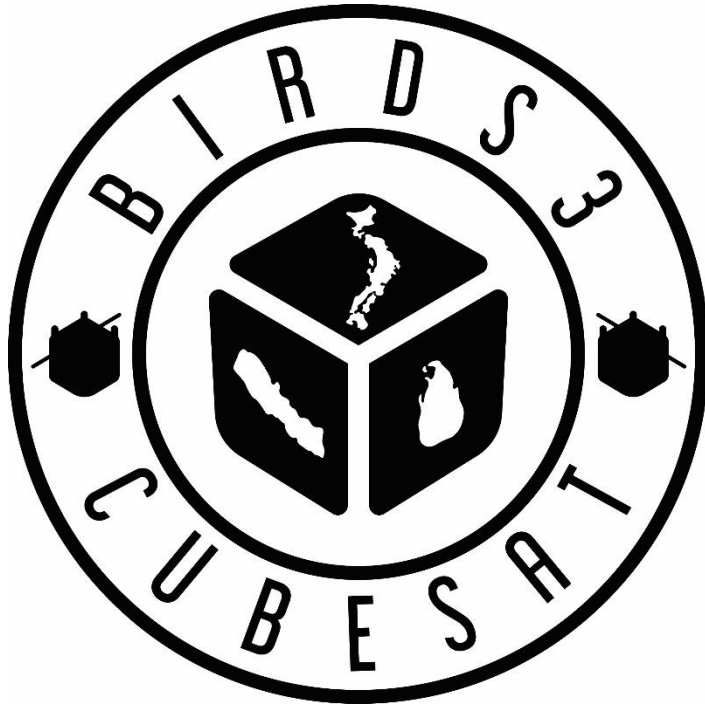
Three Kyutech students receive the ESL certificates

← During 2019 IAC in Washington DC



<https://www.kyutech.ac.jp/english/en-news/topics/entry-7097.html>

05. Country report during APRSAF: Nepal reports BIRDS-3 as its first satellite in space



During recent APRSAF in Nagoya, Nepal formally described its success with its first satellite into space. This two-page article (next two pages) about that announcement (country report by Nepal) was written by Abhas, Project Manager of BIRDS-3.



BIRDS-3 Presented at APRSAF 2019



Mr. Krishna Raj Adhikari represented Nepal at this year's APRSAF 2019 from November 26-29, 2019 in Nagoya, Japan. Mr. Adhikari is former Joint Secretary working for the Government of Nepal. Currently he leads Nepal Scientific Activities and Research Center (NERSARC) which does water rocket events, CanSats and space education related activities in Nepal.



**Continued
next page**

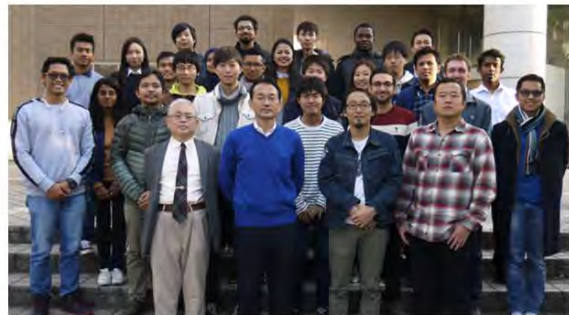
BIRDS-3 Presented at APRSAF 2019, cont'd

Successfully Build Nepal's first satellite under BIRDS-3 MISSION

On 17 June ,2019 Four CubeSat were deployed from Japanese Experiment Module(JEM) "KIBO" .One of them was NepaliSat-1 co-developed by Nepal Academy of Science & Technology (NAST) of Nepal and Kyushu Institute of Technology (Kyutech) . Other three were Raavana -1: CCIMT of Srilanka , Uguisu: Kyutech of Japan and Spooqy-1 :SSTA of Singapore .



Ravaana-1 of Srilanka, NepaliSat-1 of Nepal, and Uguisu of Japan



Team members of BIRDS -3 Mission

Mr. Adhikari presented about BIRDS-3 Project APRSAF 2019. The slides included brief information about the three satellites, details on the project and NepaliSat-1 public viewing event in Nepal.



First Satellite of Nepal: NepaliSat_1



Nepal Academy of Science and Technology

CubeSat Carrier Dimension

Dimension 113.5 x 100 x 100 {mm3}
 Weight: 1 kg
 Harness Black plane Type

Nepali Sat-1 time line

- Pre co-operative research agreement (CRA) on 22nd Sep 2017
- Funding Approval on 14 Nov 2017
- CRA exchange on 17 Jan 2018
- Press release on 25 Feb 2019
- NepaliSat_1 Delivery on 18 Feb 2019
- NepaliSat-1 Launch on 18 April 2019
- NepaliSat-1Deployment on 17 June 2019



Launch handled by JAXA and deployed from ISS

Orbit : ISS Orbit ~400km
 Inclination: 51.6 degree
 Period: 92.6min(~60min sunlit)
 Frequency: 437.435 MHz
 Uplink: UHF (4800 bps)
 Downlink: UHF (4800 bps)



CRA Exchange



Press Release



First Satellite of Nepal : Nepali Sat-1





International Space Station

Public viewing of Nepali Satellite -1 deployment program on 17 June 2019 at NAST Nepal



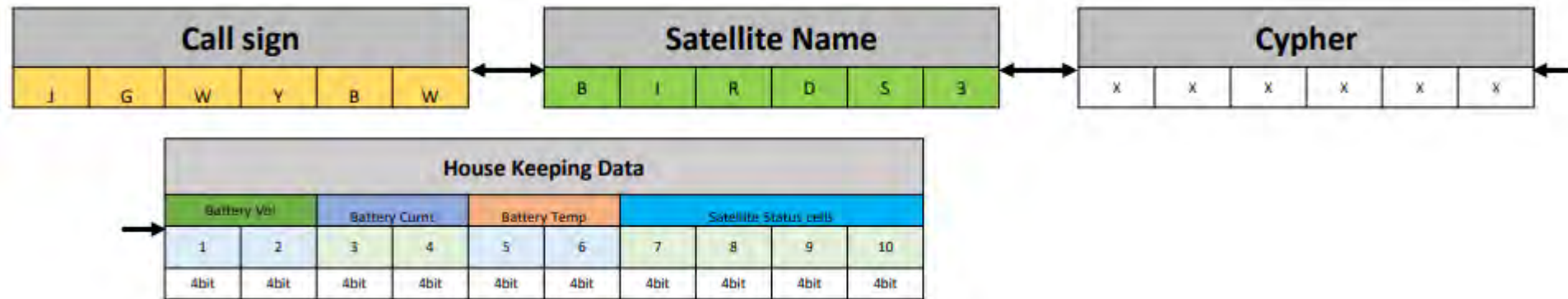


06. You can put a message into the beacon signal of BIRDS-3 satellites

BIRDS-3 Correspondence with Amateur Radio Community

-Pooja Lepcha

One of the missions of BIRDS-3 satellites was to display 6 letter messages in the beacon sent by operators from Amateur Radio Community. The CW format is as shown below:



The message can be requested in the following link:

<https://birds3.birds-project.com/outreach/document/message-request/>

A number of message requests were sent in by ham operators all over the world.

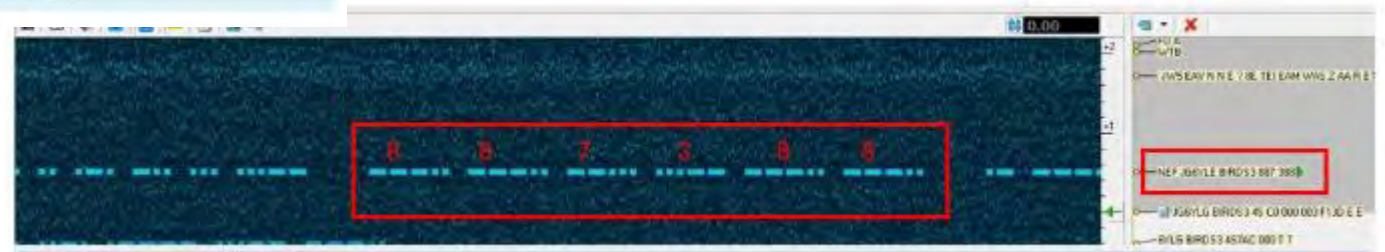
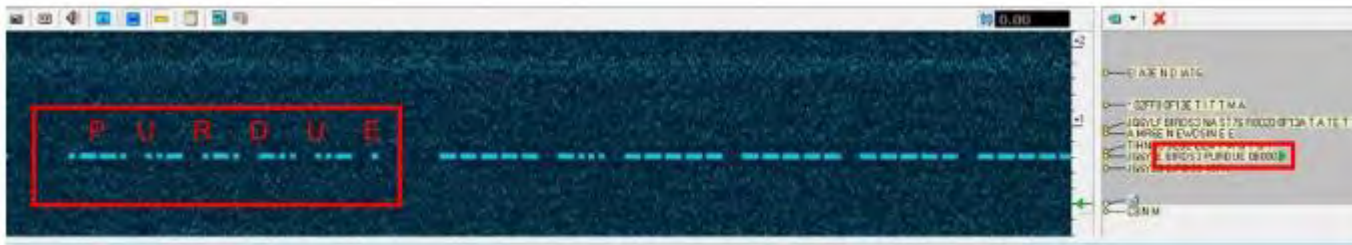
Timestamp	Call Sign	Your Name	Message	Notes
6/15/2019 3:54:30	KD4S	Richard McClain	PURDUE	UGUISU (19-26 July,2019)
6/15/2019 5:37:40	W4OA	F Mitchell	887388	UGUISU (27 July~,Aug 22019)
6/17/2019 14:27:39	9N1PO	Saurav Paudel	,9N1PO	UGUISU (3 Aug~13Aug,2019)
6/17/2019 14:29:06	9N1JT	Jiten Thapa	NEPPQ1	NepaliSat(10Aug~25Aug
6/17/2019 14:42:04	K4KDR	Scott	2k4kdr	Uguisu (13Aug~25Aug
43633.87805	M0JJS	Jatinderjit Singh	SINGH1	Uguisu (25Aug~31st Aug 2019)
43634.26124	K7SFQ	Sam Quinn	K7SFQ	NepaliSat(25Aug~13th Sept
43636.04217	ZS1CDG	Chris Gozzard	ZS1CDG	Uguisu (03sept~13th Sept
43636.27357	HC3BL	BYRON	HC3BL	Uguisu (14sept~1st Oct
43638.69213	F6HDW	GLOMSKI Jean Claude	MELYNE	Uguisu(1st Oct~15 Oct
8/10/2019 8:47:03	SWL	Sadeepa Sepala	RSSLLK	Raavana(13Aug~25 Aug
8/10/2019 8:47:35	SWL	Sadeepa Sepala	ARALLK	Raavana(25 Aug~03 sept

UGUISU=sat of Japan

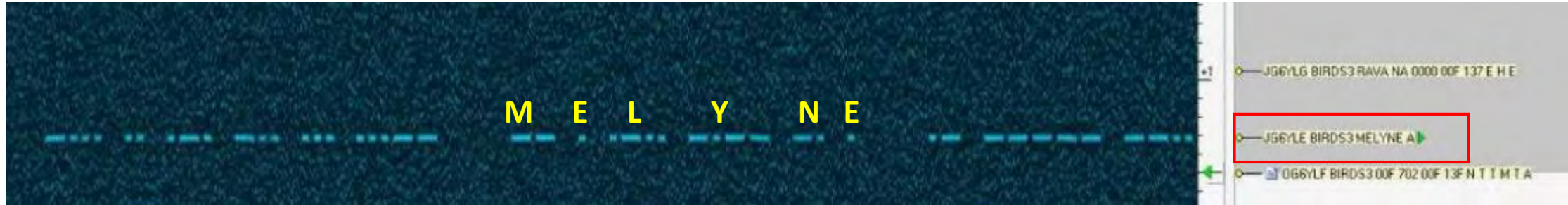
NepaliSat=sat of Nepal

Raavana=sat of Sri Lanka

The messages were updated in the beacon and the operators were sent intimated.



One message especially made an operator happy and sent us this email:



Hello Pooja,

I was very happy to be able decode in CW the name of my little girl MELYNE.

Thank you very much to the whole team for this work.

I join you my QSL card.

My best 73 !

My adress is :

GLOMSKI Jean Claude
3 rue du château d'eau
09400 Alliat
Occitanie
FRANCE

The BIRDS-3 team has been continuing to receive and update the messages in the beacon. If any of you want to see your message in our beacon, please send us your request using the following link:

<https://birds3.birds-project.com/outreach/document/message-request/>



World War II memorial

Washington D.C



By Dulani Chamika
14 Dec. 2019

I attended the 27th UN/IAF workshop which was held from 18th -20th October and 70th International Astronautical Congress which was held from 21st -25th October 2019 in Washington D.C, USA. This report focuses on the things/places I saw during my stay in Washington D.C.



We rented a house through Airbnb. These pictures show the place we stayed.



This picture shows one of the breakfasts.





World War II memorial



Washington Monument



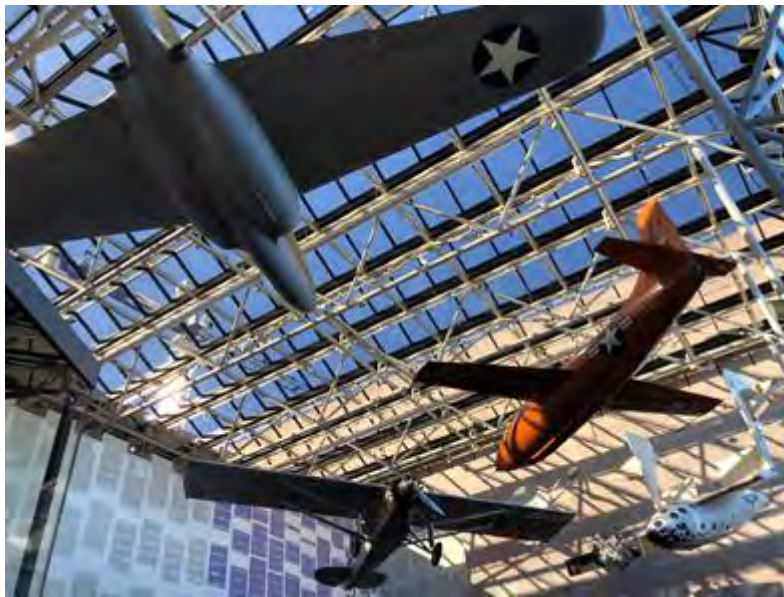
One of the statues



Above two pictures show the Lincoln Memorial.

I was able to visit the National Air and Space Museum. The picture in the right side shows the space suit of Neil Armstrong which he wore when he made the historic walk on the surface of the moon.





Inside the National Air and Space Museum.

The last day , after the closing ceremony we(Prof Dianne, Leo, Femi, me) visited West Virginia. And we had our dinner there.



BIRDS Project Newsletter – No. 47



This picture was taken while we were coming back to Japan. This picture shows the entrance to Washington Metro.

This was my first visit to USA and it was a great experience for me.

END

08. Event in Thailand: 2019 Int'l Alliance Volunteers Conference



At the office of the *National Broadcasting and Telecommunications Commission (NBTC)*, Bangkok
15-16 November 2019

Report by Apiwat Jirawattanaphol

On the auspicious occasion of
the Coronation of
**His Majesty King Maha Vajiralongkorn
Phra Vajiraklaochaoyuhua**

Office of The National Broadcasting and
Telecommunications Commission (NBTC)
In association with
Radio Amateur Society of Thailand
under The Royal Patronage of His Majesty The King (RAST)

We cordially invite you
to this seminar of minds and activities,
International Alliance Volunteers
November 16th, 2019
8.30 a.m. – 4.30 p.m.

Venue:
Office of The National Broadcasting and Telecommunications Commission
87 Phaholyothin 8 (Sai Saikom), Samsen Nai, Phayathai,
Bangkok, Thailand

NBTC RAST

Dress Code: Business Casual



NBTC Secretary-General Takorn Tantasith participated in the opening ceremony



Delegates prepare to pay obeisance to **His Majesty King Vajiralongkorn** in the opening ceremony

The International Alliance Volunteers 2019 Conference, Thailand's first major conference about emergency communications for amateur radio took place on November 16, 2019 at the National Broadcasting and Telecommunications Commission (NBTC) Secretariat in Bangkok with representatives of 16 countries and Thailand participating. The objective was to promote the development of volunteering for amateur radio communications during crises and disaster events and to enhance the partnership between international amateur radio operators.



His Majesty King Vajiralongkorn, King Rama X is the patron of the Radio Amateur Society of Thailand and has the callsign **HS10A**. The radio given by the king was show during the IAV2019 conference.



NBTC, Ambassadors and committee



Representatives from countries with a amateur radio reciprocal agreement with Thailand

The Radio Amateur Society of Thailand (RAST) jointly hosted the conference with the NBTC that was attended by over **250 delegates**. Representing the International Amateur Radio Union (IARU) was the Region 3 Chairman, Wisnu Widjaja, YB0AZ, along with a Region 3 Director, Don Wallace, ZL2TLL.



The IARU region 3 Chairman, Wisnu Widjaja, YB0AZ. The presentation was about the role of amateur radio during disaster and emergency communication.



Amateur Radio Emergency Communication in New Zealand presented by the IARU region 3 Director, Don Wallace, ZL2TLL

There were also many other presentations by representatives of national amateur radio societies. Presentations were made by representatives of several national amateur radio societies including Germany, Japan, Malaysia, Indonesia, Philippines and Luxembourg.

Representatives of several national amateur radio societies made presentations during the conference



Amateur Radio Activity at Japan Earthquake and Tsunami presented by the IARU Region 3 Director, Ken Yamamoto, JA1CJP, who also represented the Japan Amateur Radio League (JARL)



Presentation from the Philippines Amateur Radio Association (PARA), the DIWATA-2 satellite also presented in this presentation as a part of emergency communication via satellite.



Emergency medical project explained by a senior adviser to the KDDI Foundation, Mr Yosuke Uchiyama, JH1NBN and Dr Pairoj Boonsirikamchai, a deputy secretary general of NIEM, the National Institute for Emergency Medicine.



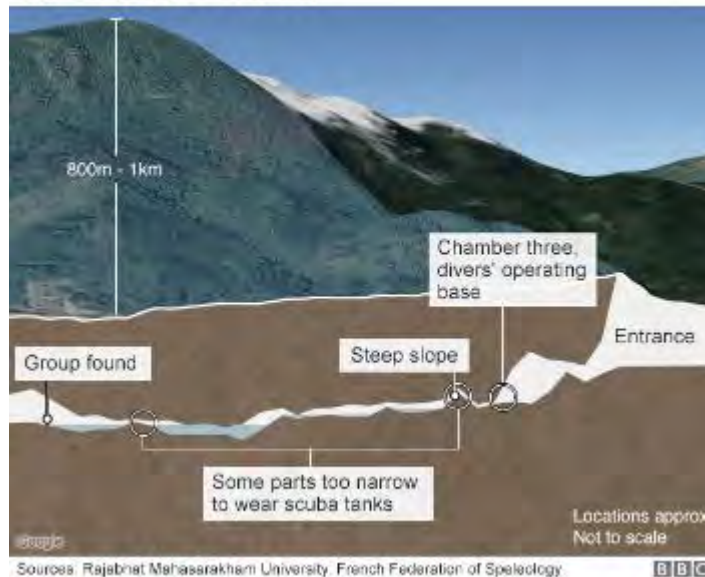
Presentation from the Radioamateurs du Luxembourg (RL)



The RAST presentation was about lessons learned from the Tham Luang cave incident in Chiang Rai, northern Thailand, when a junior football team of 12 boys aged between 11 and 16 were trapped, along with their coach, for over two weeks in a vast cave complex following flooding in late June and early July of 2018. Speakers who recounted the incident on behalf of RAST at the conference were Larry Riser Jr., HSOZKZ, Dr Pakorn Watanachaturaporn, HS1EFA and Pornchai Semjang, HS2JFW who is also a former president of the society.



Cave rescue hazards



Read more about Tham Luang cave incident on BCC: <https://www.bbc.com/news/world-asia-44791998>

<https://www.bbc.com/news/world-asia-44782132>



Apiwat was invited to attend the conference as he is a member of JAMSAT, the Japan AMSAT. And life member of RAST in Thailand.



Welcome dinner on Nov 15, 2019.
 L-R: Wisnu (IARU R3 Chairman), Eddie (PARA-Philippines), Apiwat (Kyutech), Yamamoto-san (JARL), Yosuke-san (KDDI Japan)
 **Kyutech has worked with Yamamoto-san in BIRDS satellites frequency coordination. He is working in JARL international section.

Photo and information of this report was provided by RAST website.

End of NBTC Report



SUDAN SPACE NEWS



by Sondos W.A.Mohamed
Researcher & Head of Applied Programming Department
Institute of Space Research and Aerospace (ISRA)

09. Report from Sudan

Column #2



Dr. Moutaman Mirghani, the PM of ISRASAT CUBE Satellite Project and Associate Professor at ISRA has participated in The 4th Session of the BIRDS International Workshop (4BIW). The workshop was held from November 25 to 28, 2019, in Dhaka, Bangladesh.

The title of presentation made by Dr. Mirghani was “ Trends to Enhance Throughput of Data Link in Cube Satellites”.

During presentation, he has fully demonstrated the reactivation of the ground station at UofK, with the aid of researchers from ISRA.

He also held a meeting with Prof. Cho and Mr. Maeda regarding the involvement of ISRASAT1 cube satellite in the BIRDS-5.



10. Space Launch Market Report Finds Smallsats Driving the Sector

SMALLSAT
NEWS

KSAT LITE

THE GLOBAL GROUND NETWORK
optimized for small satellites and big constellations

YOU ARE HERE: HOME / NEWS / SPACE LAUNCH MARKET REPORT FINDS SMALLSATS DRIVING THE SECTOR

WEEKLY NEWSLETTER

Space Launch Market Report Finds Smallsats Driving the Sector

NOVEMBER 28, 2019 BY EDITORIAL

MARKET
FORECAST

With increase in the capabilities of space launch systems owing to various recent technological developments coupled with better understating of their increasing strategic utility, countries around the world are found taking renewed interest towards expanding their small satellite development programs.

All this is pushing various space agencies into developing an exclusive new generation of space launch vehicles. Realizing this, Amsterdam based Market Forecast has announced the release of their latest report titled – *Global Space Launch Systems – Market and Technology Forecast to 2027*. The report also focuses in

Global Space Launch Systems
Market and Technology Forecast to 2027



“With increase in the capabilities of space launch systems owing to various recent technological developments coupled with better understating of their increasing strategic utility, countries around the world are found taking renewed interest towards expanding their small satellite development programs.”

<https://smallsatnews.com/2019/11/28/space-launch-market-report-finds-smallsats-driving-the-sector/>



UPDATES FROM THE PHILIPPINES

December 15, 2019

University of the Philippines-Diliman
Quezon City, Philippines

PREPARED BY:

Mae Ericka Jean C. Picar

STAMINA4Space Communications Officer, STeP-UP Project
Graphic Artist and Contributing Writer

Nicole V. Ignacio

STAMINA4Space Communications Officer, PHL-50 Project
Contributing Writer and Editor

F. Mara M. Mendoza

STAMINA4Space Project Manager, STeP-UP Project
Contributing Writer and Editor





4BIW

The 4th International BIRDS Workshop

November 25-28, 2019
Dhaka, Bangladesh



Two members from the STEP-UP Project, Engr. Mary Ann Constante and Ms. Mae Ericka Jean Picar, attended the 4th BIRDS International Workshop in Bangladesh. Engr. Constante is the technical lead and Ms. Picar is the Communications Officer of the STeP-UP Project.

Photos: Engr. Constante during her presentation titled "STEP-UP: From Pioneers to Enablers" (top left) , Ms. Picar during her presentation entitled "The Philippines: Snapshots and Data, Data, Data" (middle, left) the female delegates of 4BIW (bottom left)

4BIW Day 1 : Public Forum

November 25, 2019

Pan Pacific Sonargaon Dhaka Hotel,
Dhaka, Bangladesh

The public forum is attended by over 300 participants composed of students, industry members, and officials from Bangladesh. The event was beautifully organized and the response from the speeches and lectures were overwhelming!



**4th BIRDS International Workshop
-Demystifying Satellites**
4biw.bracuac.bd

10:00	Opening
10:05	Welcome speech by Professor Arshad M. Chowdhury, Dean, School of Engineering and Computer Science, Brac University
10:07	Intro to 4 th BIRDS International Workshop (4BIW)
10:15	Intro Video
10:20	Introduction of delegates
10:25	Keynote Speaker 1-Air Vice Marshal Ahm Fazlul Haque Vice-Chancellor of Bangabandhu Sheikh Mujibur Rahman Aviation and Aerospace University (BSMRAAU)
10:40	Keynote Speaker 2-Dr. Mengu Cho, Head, Department of Space Systems Engineering (Kyushu Institute of Technology, Japan)
11:05	Hand over of Space travelled National Flag to Professor Vincent Chang
11:10	Speech by Professor Mohammad Tamim, Pro-VC, Brac University
11:15	Speech by Chief Guest, Dr. Shahjahan Mahmood, Chairman, Bangladesh Communication Satellite Company Limited (BCSCL)
11:30	Speech & closing remarks by Professor Vincent Chang, Vice-Chancellor, Brac University
12:00	Lunch break
14:00	Public Lecture 1: Lean Satellite; A new way of making and using a satellite-Dr. Mengu Cho
14:45	Public Lecture 2: Passion for Engineering? Make, Test and Launch Satellite- Dr. Arifur R Khan
15:30	Ending

PARTNERS

4BIW Day 2: BIRDS Member Presentations

November 26, 2019

Brac Center Inn, Dhaka, Bangladesh

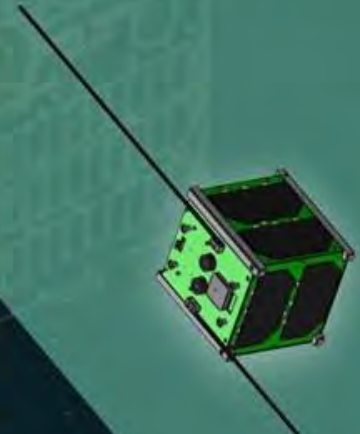
*Maya-3 and Maya-4 are based on the BIRDS-2 satellites, a constellation of satellites of Philippines (Maya-1), Bhutan (Bhutan-1), and Malaysia (UITMSat-1) developed under the BIRDS Project. The BIRDS Project is supported in part, by the JSPS Core-to-Core Program, B. Asia-Africa Science Platform.



Ms. Picar introduced the Philippines to the BIRDS members and enticed them for the 5th BIRDS workshop with snapshots of the beautiful landscapes and delicious food that the country has to offer. Ms. Picar also provided an overview of the STAMINA4Space Program and the importance of communication activities in R&D projects.



Engr. Constante provided an overview of the activities of the STeP-UP Project, a component project of the STAMINA4Space Program. Among the activities highlighted were the establishment of UNISEC-PH, the development of Maya-3 and Maya-4, and the establishment of the amateur satellite ground station network.



4BIW Day 3: BIRDS Network Meeting and Cultural Presentation

November 27, 2019

Brac Center Inn, Dhaka, Bangladesh

The morning and afternoon sessions involved presentations of the BIRDS Project (from BIRDS-1 to BIRDS-4) and discussions for the ground station operations and other future activities.

The day was capped off with wonderful cultural presentations prepared by the organizers and student organizations from BRAC University.



4BIW Day 4: Excursion

November 28, 2019



Brac Center for Development and Management (BCDM), Savar, Bangladesh



National Martyrs Memorial



Jatiya Sangsad Bhaban National Parliament House



Personal Notes From Meann and Ecka



Abdulla Hil Kafi

Mary Ann Constante

Ericka Picar

Raihana Shams Islam Antara

This is my first time to attend the BIRDS International Workshop and I enjoyed it a lot primarily because of the hospitality of the organizers and the BIRDS network members. I learned a lot from the presentations and discussions, but the lesson that I value the most is that the BIRDS network is a family, and that every member should treat every satellite of the BIRDS network as their own satellite. I wish every BIRDS member the best on their respective space activities, and I am looking forward to have you in the Philippines to return the kind gestures and warm treatment we received. I am also looking forward to the best coffee from Costa Rica! :D

-- Meann

The 4th BIRDS International Workshop is a wonderful eye-opener of Bangladesh's space tech progress and one of a kind culture. This workshop justifies the need of a frequent international gathering as this gives countries a rare opportunity to personally share academic and cultural knowledge with each other. The learnings provided by other delegates will certainly guide us on our development planning and we reciprocate this by sharing our own substantial technological advances as a developing space-faring country. This sets the tone for future workshops and we wish that we can replicate the success of this event in our own BIRDS International workshop!

-- Ecka



PJWWRAT

Philippines-Japan Workshop on Wireless, Radio and Antenna Technologies (PJWWRAT)

October 18-20 , 2019

NOVOTEL MANILA ARANETA CITY
Quezon City, Philippines

The Philippines-Japan Workshop on Wireless, Radio and Antenna Technologies (PJWWRAT) is the first workshop on Antenna, Propagation and Wireless Technologies between the Philippines and Japan. The theme of the PJWWRAT 2019 is "Bridging the research on antenna, propagation and wireless technologies between the Philippines and Japan". It is intended to provide a forum for exchanging information on the progress of research and development in antennas, propagation, RF/microwave and wireless communication systems. It is also an important objective of this workshop to enhance the friendship between Philippine and Japanese researchers.

Read more here: <https://asti.dost.gov.ph/events/pjwwrat-2019-manila>



PJWWRAT : Philippines-Japan Workshop on Wireless, Radio and Antenna Technologies (PJWWRAT)



Attendees of the first Philippines-Japan Workshop on Wireless, Radio and Antenna Technologies (PJWWRAT)

The PJWWRAT aims to provide a relevant platform for knowledge exchange in the fields of antennas, propagation, radio frequency or microwave, and wireless communication systems, focusing on enhancing mutual awareness between Filipino and Japanese researchers on scientific activities being undertaken in these fields towards fostering productive collaboration. This two-day workshop, with the theme “Bridging the Research on Antenna, Propagation and Wireless Technologies between the Philippines and Japan,” was attended by scientists, professors and students from universities and institutions in the Philippines and in Japan.



PJWWRAT : Philippines-Japan Workshop on Wireless, Radio and Antenna Technologies (PJWWRAT)

Best Oral Presentation



Coarse Sampling for Near Field Co-Planar Phase-less Measurement

Kusunose Kyosuke and Arai Hiroyuki (Electrical and Computer Engineering, Graduate School of Engineering, Yokohama National University, Yokohama, Japan)



TV White Space Availability in the Western Philippine Nautical Highway

Rizza T. Loquias (Electrical and Electronics Engineering Institute, UP Diliman) Calvin Artemies G. Hilario, Mar Francis D De Guzman, Joel Joseph S. Marciano, Jr. (Electrical and Electronics Engineering Institute, UP Diliman & Department of Science and Technology - Advanced Science and Technology Institute)

Best Poster Presentation



Estimation on Human Body Blockage Characteristics at 5G Frequency bands for Epidemiologic Research on RF Exposure and Adolescent Health

Ryusuke Ozaki and Takashi Hikage (Graduate School of Information Science and Technology, Hokkaido University, Japan) Manabu Omiya and Masahiko Mizuta (Information Initiative Center, Hokkaido University, Japan) Keiko Yamazaki, Atsuko Araki, Yuri Teraoka and Reiko Kishi (Center for Environmental and Health Sciences, Hokkaido University, Japan)



Development of an Off-Grid Decentralized Network using Low Power, Long Range Radios for Emergency Communications

Khazmir Camille Valerie G. Macaraeg (Wireless Communications Engineering Laboratory, Electrical and Electronics Engineering Institute, University of the Philippines, Diliman, Quezon City, Philippines) Calvin Artemies G. Hilario Charleston Dale Ambatali (Wireless Communications Engineering Laboratory, Electrical and Electronics Engineering Institute, University of the Philippines, Diliman, Quezon City, Philippines and Department of Science and Technology - Advanced Science and Technology Institute)



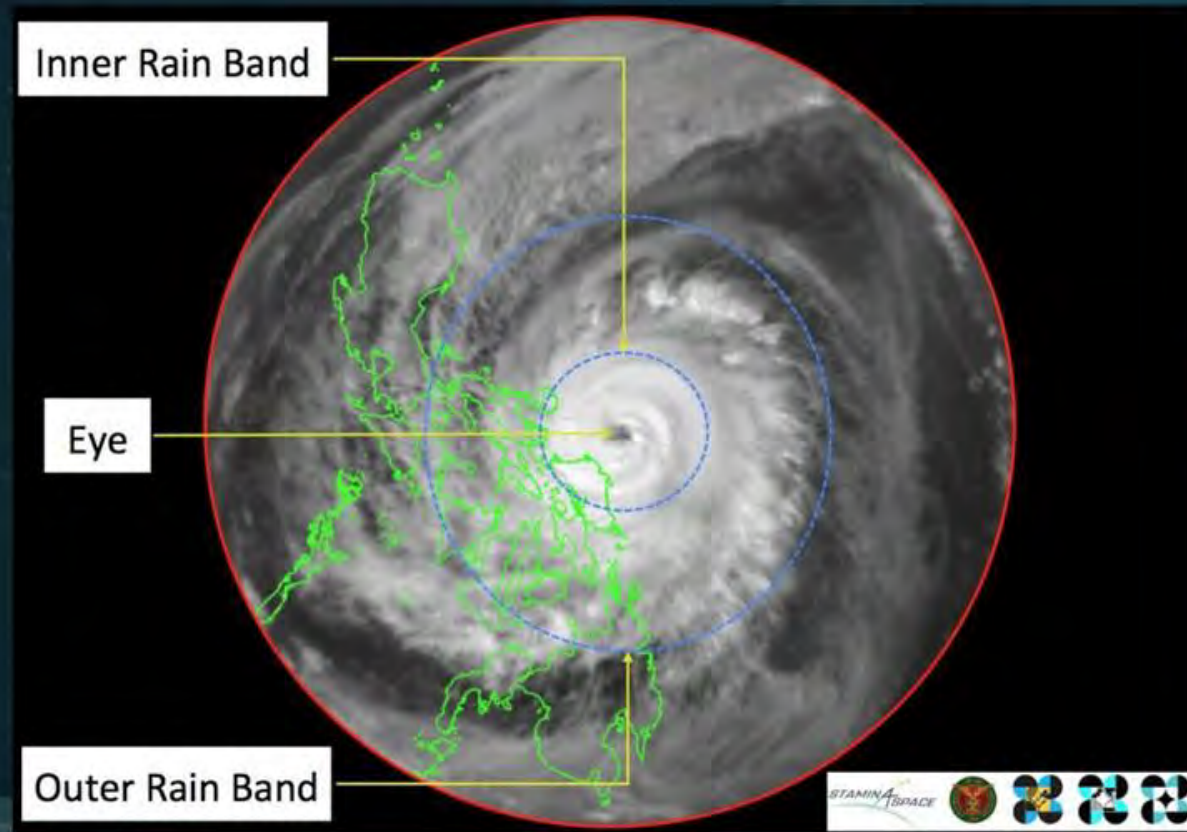
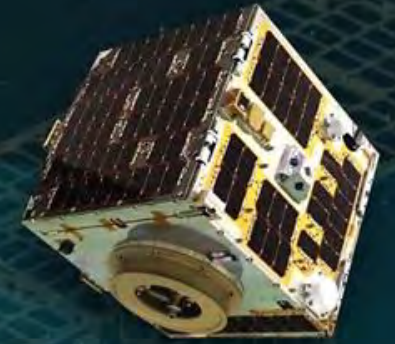
UAV-Mounted SAR Image Correction with Gyroscope Data and MAP Estimation

Ryan Joshua A. Maliwat (Wireless Communication Engineering Laboratory, Electrical and Electronics Engineering Institute, University of the Philippines, Diliman, Quezon City, Philippines)



Typhoon "Tisoy"

Diwata-2 takes more images of Typhoon Tisoy (Kammuri)



Diwata-2 captured images of the typhoon on December 2, 2019 from 12:58 to 1:00 p.m. when it was roughly 200 km away from Gubat, Sorsogon.

The Anatomy of Typhoon Tisoy. The Wide Field Camera (WFC) image of Typhoon Tisoy before it makes its landfall on Sorsogon. The image was acquired on December 2, 2019 from 12:58:46 to 13:00:52 PHT

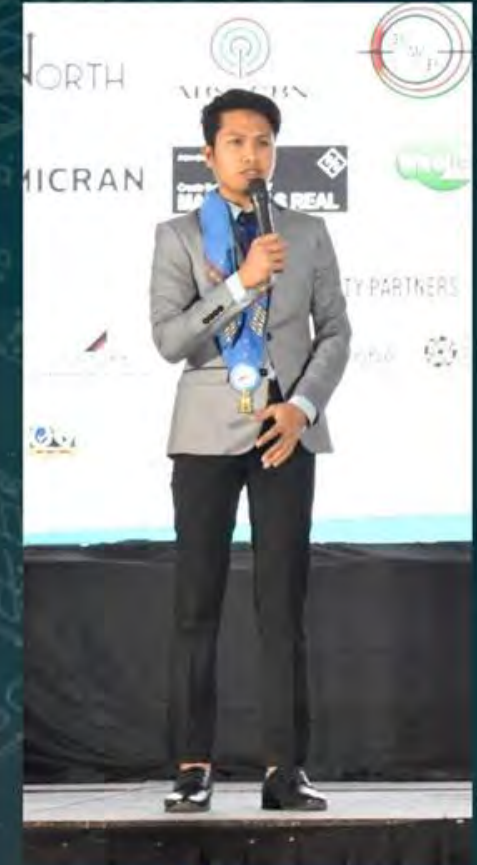
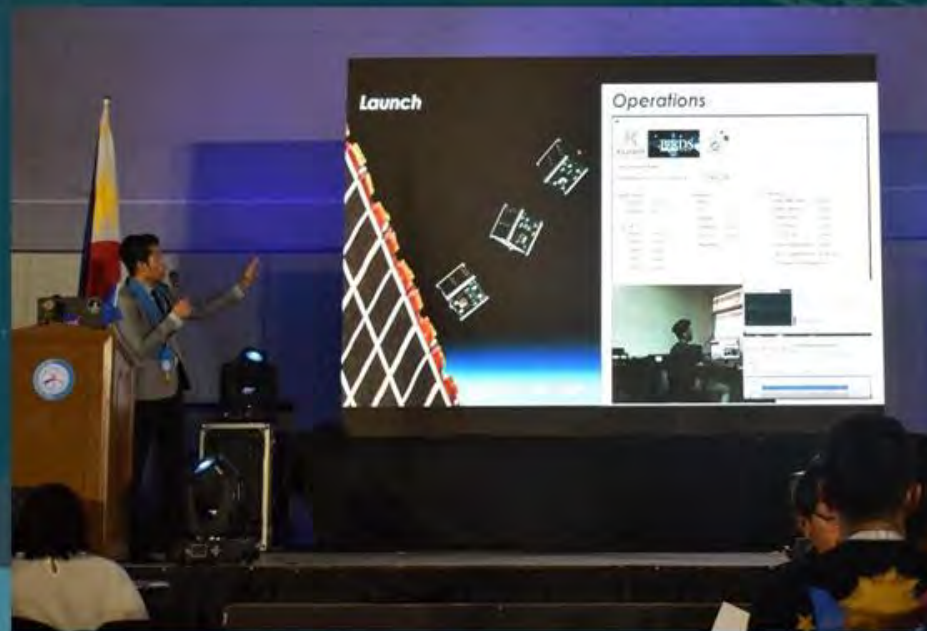


IECEP 69th Annual General Membership Meeting

SATELLITES: Systems & Technologies

November 28-30, 2019

ABS-CBN Vertis Tent, North Avenue, Quezon City



Engr. Jeric Brioso, one of the STAMINA4Space research engineers, gave a presentation during the Institute of Electronics Engineers of the Philippines – IECEP 69th General Membership Meeting. Engr. Brioso's talk was entitled " Satellites: Systems and Technologies," which featured the activities of the PHL-Microsat and STAMINA4Space Program. The event was attended by more than 1000 participants from all over the country.



7th UNISEC Global Meeting

UNISEC-PH acknowledged as local chapter

November 30-December 3, 2019

Tokyo, Japan

The University Space Engineering Consortium (UNISEC) Global aims to create a world where university students can participate in practical space projects in more than 100 countries by the end of 2020. With the Philippines recognized as a local chapter as of June 2019, we can now better promote local expertise and technology on space science and technology application among higher education institutions across the country and pursue collaborative space activities locally and internationally.



STeP-UP Project Leader Engr. Paul Jason Co provided a short presentation on the space proliferation activities in the Philippines. On this photo, he was presenting the establishment of UNISEC-Philippines. //

Photo from UNISEC-Global



This certificate was received by STAMINA4Space / PHL-Microsat STeP-UP Project Leader, Engr. Paul Jason Co, during the 7th UNISEC-Global Meeting held on November 30-December 3, 2019 in Tokyo, Japan.



Engr. Co also received the acknowledgement for the establishment of UNISEC-Philippines as a local chapter of UNISEC-Global. //

Photo from UNISEC-Global



Updates from STEP-UP

s c h o l a r s

"The eight step..."

December 12, 2019

University of the Philippines- Diliman
Quezon City, Philippines

Prepared by STeP-UP scholars

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Contributing Writer

Marielle M. Gregorio
Contributing Writer

The Step-Up scholars were featured in an online news article last December 2, 2019.

They were tagged as the "Future of Philippine Space Exploration."

For more information regarding the article you may visit shorturl.at/ajCDT.

Meet the future of Philippine space exploration

Kristine Sabillo, ABS-CBN News

Posted at Dec 02 2019 10:05 PM | Updated as of Dec 02 2019 11:52 PM



In one of the buildings of the University of the Philippines' science complex, a team of young

more powerful, can take meaningful missions, experiments in space.

Marciano said it can be likened to cellphones that are small but are now able to take videos, other data.

"We expect these platforms (satellites) to evolve," he says.

Marciano said they chose a university setting for their team because of practical reasons - existing graduate program, among others - and the fact that "all the creative ideas, all the enthusiastic hardworking people are there."

"You just need to guide and mentor them. Give them a lot of resources," he said.



END OF THE REPORT FROM THE PHILIPPINES

7th UNISEC-Global Meeting

BIRDS Project of the Perspective from Japanese Students

Makiko Kishimoto

Laboratory of Spacecraft Environment Interaction Engineering

Kyushu Institute of Technology, Japan (Kyutech)

December 3, 2019

Self Introduction

- Name: Makiko Kishimoto
- Nationality: **Japan**
- Affiliation:
Kyushu Institute of Technology
- Grade: 1st year of Master course
- Hobby: Karaoke, Anime..

- My main project:
BIRDS-3 Project from October, 2017
(My responsibilities are: Antenna design and Ground Station.)



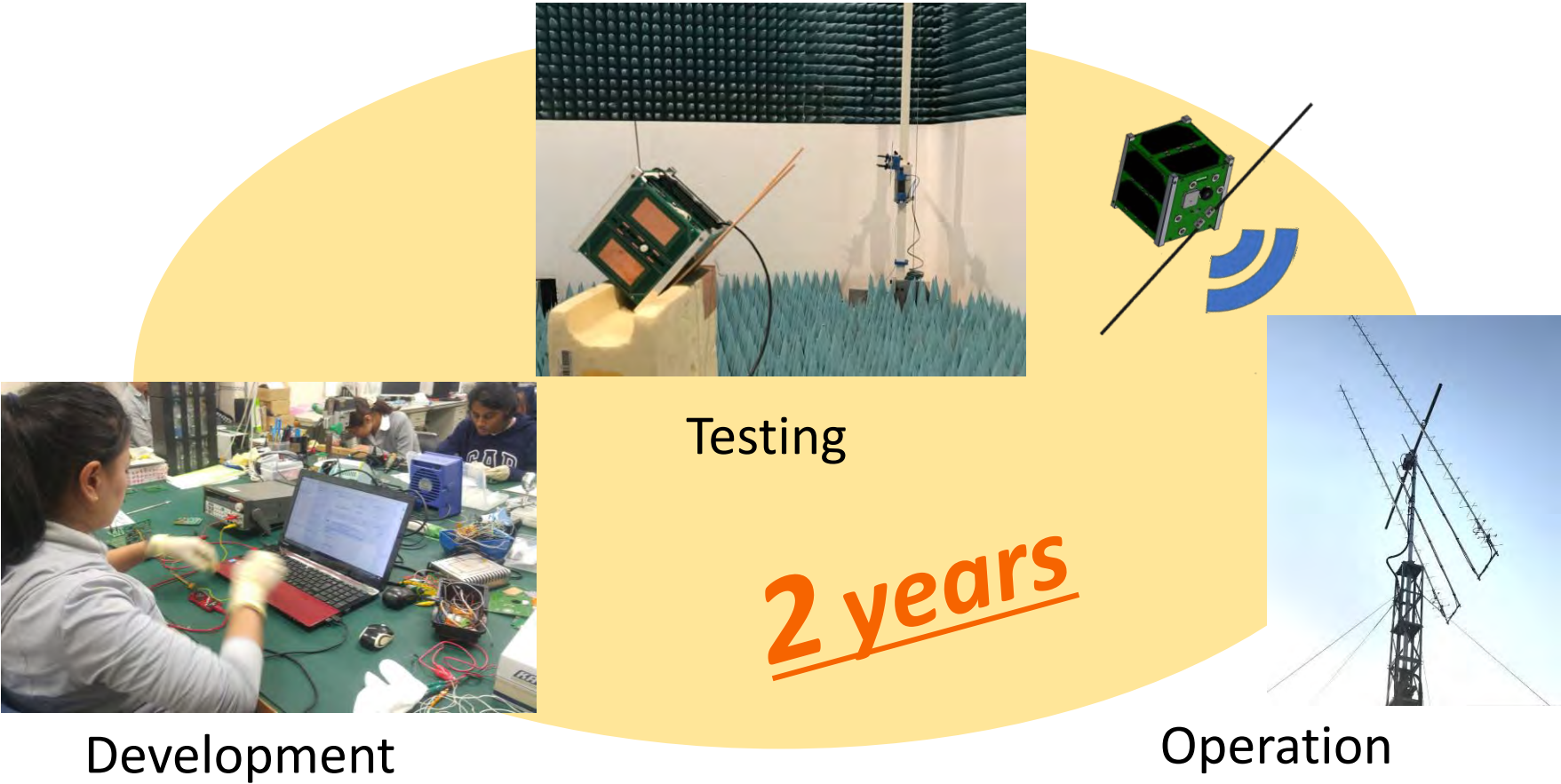
BIRDS project of the perspective from Japanese students

- The first thing is..
- The story that my English skills improved, and why that happened

What do you think the second one is?

BIRDS Project

- Satellite project for non-space faring countries, from start to end



BIRDS Participating Countries

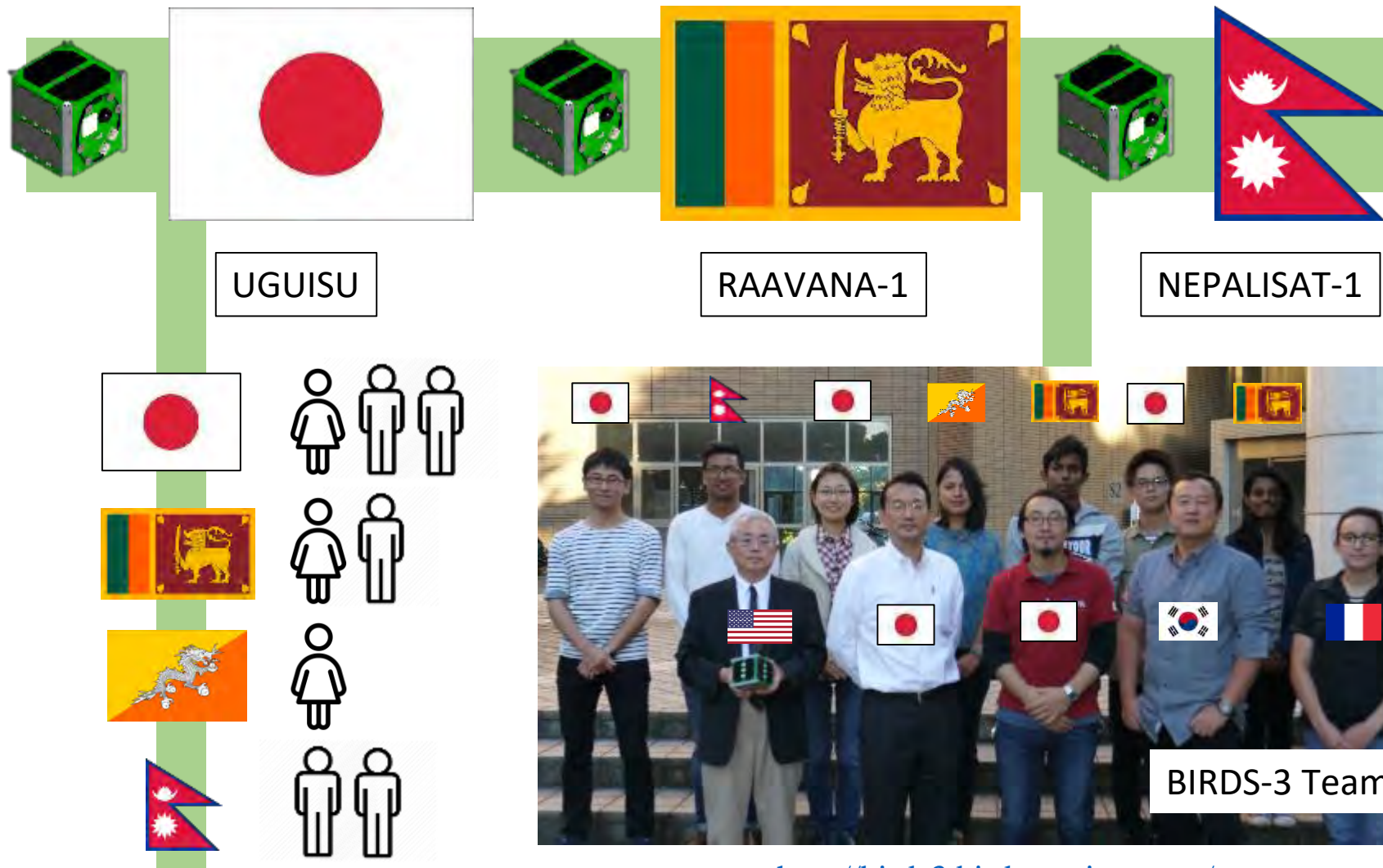
11 countries



BIRDS	Participating Countries
BIRDS-1	JAPAN, BANGLADESH*, GHANA*, MONGOLIA*, NIGERIA
BIRDS-2	JAPAN, BHUTAN*, MALAYSIA, PHILIPPINES
BIRDS-3	JAPAN, SRI LANKA*, NEPAL*
BIRDS-4	JAPAN, PARAGUAY*, PHILIPPINES

*** BIRDS was the first satellite ever for this country**

BIRDS-3 Project



<http://birds3.birds-project.com/>

Main Features of Japanese university students

Have a resistance to communicate with international students.

- Can understand only few percent of the conversation in English.
- Don't like to speak English.



Difficult to understand what they said.

- **First 2 months..**
- I could understand only **3%** in the project meeting.

**Kickoff
meeting of
the BIRDS-3
Project**



Start Project (2017.10)

BIRDS Project Newsletter – No. 47

Page 90 of 225

Difficult to understand what they said.

- **First 2 months..**
- I could understand only **3%** in the project meeting.



First Potluck dinner with BIRDS-3 members (2017.11)

BIRDS Project Newsletter – No. 47

Difficult to understand what they said.

- **First 2 months..**
- I could understand only **3%** in the project meeting.



MDR: Mission Definition Review (2017.12)

BIRDS Project Newsletter – No. 47

Difficult to understand what they said.

- **First 2 months..**
- I could understand only **3%** in the project meeting.

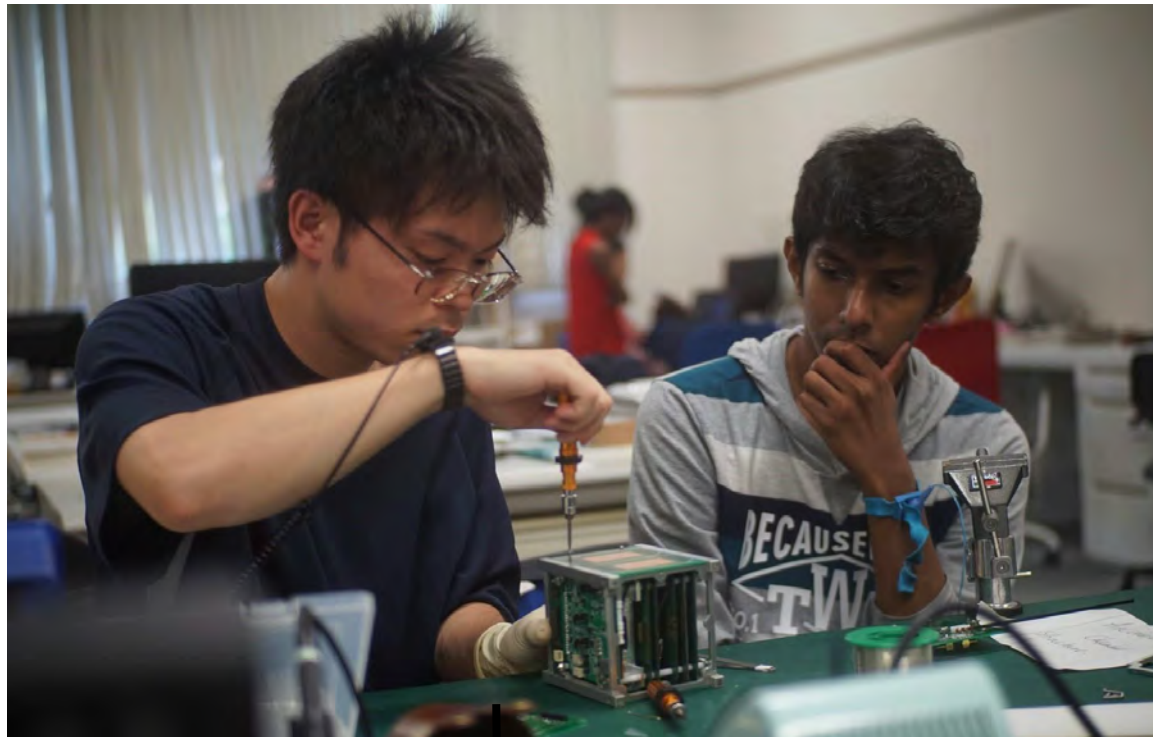


All BIRDS members meeting (2018.07)

BIRDS Project Newsletter – No. 47

Difficult to understand what they said.

- **First 2 months..**
- I could understand only **3%** in the project meeting.



Assembling Structure for EM (2018.08)

BIRDS Project Newsletter – No. 47

Difficult to understand what they said.

- **First 2 months..**
- I could understand only **3%** in the project meeting.



CDR: Critical Design Review (2018.09)

BIRDS Project Newsletter – No. 47

Difficult to understand what they said.

- **First 2 months..**
- I could understand only **3%** in the project meeting.



BIRDS-3 Trip in Nagasaki (2018.09)

BIRDS Project Newsletter – No. 47

Difficult to understand what they said.

- **First 2 months..**
- I could understand only **3%** in the project meeting.



Working on the FM in Clean Room (2018.12)

BIRDS Project Newsletter – No. 47

Page 97 of 225

Difficult to understand what they said.

- **First 2 months..**
- I could understand only **3%** in the project meeting.

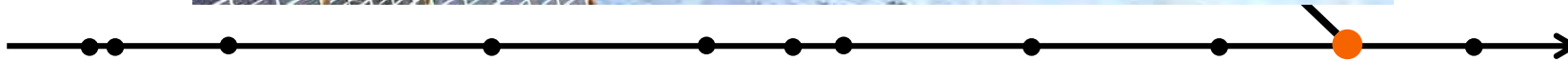


Completed the Satellites (2019.02)

BIRDS Project Newsletter – No. 47

Difficult to understand what they said.

- **First 2 months..**
- I could understand only **3%** in the project meeting.



Release Satellites from the ISS (2019.06)

BIRDS Project Newsletter – No. 47

Difficult to understand what they said.

- **First 2 months..**
- I could understand only **3%** in the project meeting.



Picture taken by BIRDS-3 Satellite (2019.06 ~)

BIRDS Project Newsletter – No. 47

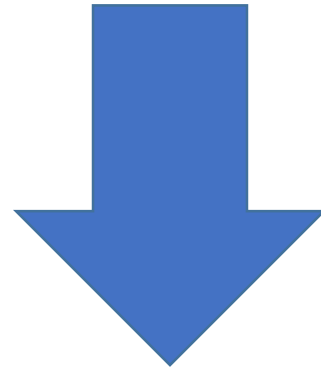
Difficult to understand what they said.

- **First 2 months..**
- I could understand only **3%** in the project meeting.

Meetings

Presentations

Lab work



Eat meals together

Work hard together

Travel together

Now..

I can understand **95%** in project meetings

The reasons why my English improved

We had potluck meals every month.
We talked about..

- Countries
- Cultures
- Food/cooking
- Ideas
- Feelings

.....

BIRDS-3 team is like
my big family!!



One afternoon.....



- Our BIRDS project is a national project for us.

We cannot fail ! ! !

BIRDS-3 Project Manager

The result of this project is important

- It is the first satellite for two countries.

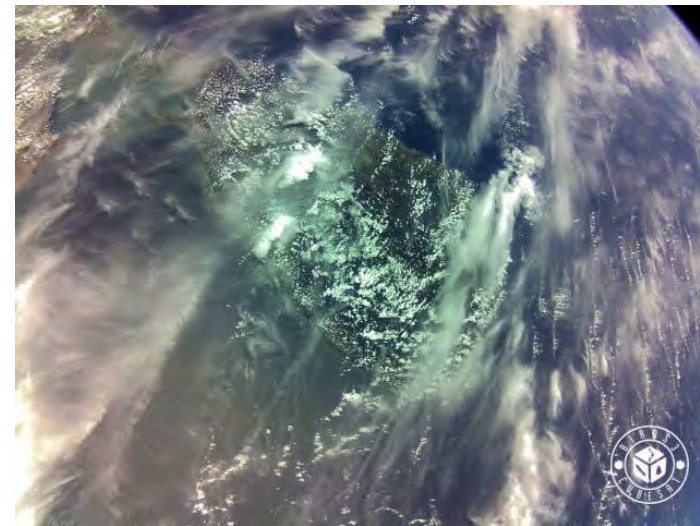


- The result of this project greatly influences the future space development of their countries.

BIRDS	Participating Countries
BIRDS-1	JAPAN, <i>BANGLADESH*</i> , <i>GHANA*</i> , <i>MONGOLIA*</i> , NIGERIA
BIRDS-2	JAPAN, <i>BHUTAN*</i> , MALAYSIA, PHILIPPINES
BIRDS-3	JAPAN, <i>SRI LANKA*</i> , <i>NEPAL*</i>
BIRDS-4	JAPAN, <i>PARAGUAY*</i> , PHILIPPINES

** BIRDS was their first satellite in space*

Pictures of Sri Lanka taken by their first satellite

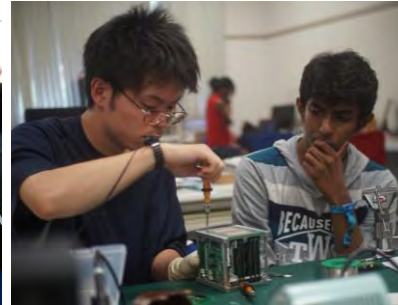


We are making history!!

BIRDS Project for Japanese students...

Thank you for listening!!

- The international exchange experience in Japan!



The historical events built by ourselves.



First satellite for them!!



**End of this
presentation
file**

* from JAXA Web site

BIRDS-4 Flight Model Preparations



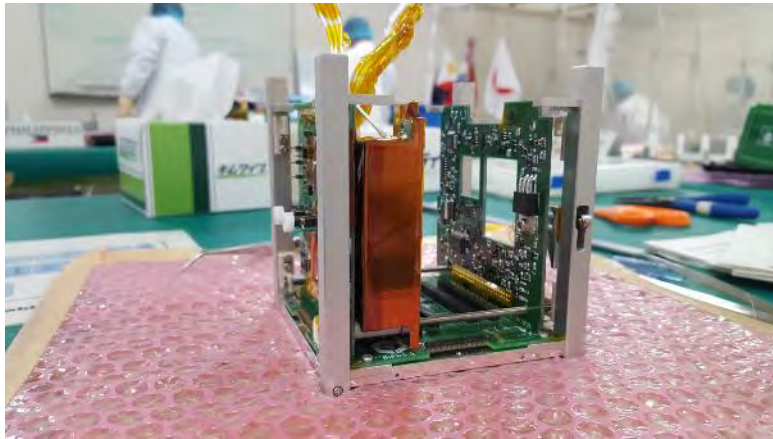
Hoda El-Megharbel
10 December, 2019



Flight Model Assembly

Written By: Hoda Awny El-Megharbel

During 4th BIRDS Workshop in Bangladesh (25-28 November 2019), BIRDS-4 reported about their latest progress and expected delivery dates of boards, in addition to the issues and tests to be completed. The team is planning to conduct the space environment and communication tests during December in order to start Long Duration test until satellite delivery dates.



TSURU, Japanese CubeSat during the assembly sessions (December 4)

BIRD-4 team members have started receiving Flight Model (FM) boards and are working on assembly, testing and integrating the boards of the three CubeSats.



FM Boards and the structure of GuaraniSat-1, Paraguay's CubeSat (December 2)



Backplane board and the structure of Maya-2, the Philippine's CubeSat (November 30)

Flight Model Assembly

Written By: Hoda Awny El-Megharbel



*Attachment of solar cells, Marloun Sejera
(November 27)*



*Solar Cell Testing, Hari Ram Shrestha
(November 28)*



*BIRDS-4 members in the clean room: Yigit
Cay, Timothy Leong, Mark Angelo Purio
(December 4)*

End of this BIRDS-4 FM assembly update

14. Presentation at 4BIW by UiTM of Malaysia



اَوْنُوْرَسِيْتِي تِكْنُوْلُوْجِي مَارَا
UNIVERSITI
TEKNOLOGI
MARA

**The following item was presented
at 4BIW (*4th BIRDS Int'l Workshop*)
by Dr Huzaimy.**



**His original PowerPoint file had 33 pages.
However, it has been edited for presentation
in this newsletter.**



اوپو تكنولوجي مارا
UNIVERSITI
TEKNOLOGI
MARA



UiTMSAT-1 as Catalyst for Indigenous Space Program in Malaysia

Mohamad Huzaimy Jusoh

Center for Satellite Communication

Faculty of Electrical Engineering, Universiti Teknologi MARA
(UiTM), Malaysia

© Astronaut
Alexander Gerst

CENTRE FOR SATELLITE COMMUNICATION

- UiTMSAT: Launched on 18th August 2017.

Objectives

1. To develop capacity and research in satellite technology and space science for national development.
2. To be a national hub for research in satellite technology and related areas.
3. To provide consultancy services and training as well as create partnerships with industries



CENTRE FOR SATELLITE COMMUNICATION



Assoc. Prof. Ts. Dr. Juliana Johari

Patron

Dean of FKE, UiTM



Assoc. Prof. Ir. Ts. Dr. Mohamad Huzaimy Jusoh

Director



Ir Azrif Manut

Coordinator Operation



AP. Dr. Norsuzila

Yaacob

Deputy Director



Ms. Syazana
Basyirah M. Zaki

Technical Research



Mr. Hasif Azami

Technical Research



Ts. Fatimah
Zaharah Ali

Technical Research

CONSTITUENT / ASSOCIATED TEAMS



SPACE CREW



UNISAT-JR



SISWASAT (CANSAT)

SPACE CREW

Undergraduate Students of Faculty of
Electrical Engineering



UNISAT-JR

Final Years Project Students



SISWASAT

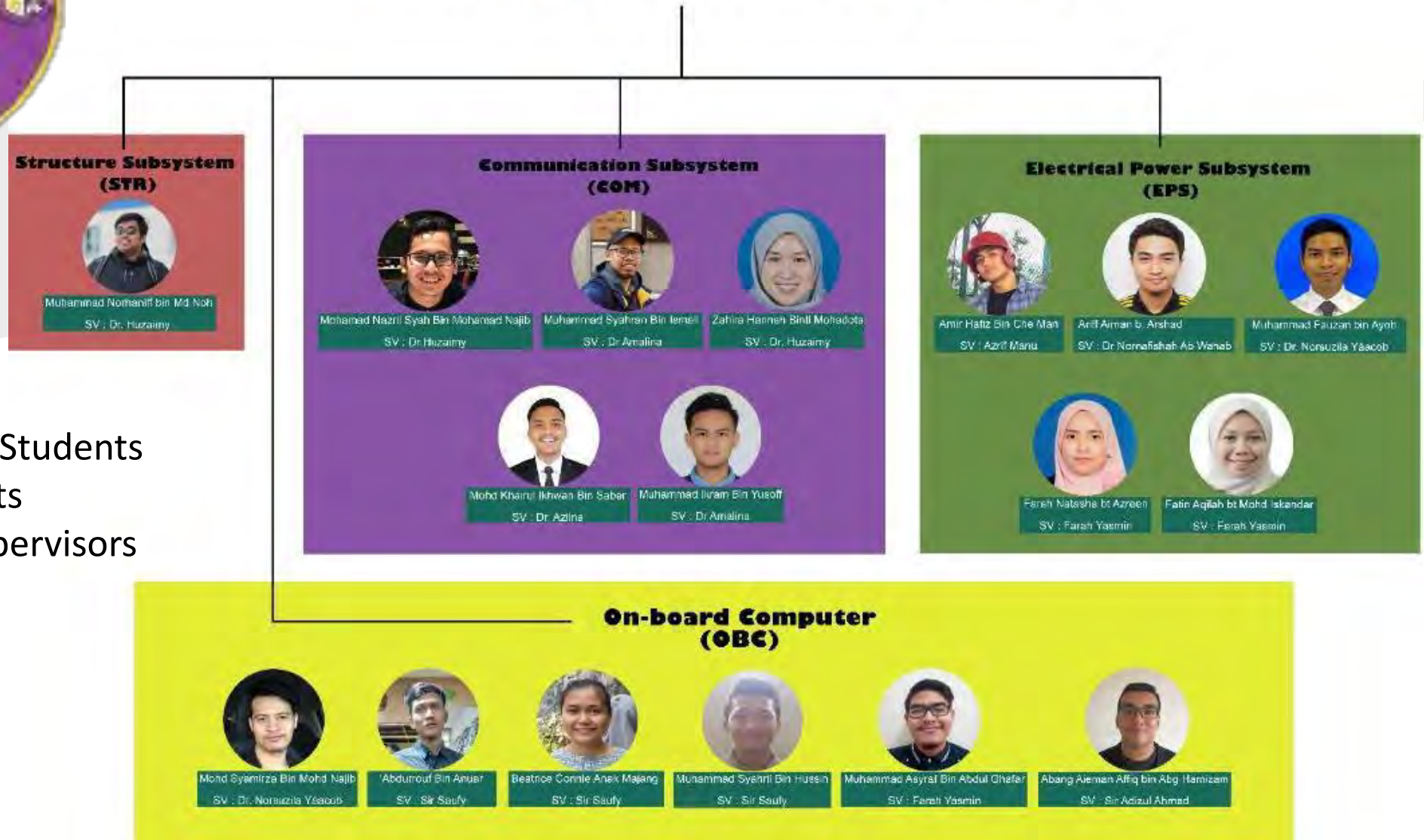
NATIONAL CANSAT COMPETITION





UNISAT-Jr

UNISAT-JR ORGANISATION CHART



Final Year Project Students
18 Students
7 Lecturers as Supervisors



SISWASAT

UiTM SISWASAT has won first place in National SiswaSat Competition 2019. The team has developed cansat with camera payload.



BIRDS Project Newsletter – No. 47



OUTREACH ACTIVITIES - INTERNATIONAL



Nanosatellite UiTMSAT-2 Mission Idea Symposium, 2018 Kyushu Institute of Technology (KYUTECH), Japan

Students presented mission idea to BIRDS team in acquiring knowledge and experience expansion in satellite project. They were invited to visit the Centre for Satellite Testing in Japan.

Mission Idea Proposal UiTM-NTU Nanosatellite Collaboration Project Nanyang Technological University (NTU), Singapore

Students presented MDR to NTU students for collaboration seeking in satellite project. Ideas was shared and discussion was conducted during the UiTM-NTU meeting.

OUTREACH ACTIVITIES - Local



Malacca International Trade Science 2019, Malaysia

UiTMSAT was invited to do satellite exhibition in the event to share about UiTMSAT-1 1U satellite to public



UiTM Innovation Festival (UIF) 2019, Malaysia

UiTMSAT was one of the main booth in this exhibition event where many institutions from government and private were among the visitors.

OUTREACH ACTIVITIES - LOCAL



Exhibition at Foundation Centre UiTM Dengkil, Malaysia

UiTMSAT was invited by UiTM Dengkil to do the exhibition to share about the launched UiTMSAT-1 satellite



Petrosains' Science Festival Kuala Lumpur, Malaysia

Students involved in this event where they grasped the experiences in entertaining the public who keen in knowing about UiTMSAT

OUTREACH ACTIVITIES - LOCAL



Visitor from International Islamic University Malaysia

IIUM visited UiTMSAT in UiTM to learn about the UiTMSAT-1 and to be exposed with the development and the team.



Visitor from B. S. Abdur Rahman Crescent Institute of Science and Technology, India to UiTMSAT

Students from Crescent visited UiTMSAT to learn about the development of UiTMSAT-1 while seeking a collaboration opportunity with UiTM in satellite project

OUTREACH ACTIVITIES



Space Symposium at Stadium Indera Mulia, Perak, Malaysia

UiTM as first university who launched satellite was invited to give a talk on New Space's Challenge and Opportunity



Talk by UiTMSAT-1, Secondary Schools (BESTARI and Seksyen 7), Malaysia

Sharing session by UiTMSAT team to secondary school students in Selangor, Malaysia

OUTREACH ACTIVITIES



Nanosatellite training for lecturers of University of Perpetual Help System DALTA (UPHSD), Philippines

This training was conducted for UPHSD's representatives to prepare a proposal for satellite project development between Malaysia, Thailand, and Philippines.



University Space Engineering Consortium (UNISEC) Periodic Meeting

UNISEC was form by delegates from UiTM, USM, UPM, and IIUM

OUTREACH ACTIVITIES (Future)



Meeting with Dean of UPHSD and Representative from Pensmith STEM International School for Satellite Project

A meeting between the stakeholders of satellite project was conducted in order to discuss more on the proposed satellite project for geothermal detection

An International Mobility Program to Kyutech, Japan, to be held in Jan 2020

Another mobility program of Space Crew member to present the updates and mission ideas to BIRDS members in Kyutech in intention of getting new knowledge and ideas exchange.

INDUSTRY-ACADEMIA LINKAGES



Meeting with Beijing Giant Weather Co. Ltd. at UiTM

A meeting between UiTM and potential investor for satellite data project



Meeting with Microchip Technology Singapore Pte Ltd

The company is seeking an opportunity to supply related devices and components especially for signal processing on OBC for space-borne project.

IMPACTS ON THE CONDUCTED ACTIVITIES

Attracting the interest of
public in space
industry/technology

Enhancing the visibility of
the institution

Awareness on space
technology and satellite
system

ULTIMATE IMPACTS :

- Recognition from higher level of ministry management/government officers.
- Access to space industry.

RECOGNITION FROM GOVERNMENT

UiTM is recognized and the center (UiTMSAT) has been appointed as part of technical committee on National Satellite Projects



Meeting with Chief Secretary to the Government of Malaysia at State Government Office, Putrajaya

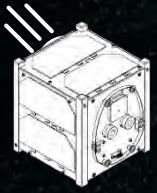
Another project of satellite for surveillance system which is under on-going discussion



Liked by [dato_azrulvr4](#) and others
drismailbakar Held a meeting with Assoc. Prof. Ir. Ts. Dr. Mohamad Huzaimy Jusoh, Director of Center for Satellite Communication pertaining UiTMSAT-1: A Step Forward for Indigenous Space Program in Malaysia. This program will enhance Malaysian Universities, particularly UiTM at the international level, in the field of space science. It would also introduce Malaysia to the world with international networking and collaboration. #UiTM #satellite #indigenousSpaceProgram #ksn #drismailbakar

Meeting with teams appointed by Ministry of Energy, Science, Technology, Environment & Climate Change (MESTECC) for National Remote Sensing Satellite Project

The team is formed with appointment made by MESTECC (Ministry of Science, technology, Environment and Climate Change)



Thank You

Mohamad Huzaimy Jusoh



huzaimy@uitm.edu.my /
huzaimy_uitm@yahoo.com



© Astronaut
Alexander Gerst

15. 7th UNISEC-Global Meeting in Tokyo, Japan





DAY 1: 30 Nov 2019

7th UNISEC-Global Meeting

MESSAGE FROM SECRETARY GENERAL



Rei Kawashima

Welcome to the 7th UNISEC-Global Meeting in Tokyo Japan 2019. At first, I would like to express my sincere gratitude to Institute for Open Innovation, the University of Tokyo for providing generous support for this meeting. In addition, I must emphasize here that we have received useful and meaningful assistance from the Prof. Nakasuka and Prof. Funase Laboratory, and also from the Tateishi Science and Technology Foundation of Kyoto.

Now, it has been 17 years since the establishment of UNISEC in Japan in 2002. At that time, few people believed that university students could build satellites by themselves. And there were many skeptics about the sustainability of a university consortium for space engineering. However, today we see that university students design, build, test, and operate satellites in many corners of the globe. The call for new UNISEC local chapters is being heard in the same corners, and so we are growing year after year.

Some universities have made mounting progress in dealing with making not only near-earth satellites, but also deep space probes. On the other hand, there are those universities who have just started making it or are still at the stage to make kick-off plans. UNISEC-Global recognizes such gaps with concern.

Today we have a global boom of university satellites, big and small, of growing sophistication. We can safely say that they are contributing to the SDGs of the United Nations. These satellites are mitigating the damage from natural disasters and are addressing other world-level issues. Their societal contributions multiply when more and more satellites are deployed as constellations.

I think that we should secure healthy and robust satellite development at the university level, and for this purpose, it is important to pay attention to diversity, to gender equality, and to economic handicaps, of the participants. We should bear in mind that "no one should be left behind." Finally I want to share with you my favorite African proverb: "If you want to go faster, go alone. If you want to go further, go together."

Rei Kawashima





Registration
(8am-9am)



Kyutech booth

2019.11.30



2019.11.30



Mock-up of BIRDS-3

2019.11.30

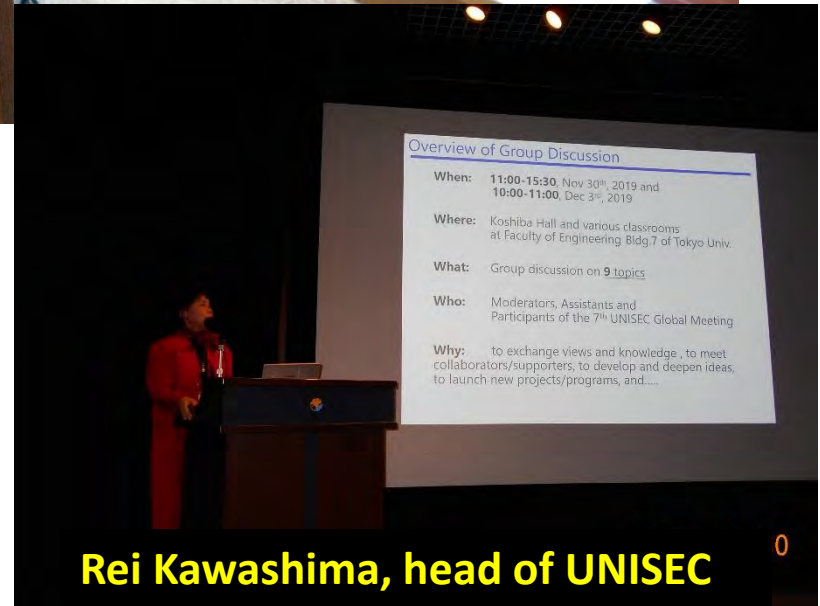




Prof. Nakasuka, giving key note address



Dr. Loren Chang

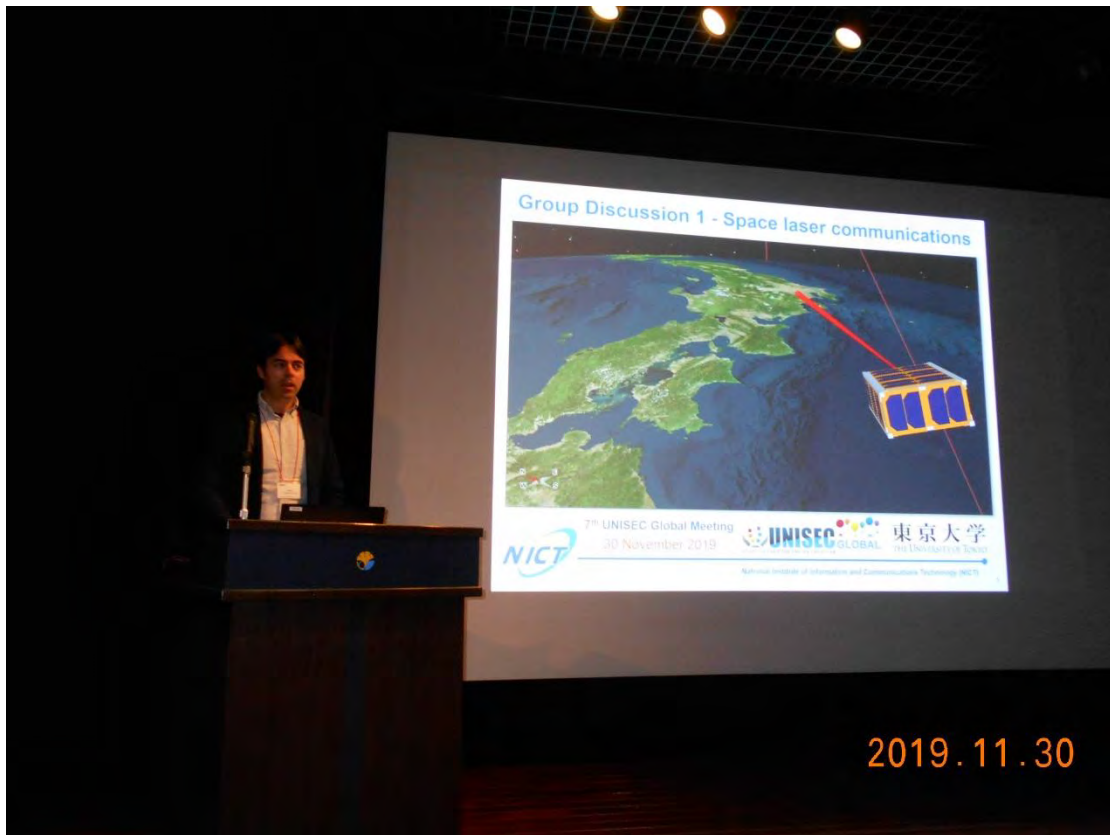


Rei Kawashima, head of UNISEC

11:00-12:00	Group Discussion Overview	Rei Kawashima , UNISEC-Global
	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 3: Deep Space Exploration Mission with CubeSats	Masahiro Fujiwara , the University of Tokyo
11:00-12:00	Group 4: Business Development of HEPTA-Sat	Masahiko Yamazaki , Nihon University and Michael Siddall , the University of South Australia
	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
	Group 7: How can space technology contribute to improving the accuracy of prediction for natural disasters?	Quentin Verspieren , the University of Tokyo
	Group 8: Commercialization of ISS - How to keep the ISS sustainable by promoting private sectors' involvement	Mac Kanazawa , Space BD, Inc. and Hilde Stenuit , Space Applications Services
	Group 9: Global Space Job Fair	Bernd Weiss , Space Job Fair

CubeSat Interface

**There were nine
discussion groups,
one of them was
led by Kyutech**

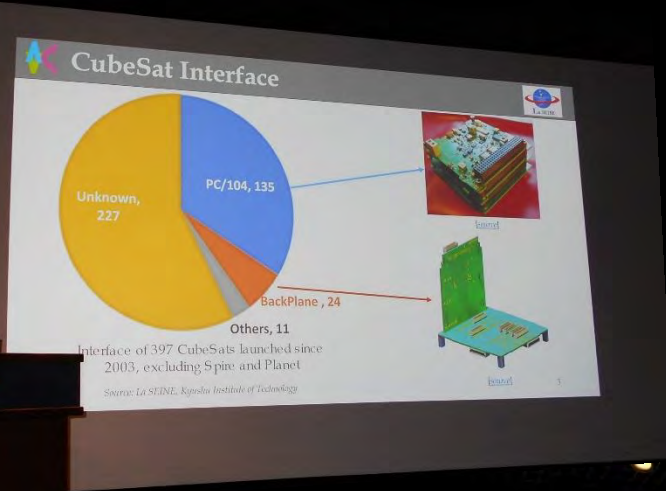


Brief description by Discussion Group 1



Brief description by Discussion Group 2

Marloun explains his discussion group (#2)



CubeSat Interface: PC/104

- Integration of boards from multiple suppliers may have compatibility issues
- Customers tend to buy boards from single supplier

CubeSat Interface: Backplane approach

- Mission and subsystem boards are attached on a backplane using 50 pin connectors

2019.11.30

CubeSat Interface Trade-offs

PC/104	Backplane
Difficult to disassemble	Easy to assemble/disassemble
Too much flexible with 104 pins	Not too much flexible with 50 pins
Widely used	Comparably new approach

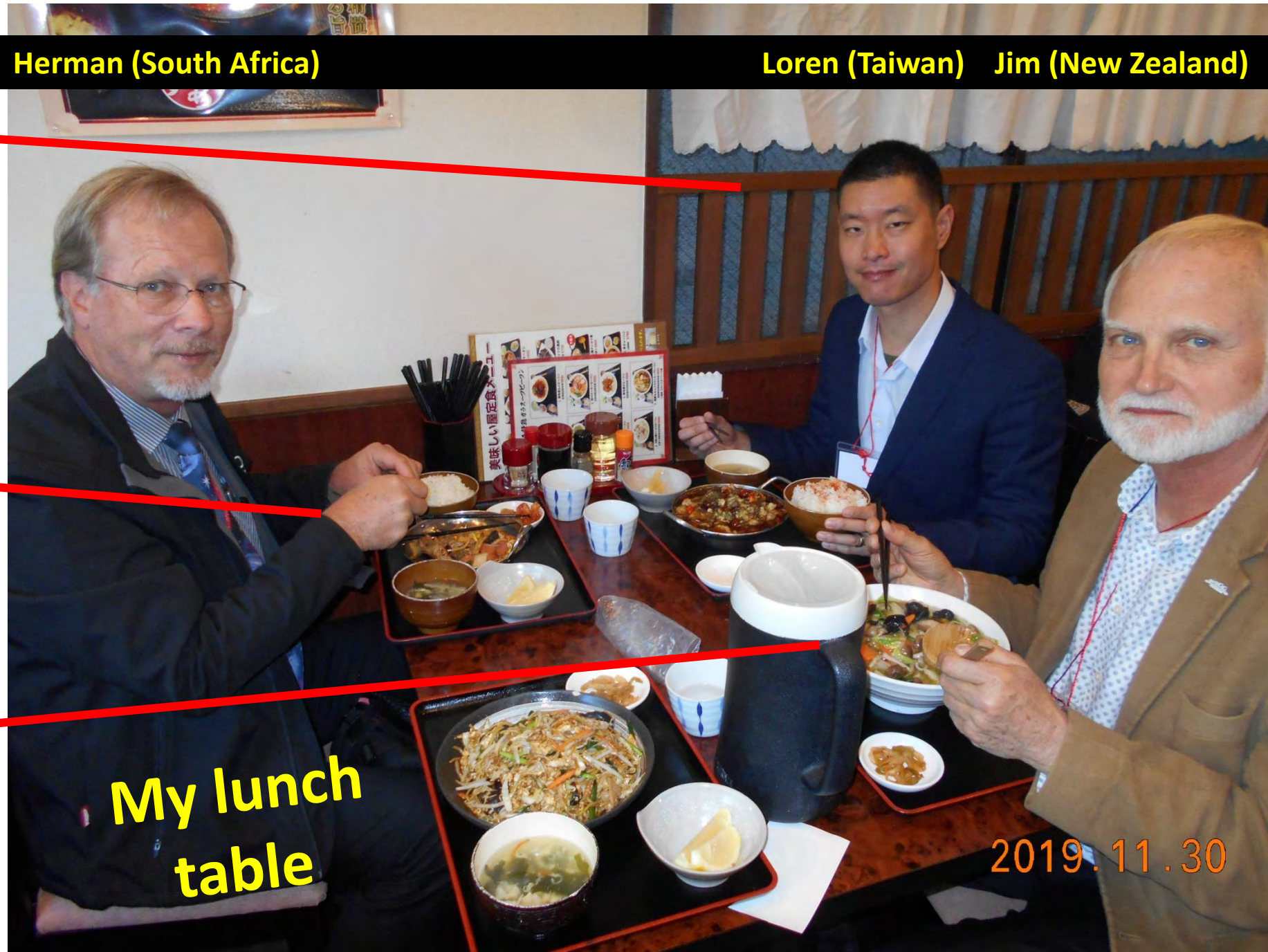
2019.11.30



DISCUSSION **GROUP 2** GOES TO LUNCH

Herman (South Africa)

Loren (Taiwan) Jim (New Zealand)



My lunch table

2019.11.30



Group 2 Discussion

13:50 – 15:20

← GM discusses “Kyutech and Capacity Building”



Prof. Nakasuka leads the panel discussion til 6:30 PM



BIRDS-I (2015-2017)

JAPAN SPAIN MONGOLIA NICARAGUA BANGLADESH THAILAND TAIWAN

This is our track record with BIRDS satellites

BIRDS-II (2016-2018)

BRITAIN MALAYSIA PHILIPPINES

BIRDS-III (2017-2019)

JAPAN SWITZERLAND NEPAL

Kyutech



ISSL | Intelligent Satellite Systems Laboratory
The University of Tokyo

Questions

- Required specifications for satellite observation for predicting floods and drought
 - What kind of information is important?
 - Ground information vs Weather forecasting information
 - Spatial resolution?
 - Time resolution?
 - Latency of the obtained data before downlink?
- Micro/nano/pico-satellite and/or their constellation can contribute to solving the problem?
 - The required functions can be realized by miniature satellite?
 - How many satellites required?
- Other methods?
 - Storing information from ground (Store & Forward)?

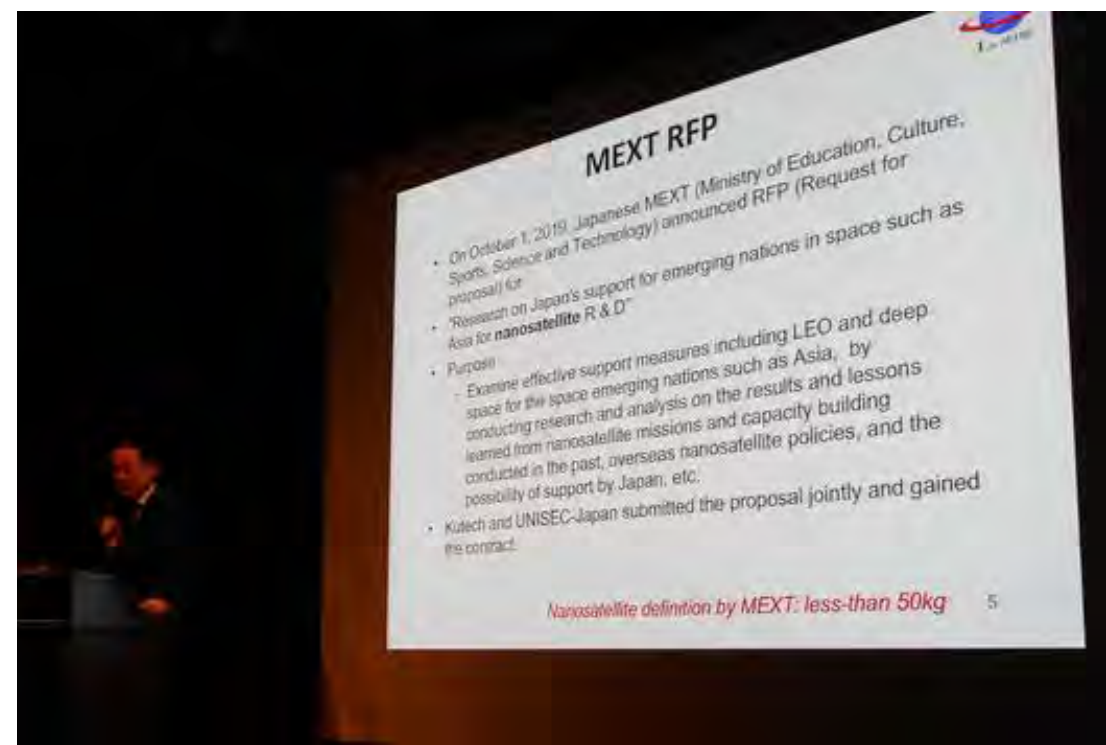
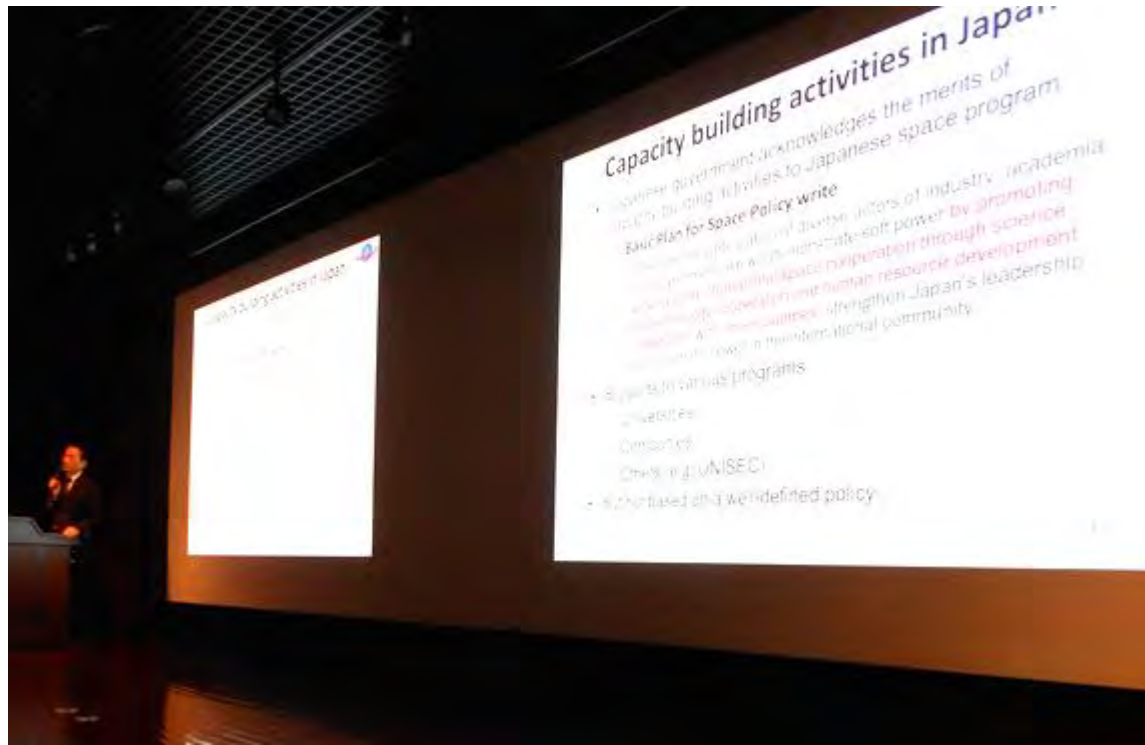
2019.11.30

Kyutech and Capacity Building

Assistant Professor George Maeda
Laboratory of Spacecraft Environment Interaction Engineering (“LaSEINE”),
Kyushu Institute of Technology (“Kyutech”), Kitakyushu, Japan.
宇宙環境技術ラボラトリー、九州工業大学、北九州。

Presented at UNIGLO-7 Meeting in Tokyo
30 November 2019

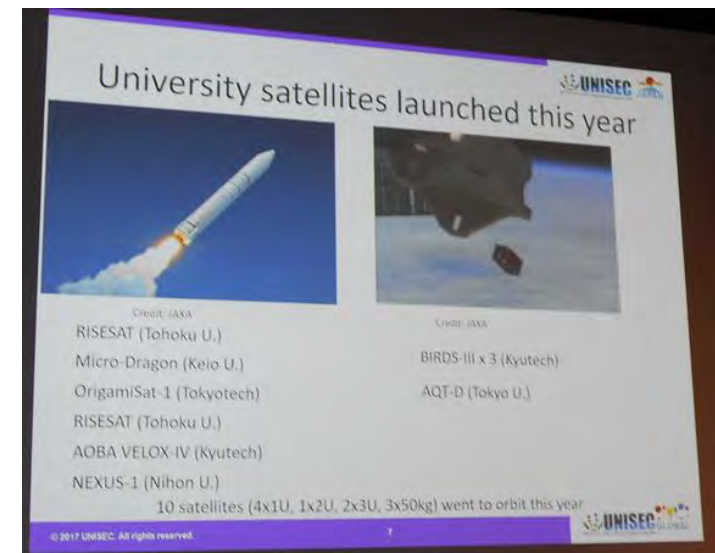
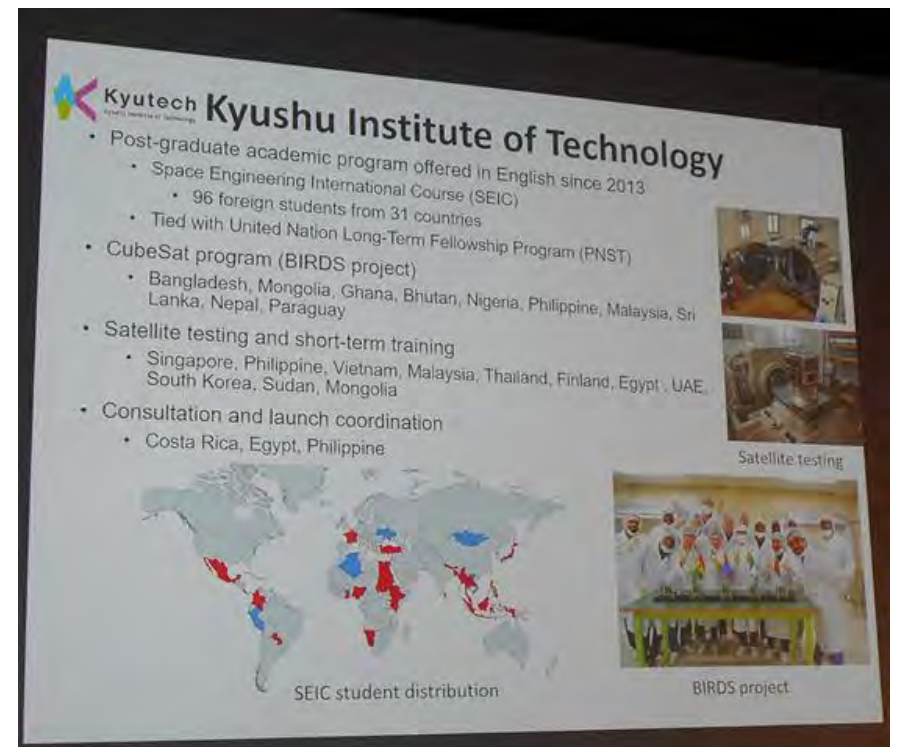




Prof Cho goes over the **MEXT Capacity Building Survey** that is due in March of 2020.



Prof. Fabio Santoni (Univ. of Rome) reports on the activities of UNISEC-Global in Italy during 10am thru 10:10am on 01 Dec. 2019.



Prof. M. Cho reports on the activities of UNISEC-Japan during 10:10am thru 10:20am on 01 Dec. 2019.



History of Local Chapter Activities



- Holy Angel University
 - Development of AMSAT lab
 - Capture satellite data
 - Weather imagery to be captured using SDR
- University of San Carlos
 - Preparing for an elective course both for our undergraduate and graduate programs. It is scheduled to be offered beginning August 2019 (undergraduate) and January 2020 (graduate)
- Mindanao State University – Iligan Institute of Technology
 - Guidance and control system of semi-ballistic rocket
 - RF IC design for satellite communication and satellite engineering

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2019.12.01

Paul Jason Co (UPD) reports on the activities of UNISEC-Philippines during 11:20 am thru 11:30 am on 01 Dec. 2019.





Prof Cho meets Jim Hefkey (Auckland, NZ); he is doing CubeSats in New Zealand.



Prof Cho re-meets Chisato Kobayashi (ACC Clyde Space, UK). I met her at UNOOSA a few years ago.

17:45-20:00



These were all good talks →

See the next few slides.

ISU-UNISEC Collaboration night

17:45-19:00 Plenary Session

MC: **Hajime Yano**, JAXA

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

Alumni talks

- **Toshinori Kuwahara**, Tohoku University, SSP2007
- **Alison Reneau** (USA), SSP 2014, 2015, 2016
- **Hazuki Mori**, JAXA, SSP 2018
- **Michael Siddall** (Australia), SHSSP2019

19:00-20:00 Networking with wine (provided by IHI)
at the foyer of Koshiba Hall



**Prof.
Chris Welch of
ISU
outlines the work of
ISU**

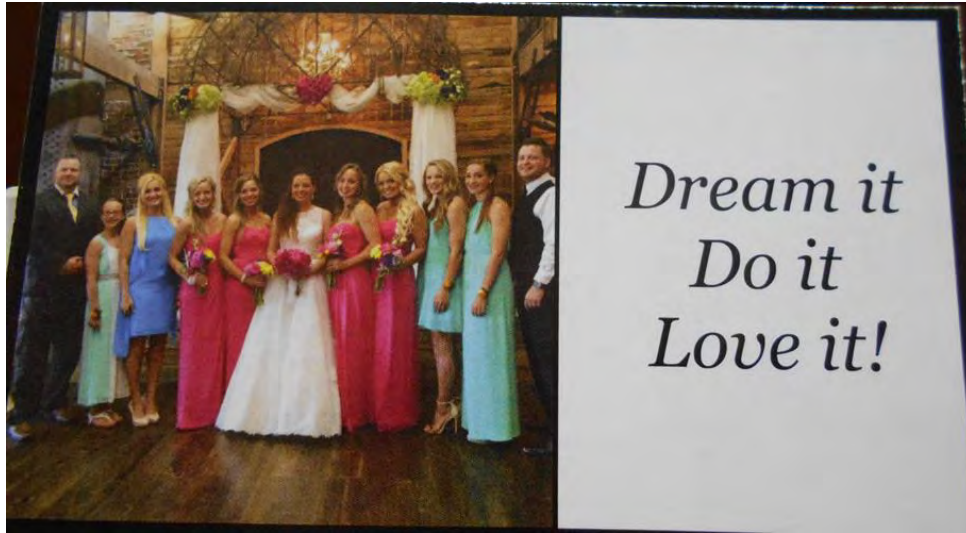




**Dr. Toshinori Kuwahara,
Tohoku Univ.**



Ms. Hazuki Mori, JAXA



Allyson's biz card 名刺



She describes her ISU experiences in very positive terms



She has 9 daughters and 2 sons; all by same father



UNIGLO-7 Official Group Photo

01 Dec. 2019



Day 3 – December 2nd (Monday)

8:00-9:00	Registration	
9:00-14:10	The 6th Mission Idea Contest for Achieving Sustainable Development Goals with Human Spaceflight Moderator: A. Rustem Aslan , Istanbul Technical University	
9:00-9:10	Overview of MIC6	Herman Steyn , University of Stellenbosch
9:10-10:30	MIC6 Category: ISEEP	
9:10-9:30	On-orbit Measurement of Radiation Effects on Commercial-Off-The-Shelf (COTS) Hardware for Small Satellites	Senior Shimhanda , Kyushu Institute of Technology
9:30-9:50	Gamma-Ray Astronomy Observation as a Subsidiary Function of CubeSat Communication Swarms	Plamen Dankov* , Ivan Iliev* , Daniel Hristov* , Nikolai Neshev* ; *Sofia University, ^Technical University
9:50-10:10	Spectrum Monitoring from Space with I-SEEP (SMoSiS)	Genedyn Gems S. Mendoza , Advanced Science and Technology Institute and University of the Philippines-Diliman
10:10-10:30	Mountain VIEWS (Mountain Volcano Identification and Early Warning System)	Muhammad Purwa Manggala , Muhammad Hafizh , and Syaeful Hilman Supratman , Telkom University
10:30-10:50	Coffee/Tea Break	

MIC 6

Senior of Kyutech

Mission Idea Contest





On-orbit Me
Commercial

Laboratory of S

2019.12.02

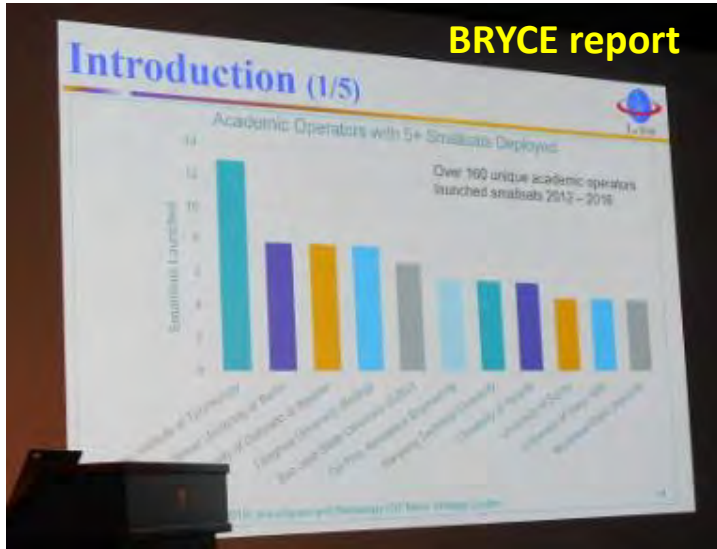


The 6th
Mission Idea Contest

On-orbit Measurements of Radiation Effects on
Commercial-Off-The-Shelf (COITS) Hardware
for Small Satellites

Senior Shimuliantla and Tomosi Mwanza

Laboratory of Spacecraft Environment Interaction Engineering

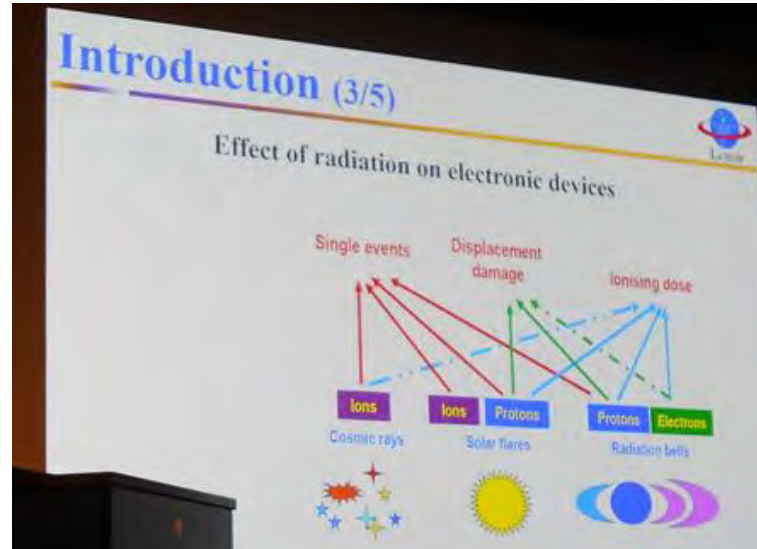


BRYCE report

Introduction (1/5)

Academic Operators with 5+ Satellites Deployed

Over 160 unique academic operators
launched satellites 2012 - 2018



Introduction (3/5)

Effect of radiation on electronic devices

Single events Displacement damage Ionising dose

Ions Protons Electrons

Cosmic rays Solar flares Radiation belts

Lunch on campus



2019.12.02

Turkish kebab
(inside Koshiha Hall)

Senior (ABE Fellow of Namibia) goes to work



Kishimoto-san handles the questions from Dr Yoshida (Osaka Pref. Univ.)



BIRDS-4 poster by BIRDS-4 team



Dr Kitazawa (UNISEC) interviews Alexander Kramer of Wuerzburg Univ. (Germany) -- MEXT Capacity Bldg survey



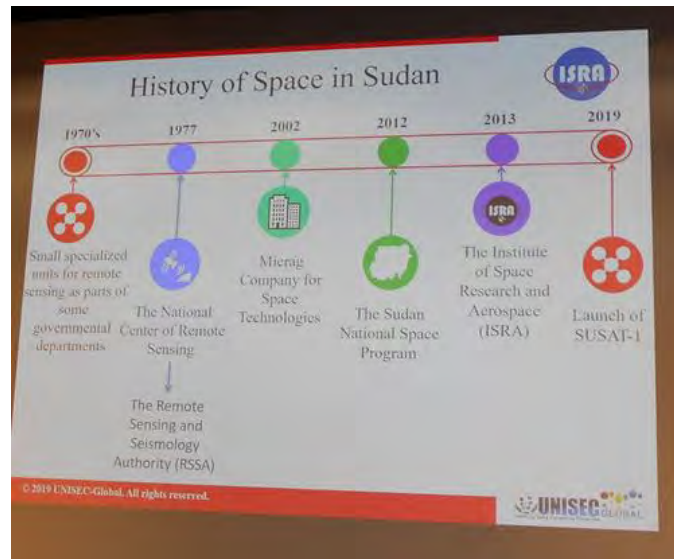


**Dr Kitazawa (UNISEC) interviews Prof. Herman Steyn of Steffenbosch Univ. (South Africa)
-- MEXT Capacity Bldg survey**



Herman's "space neck tie" from Surrey

Hind (another ABE Fellow of Kyutech) gives the country report for Sudan



Regional Report
Thailand

Phongsatorn Saisutjarit
King Mongkut's University of Technology North Bangkok (KMUTNB)

The 7th UNISEC-Global Meeting, 02 Dec 2019

2019.12.02

Dr. Pom gives the country report for Thailand



Spectrum Monitoring from Space with i-SEEP (SMoSiS)

Genedyn Gems S. Mendoza,
Advanced Science and Technology Institute and University of the Philippines-Diliman

Spectrum Monitoring from Space with i-SEEP (SMoSiS) - Capturing and Mapping the Digital Divide from Space through Radio Frequency Spectrum Measurements
Mar F. Guzman^{1,2}, Genedyn Gems S. Mendoza^{1,2}, Calvin Artemies G. Hilario^{1,2}, and Joel Joseph S. Marciano, Jr.^{1,2}
Space and Technology Institute, Department of Science and Technology
C.P. Garcia Avenue, 1101, Quezon City, Philippines

MIC results (ceremony)

**Winner of iSEEP category
(Philippines)**



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)

MUSA: An ISS experiment for the research of a dual culture for Panama disease
Valeria María Dittel-Tórtos, Fiorella Arias-Bonilla, Carmen Araya Chacón, David Montero Ureña, Carlos Rodríguez Domínguez, Marco Antonio Rodríguez Blanco, and María José Rodríguez Domínguez
Costa Rica Institute of Technology (TEC)

**Winner of ICECUBES category
(Costa Rica)**

Senior



Each MIC finalist is recognized for being a finalist



All finalists are called to the stage – *Senior* is at the far right of this photo



2019 MIC Winners

Category A: ICECubes

1st Place: MUSA: An ISS Experiment for research of a dual culture for Panama Disease

Members: José Ricardo Campos Mora, Carlos Andrés Rodríguez-Delgado, Jose David Montero-Ureña, Carmen Valentina Araya-Chacón, Marypaz Salas-Rodriguez, Douglas Rojas-Cerdas, Alex Sáenz-Rojas, Maria Fernanda del Barco-León, Valeria María Dittel-Tórtos, Randall Chacón-Cerdas, Johan Carvajal-Godínez, Wiliam Rivera-Méndez, Jairo Rodríguez-Blanco, Fiorella María Arias-Bonila, *Costa Rica Institute of Technology (TEC)*

Student Prize: MARGE Melanoma Apoptosis Reduced Gravity Experiment

Members: Giorgio Bagolan, Fabiola Calidori, Gianluca Cocirla, Edoardo Colonna, Federica Del Prete, Angelo Fabbri, Pierluigi Federic, Roman Horshkov, Paolo Marzioli, Emanuele Neri, Maria Giulia Pancalli, Alessio Piergiacomo, Maurizio Renda, Eleonora Vestito, *Sapienza University of Rome*

Category B: iSEEP

1st Place: Spectrum Monitoring from Space with i-SEEP (SMoSiS)

Members: Genedyn Gems S. Mendoza, Mar Francis D. De Guzman. Calvin Artemies G. Hilario, Joel Joseph S. Marciano Jr., *University of the Philippines Diliman*

Student Prize: Mountain VIEWS (Mountain Volcanoes Identification and Early Warning System)

Members: Muhammad Purwa Manggala, Edwar, Muhammad Hafizh, Syaeful Himan Supratman, *Telkom University*

IAA Award: MUSA: An ISS Experiment for research of a dual culture for Panama Disease, *Costa Rica Institute of Technology*



DAY 4: 03 Dec 2019

7th UNISEC-Global Meeting

11:00-12:00	Group Discussion Overview	Rei Kawashima , UNISEC-Global
	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 3: Deep Space Exploration Mission with CubeSats	Masahiro Fujiwara , the University of Tokyo
11:00-12:00	Group 4: Business Development of HEPTA-Sat	Masahiko Yamazaki , Nihon University and Michael Siddall , the University of South Australia
	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
	Group 7: How can space technology contribute to improving the accuracy of prediction for natural disasters?	Quentin Verspieren , the University of Tokyo
	Group 8: Commercialization of ISS - How to keep the ISS sustainable by promoting private sectors' involvement	Mac Kanazawa , Space BD, Inc. and Hilde Stenuit , Space Applications Services
	Group 9: Global Space Job Fair	Bernd Weiss , Space Job Fair

**Each
discussion
group
presented
their findings**

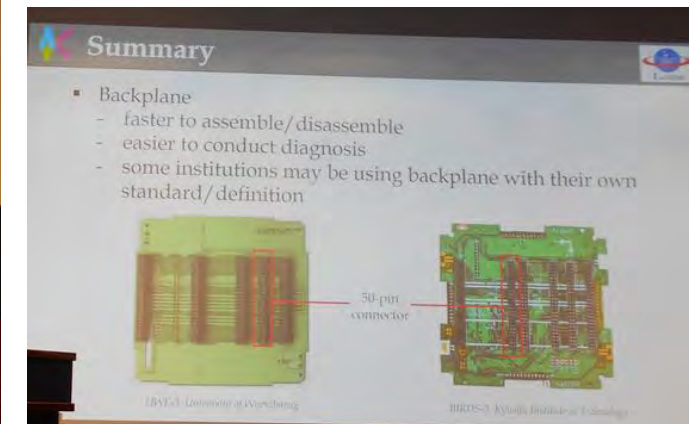


Marloun discusses the summary of this group



You can see the list of members of this group – it was a big group

2019.12.03

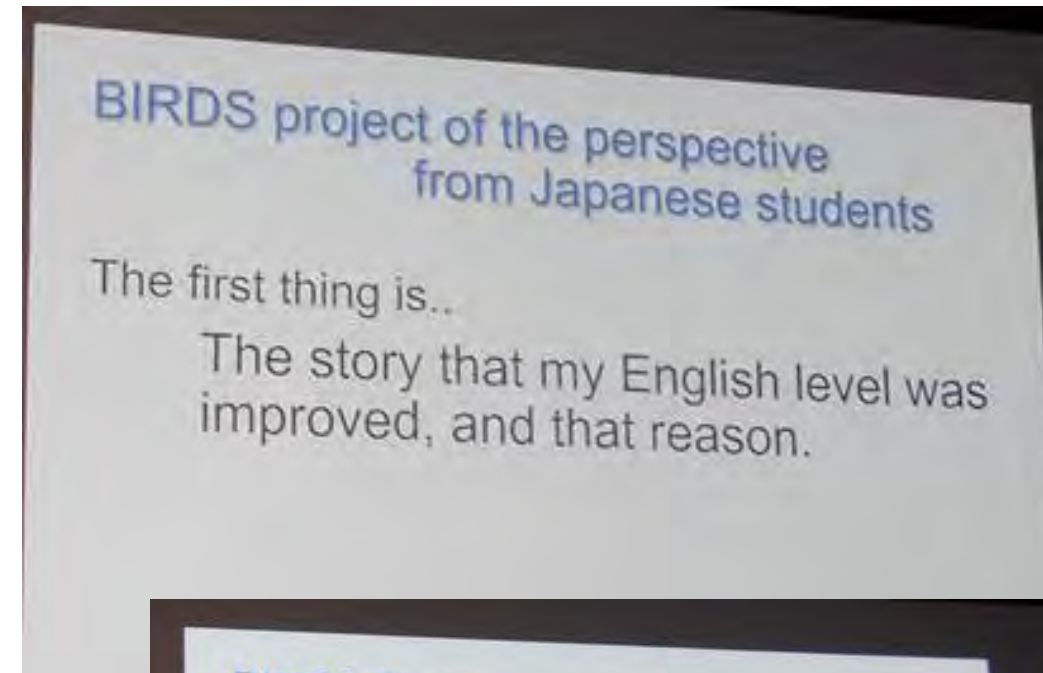
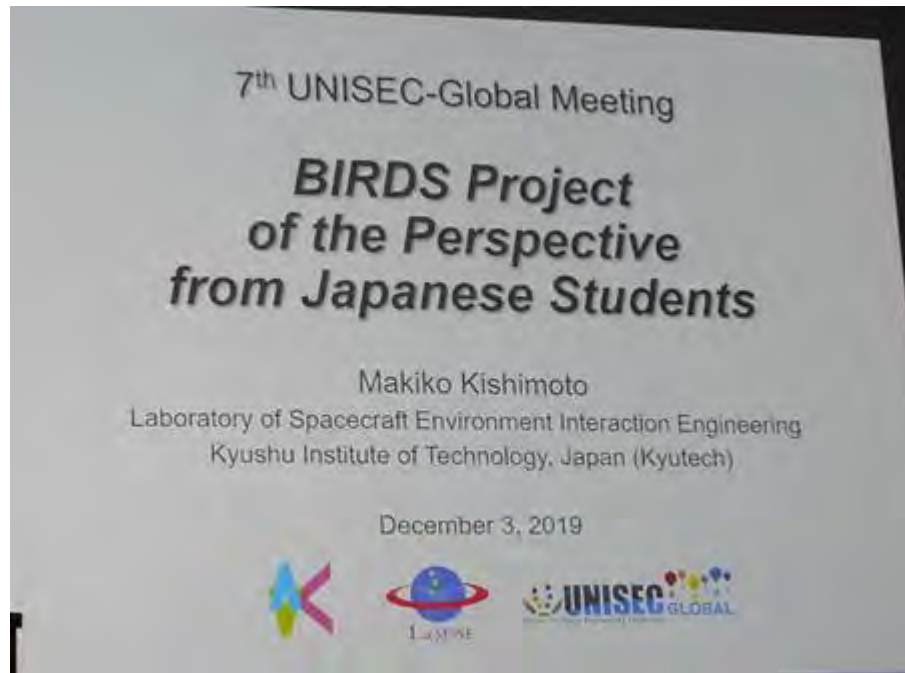




**MEXT capacity building survey:
GM interviewed Fernando of Brazil**



**MEXT capacity building survey:
GM interviewed Dr. Gopal of India**



Kishimoto san did a great job with her BIRDS Project presentation. Her presentation is reprinted in Issue No. 47 (this issue) as Section 12.





Dinner cruise on Sumida River of Tokyo

Many more photos
of **UNIGLO-7**
can be found here:

<https://www.facebook.com/unisecglobal/>

End of report on UNIGLO-7 at Tokyo, Japan

**The next meeting is planned for next year
in early July, in Istanbul.**

16. 4BIW: 4th BIRDS International Workshop in Bangladesh



This workshop was hosted by *BRAC University* and co-hosted by *Bangabandhu Sheikh Mujibur Rahman Aviation and Aerospace University (BSMRAAU)*

Website of BSMRAAU is
<https://www.bsmraau.edu.bd/>

Dates of the workshop:
25-28 Nov. 2019

Overseas participants had their air fare covered by a grant from JSPS of Japan.

Kyutech thanks Kafi and Antara for working hard to organize this workshop.

Workshop website: <http://4biw.bracu.ac.bd/>



The 4th floor of BRAC Centre Inn

Breakfast of Day 1 (7:00 AM; 25 November 2019)



THE VENUE of the opening ceremony of Day 1

THE GUESTS ARRIVE



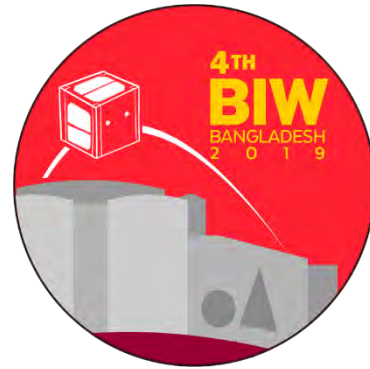
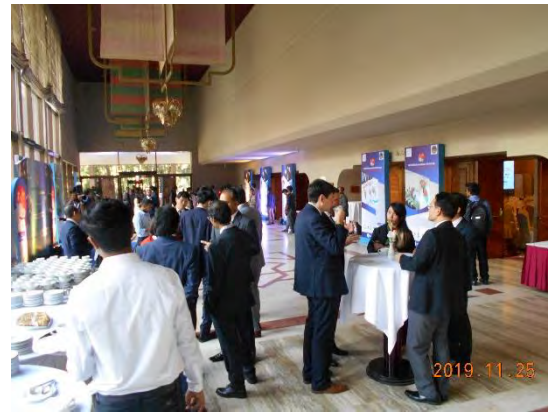
Kafi's mom

Kafi's dad



Air Commodore Sharif Uddin Sarker and Antara







Initial group photo of BIRDS members (holding a JSPS banner)

...before the start of Opening Ceremony



Antara explains BIRDS workshops





Prof. Cho covers our Big Agenda





Prof. Vincent Chang (VC of BRAC University) gives plaque of appreciation to Prof. Cho



VC of BRAC Univ. receives space-flown Bangladesh flag from the BRAC BIRDS-1 team



Student who designed the 4BIW logo



Prof Cho delivers a lecture on lean satellites

14:00 of Day 1



2019.11.25



Above: Prof Cho receives a plaque of appreciation from Kafi and Antara.

Left: Prof Cho receives a question from a BRAC student.

DAY 2: 26 Nov 2019

A day of BIRDS presentations

For Payment

bKash

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BRAC UNIVERSITY
Inspiring Excellence

BIRDS
BANGALORE INTERNATIONAL RESEARCH AND AEROSPACE STUDIES

OPEN FOR ALL FROM ALL INSTITUTIONAL AND PROFESSIONAL BACKGROUNDS

Venue:

PAN PACIFIC
SONARGAON DHAKA

***Complimentary Lunch**

Time:

Inaugural from 9.30am-12pm

Lecture from 2pm-4pm

4th BIRDS International Workshop
-Demystifying Satellites

Date:
25th November

Registration Fee for BRACU Students

Fee: 200TK

Registration Fee for everyone else

Fee: 500TK

Prof. Arshad M. Chowdhury
Dean, School of Engineering and Computer Science, BRAC University

Air Vice Marshal Ahem Fazul Haque
Bangladesh Air Force Academy and Bangladesh University of Aeronautics and Astronautics

Dr. Mengu Cho
Head, Department of Space Systems Engineering, Kyushu Institute of Technology, Japan

Prof. Mohammad Tamim
Pro-VC, BRAC University

Dr. Shahjahan Mahmood
Chairman, Bangladesh Communication Satellite Company Limited

Prof. Vincent Chang
Vice-Chancellor, BRAC University

Dr. Arthur R Khan
Assistant Prof., The University of Texas at El Paso

MEDIA PARTNER

theindependent

INDEPENDENT

PARTNERS

To Register

Scan This QR CODE

bit.ly/2Xg5VEm

One poster designed for 4BIW





Day 2 (26th November)

- | | |
|----------------------------------------------------------------|----------------------|
| 01. Assembly time | 8:45 |
| 02. Day briefing | 9:00 |
| 03. P1: Tsolmon RENCHIN | 9:10 |
| 04. P2: ANTWIWAA, Anita | 9:30 |
| 05. P3: M. HUZAIMY BIN JUSOH | 9:50 |
| 06. P4: MAE ERICKA JEAN PICAR | 10:10 |
| 07. Tea Break 1: | 10:30 |
| 08. P5-P6: "Capacity Building Survey" discussion (Cho & Maeda) | 10:45 |
| 09. P7: MARY ANN CONSTANTE | 11:25 |
| 10. P8: Cheki Dorji | 11:45 |
| 11. Lunch Break : | 12:05 – 13:30 |

- | | |
|--------------------------------------------------|--------------|
| 12. P09: G. Maeda (BIRDS-4 video) | 13:30 |
| 13. P10: RABINDRA PRASAD DHAKAL | 13:50 |
| 14. P11: DIEGO STALDERDÍAZ | 14:10 |
| 15. P12: MR. PHONGSATORN | 14:30 |
| 16. Tea Break 2: | 14:50 |
| 17. P13: ADOLFO CHAVES JIMENEZ | 15:05 |
| 18. P14: JUANG, Jyh-Ching | 15:25 |
| 19. P15: MOUTAMAN MIRGHANI
DAFFALLA ELBASHEER | 15:45 |
| 20. P16: NAWARAT WORAKUL | 16:05 |

-Dinner at 19:00





**Prof. Tsolmon
National Univ. of Mongolia
Mongolia**





Dr. Anita
All Nations University
Ghana





**Dr. Huzaimy
UiTM
Malaysia**





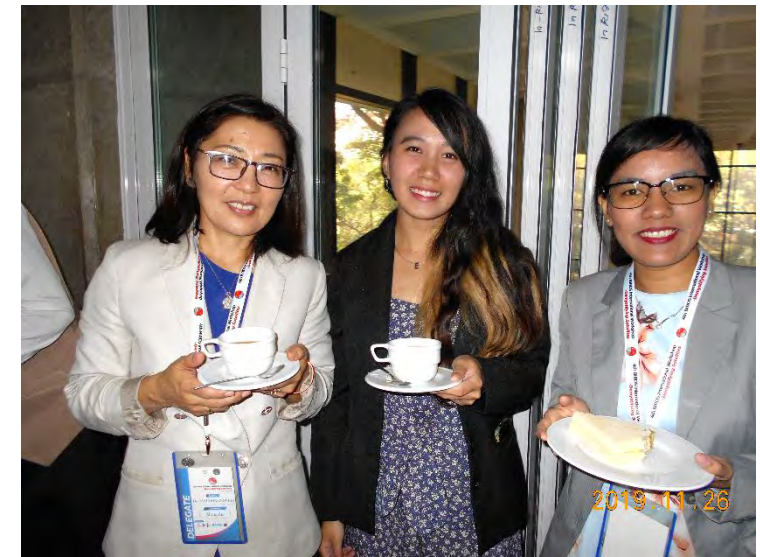
MAE ERICKA JEAN PICAR
Philippines



Sandwiches & Spring rolls



2019.11.26



2019.11.26



2019.11.26



2019.11.26



2019.11.26

Tea Break



2019.11.26



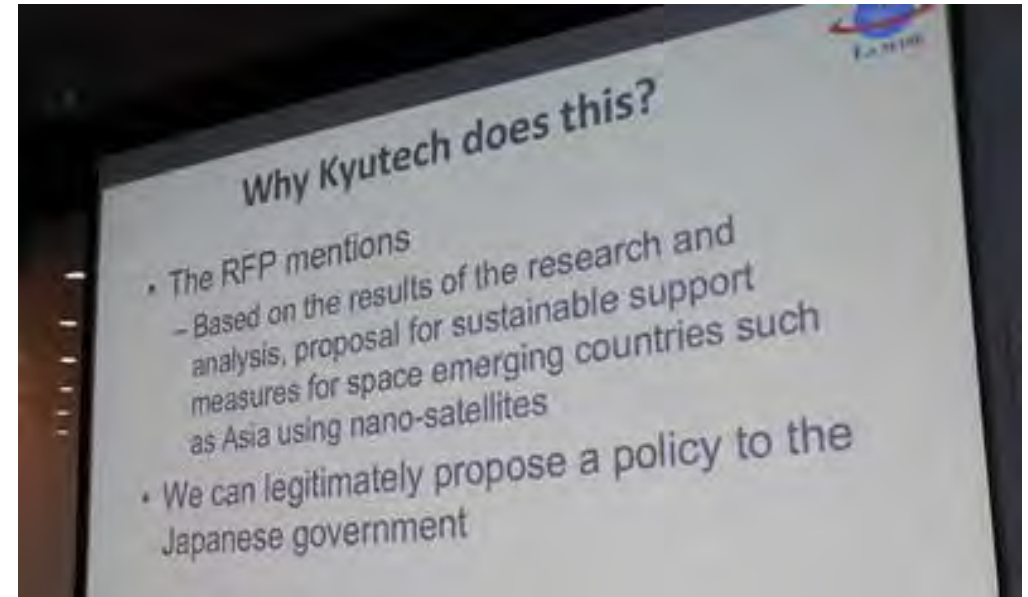
2019.11.26



2019.11.26



2019.11.26



Discussion: *MEXT Capacity Building Survey*



MARY ANN CONSTANTE
Philippines

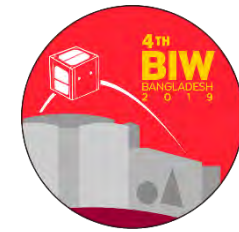


UPDATE OF BHUTAN'S SPACE PROGRAM

For 4th BIRDS INTERNATIONAL WORKSHOP
DHAKA, BANGLADESH
26 NOVEMBER 2019

Cheki Dorji
Division of Telecom and Space, DITT, MoIC
Royal Government of Bhutan

Acknowledgement: Flight Ticket supported by JPS Core-to-Core Program, B. Asia-Africa Science Platforms



Cheki Dorji
DITT, MoIC
Bhutan





Dr. Rabindra Prasad Dhakal
Nepal Academy of Sci. and Tech.
Nepal





Dr Diego
Paraguay



Dr Pom
Thailand



Adolfo
Costa Rica



Prof. Juang
Taiwan



Dr Moutaman
Sudan



Nawarat
Thailand

DAY 3: 27 Nov 2019

Internal BIRDS session and cultural show



Over a dozen posters were created for this workshop ... and all designed by the student below



Posters are on the next few pages







End of poster photos



BIRDS Project Newsletter – No. 47



Page 199 of 225



**BIRDS-1
in retrospect**

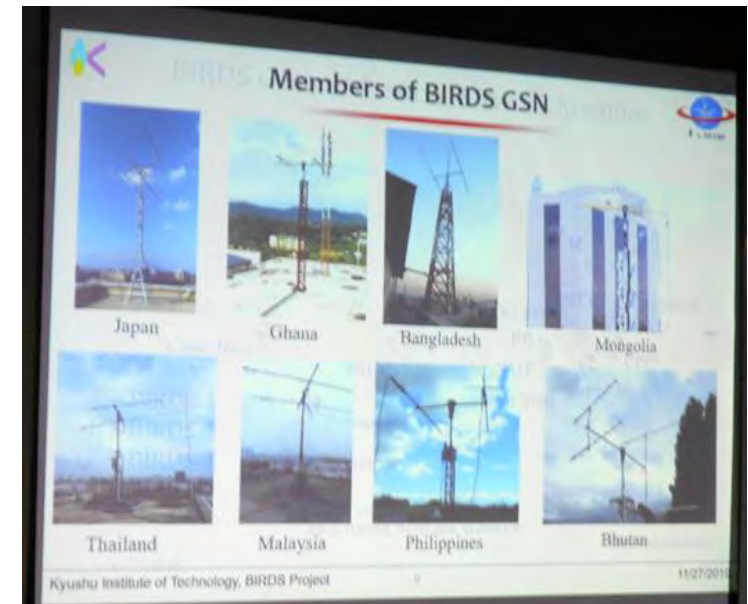
**Prof Cho and Pooja
review**

- **BIRDS-1**
- **BIRDS-2**
- **BIRDS-3**
- **BIRDS-4**





Apiwat reviews the ground station situation





The slide shows the RBF pins inserted in Nepal's BIRDS-3 satellite in the clean room of Kyutech (January 2019); the pins came back from the ISS via JAXA.



The RBF pin of each BIRDS-3 nation, before launch.

Kyutech returns Nepal's RBF (remove before flight) pins to Nepal



Paraguay (represented by Diego) signs BIRDS Network LOI (Letter of Intent)





Conclusion of 4BIW business sessions





Waiting for the cultural show to begin







A fast-paced dance routine



Remarks by guests





End of the cultural show

**Photo
taken after
the
cultural
show**





**BRAC Centre Inn
Dhaka**



BIRDS Project Newsletter – No. 47



**Performers
and audience
feast
together**

DAY 4: 28 Nov 2019

Excursion



First stop:

**Parliament of
Bangladesh**

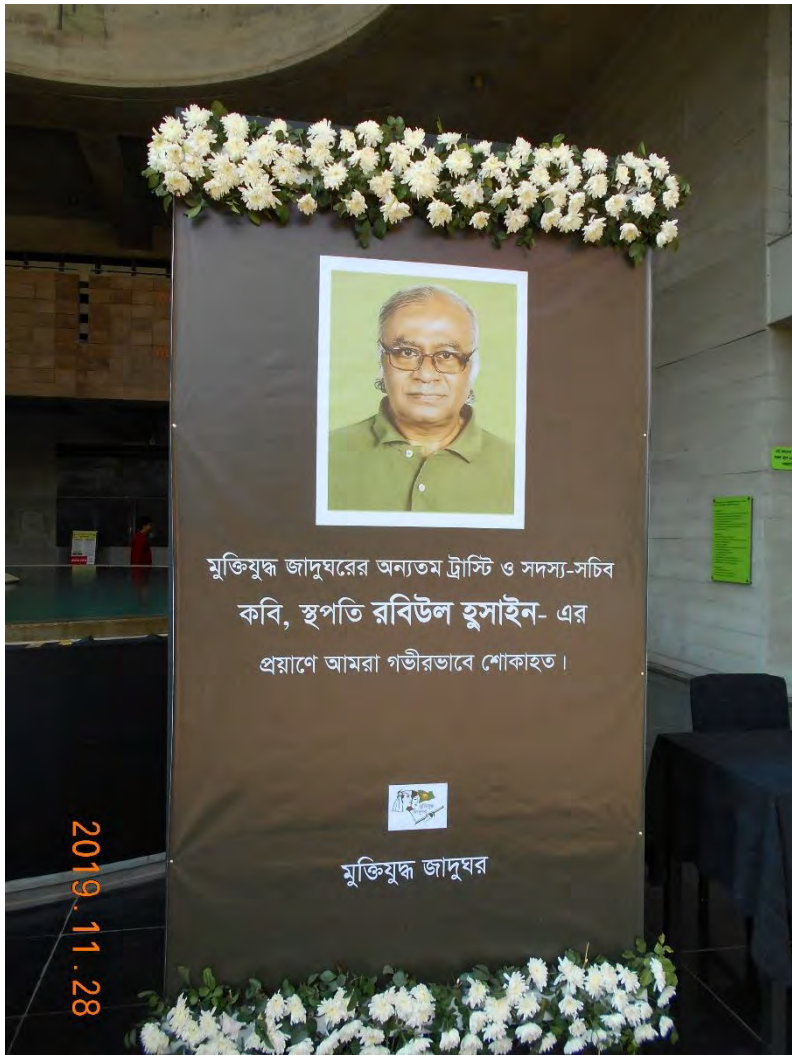




2nd stop:

**National museum of
national liberation**

**Completed in 2017
to explain how
Bangladesh gained
independence in
1971**



2019.11.28

আমাদের ঐতিহ্য, আমাদের সংগ্রাম
Our Heritage, Our Struggle



2019.11.28

**Above: our transport for the excursion
--- two mini buses**



2019.11.28



A good museum



2019.11.28



2019.11.28



Radio used by rebels

2019.11.28



2019.11.28



2019.11.28



2019.11.28

Before Bangladesh was born, there was **West Pakistan** and **East Pakistan**



**Lunch at a small resort
outside of Dhaka
(continued on the next page)**



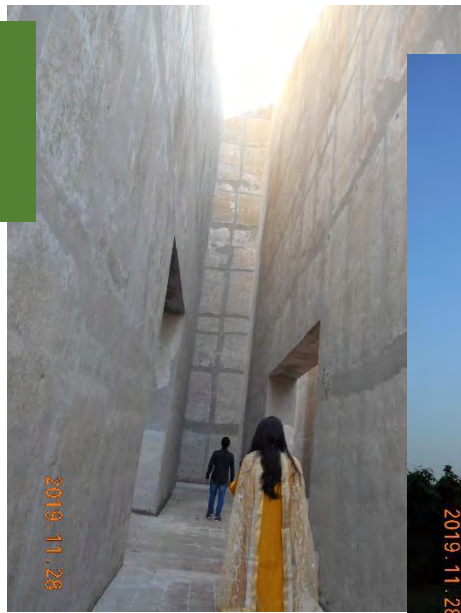
A BRAC facility





A lot of group photos

Visit to Bangladesh's monument to the nation's martyrs





Inside the monument



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Page 223 of 225

End of report about 4BIW



End of this **BIRDS Project Newsletter**

(ISSN 2433-8818)

Issue Number Forty-Seven

This newsletter is archived at the BIRDS Project website:

<http://birds1.birds-project.com/newsletter.html>

You may freely use any material from this newsletter so long as you give proper source credit (“BIRDS Project Newsletter”, Issue No., and pertinent page numbers).

When a new issue is entered in to the archive, an email message is sent out over a mailing list maintained by the Editor (G. Maeda, Kyutech). If you wish to be on this mailing list, or know persons who might be interested in getting notification of issue releases, please let me know.

This newsletter is issued once per month. The main purpose of it is to keep BIRDS stakeholders (the owners of the satellites) informed of project developments.