Project website: http://birds.ele.kyutech.ac.jp/
All back issues are archived at this website.

BIRDS Project Newsletter

Issue No. 9 (19 Oct. 2016)

Edited by:
G. Maeda, Tejumola Taiwo, M. Cho,
Laboratory of Spacecraft Environment Interaction Engineering (LaSEINE),
Kyushu Institute of Technology,
Kitakyushu, Japan.

La SEINE

SEIC

All back issues of this newsletter can be easily downloaded. Go to here: **http://birds.ele.kyutech.ac.jp/**
At the top, click on the tab called NEWSLETTER. You will get a menu for all back issues.

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1. Congratulations to all who passed the FCC amateur radio license exam of 3 Sept 2016

As mentioned in *Item 5* of **BIRDS Newsletter Issue No.8**, a group of BIRDS students sat the FCC exam in Saga Prefecture. These students passed the exam:

Name	Call Sign	Class
Amara, Mongolia	KG5PGU	General
Joseph, Ghana	KG5PGV	Technician
Ernest, Ghana	KG5PGW	General
Turo, Mongolia	KG5PGX	General
Kafi, Bangladesh	KG5PGY	Technician
Maisun, Bangladesh	KG5PGZ	General
Antara, Bangladesh	KG5PHA	General

合格
(means
"Pass")

This permits them to use certain amateur radio frequencies as radio operators.

2. BIRDS mentioned in Issue No. 884 of “Kyutech Journal” (明専會報)

Continued on the next page.

宇宙環境技術ラボラトリーの最近の状況

宇宙環境技術ラボラトリー施設長　趙　孟佑

Article written by Prof. Mengu Cho


ラボラトリー紹介

Horyu-4 Team

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ラボラトリー紹介

BIRDS Team

End of article.

3. BIRDS mentioned at Small Sat 2016 (Utah State, USA)

This paper (Cho & Kurahara) was entered into the records of this conference.

SSC16-XIII-8

International network operations of five CubeSats constellation

Mengu Cho
Kyushu Institute of Technology
1-1 Sensui Tobata-ku Kitakyushu, 804-8550, Japan; +81-93-884-3228
cho@ele.kyutech.ac.jp

JGMNB project members

Naomi Kurahara
Infostellar, Inc.
13-8-311 Daikanyama Shibuya-ku Tokyo, 150-0034, Japan; +81-3-6416-9569
naomi@istellar.jp

ABSTRACT

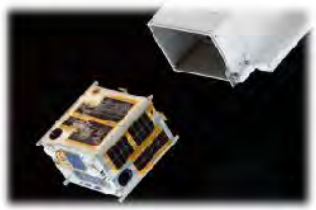
Kyushu Institute of Technology initiated Joint Global Multi-National Birds (aka, BIRDS) project in 2015. It is a constellation of five 1U CubeSats built by a group of students from Japan, Ghana, Mongolia, Nigeria, Bangladesh and Thailand. The constellation will be operated via a network of seven ground stations distributed worldwide including the one in Taiwan. Its prime mission is to "By successfully building and operating the first satellite of the country, make the first step toward indigenous space program". The mission success criteria is that after the students graduate, they succeed in developing and operating the second satellite in their home country. Because of this, the educational aspect of the BIRDS project was carefully designed so that the students gain enough in-depth training to initiate their own space program with the minimum cost utilizing lean satellite approach. The ground station network serves as an important asset to promote the cross-border inter-university space research and education collaboration that the students utilize after they return their home country. The BIRDS project will demonstrates the network operation of a CubeSat constellation via UHF/VHF ground station, which is easily expanded to other frequency ranges in future.

4. JAXA mentions BIRDS at “Mexico-Japan Education Forum” during 2016 IAC Mexico

México-Japan Space Education Forum
Guadalajara, Mexico

JAXA

Kibo’s contribution to broadening the possibilities for Micro/Nano-satellite



Engineer, Hiroki AKAGI
akagi.hiroki@jaxa.jp
Japan Aerospace Exploration Agency
Human Spaceflight Technology Directorate
JEM Mission Operations and Integration Center

Slide 1 of 20

Future mission with J-SSOD in 2017

- broadening the possibilities for Small Satellite -

Joint Global Multi Nation Birds (Birds Satellite Project)

Launch and deploy:2017

Investigator:Kyushu Institute of Technology
Japan, Ghana, Bangladesh, Mongolia, Nigeria, Taiwan, Thailand

Size: 1U 4 satellites

Mission: 1.Take photograph of homeland via onboard cameras (CAM)
2. Digi-singer Mission (SNG)
3. Determination of Satellite Precise Location (POS)
4. Atmospheric Density Measurement (ATM)
5. Demonstrate Ground Station Network for CubeSat Constellation (NET)
6. Measure single-event-latchup in orbit (SEL)

Slide 18 of 20

JAXA Engineer Akagi delivered this PowerPoint presentation during this forum on 28 Sept 2016; and he kindly provided a copy to Kyutech.

5. Good news from NUM (National University of Mongolia)

The meaning of "Mazaalai"
This is a rare bear that inhabits the Gobi Desert of Mongolia – this animal cannot be found anywhere else. The population of this species is just 20 bears.

Translation
Mongolia's first satellite. The "Mazaalai" team members express their sincere appreciation to deputy prime minister of Mongolia.
[photo at the right]

Translation continued on the next page.

Website of NUM

НҮҮР БИДНИЙ ТУХАЙ ЭЛСЭЛТ СУРГАЛТ СУДАЛГАА, ХАМТЫН АЖИЛЛАГАА

МУ-ын анхны "Мазаалай" хиймэл дагуулыг хөөргөх ажлын хэсгийнхэн Шадар сайдад баярласанаа илэрхийллээ

2016-10-05 05 October 2016

МУ-ын ЗГ-ын гишүүн, Шадар сайд

Contents of the NUM website news [translation by Turo of the BIRDS team]

Mr. Khurelsukh, the Deputy Prime Minister of Mongolia, has been introduced to Mongolia's first satellite. He was told about its patriotic name and its development progress. This satellite will be launched under the BIRDS international project; the launch is due in spring of 2017. Through initiatives taken by the Deputy Prime Minister and the National Emergency and Management Agency of Mongolia, the government decided to finance the project in the state budget for the year of 2017. Mr. Khurelsukh declared, "Mongolia will have its own satellite. We can do independent research and studies in the field of space. Moreover, we can manage meteorological and natural disasters with satellite technology. It is significantly important for national emergency sector. Therefore, we need to pay attention to this notable project and to support satellite development activities." He also wished the satellite team best of luck.

Mock-up of BIRDS satellite

Mock-up of BIRDS satellite

A - Prof. Tsolmon Renchin
B - Prof. Duger Ulam-Orgikh
C – President of NUM
D – Deputy Prime Minister of Mongolia

6. Innovative educational aspects of BIRDS presented at 2016 IAC Mexico

G. Maeda (editor of this newsletter) presented a talk at IAC with this title

The abstract for this talk and paper is shown on the next page.

B4.
23rd IAA SYMPOSIUM ON SMALL SATELLITE MISSIONS

Session
17th Workshop on Small Satellite Programmes at the Service of Developing Countries

This photo courtesy of Jose Rodrigo Cordova Alarcon, PNST Phd candidate at Kyutech, Japan.

At right is the abstract for the IAC paper entitled

BIRDS Project: An Innovative Way To Educate Post-graduate Students From Developing Countries

by G. Maeda, BIRDS team, and M. Cho

The panel for this session (B4.1.4)

IAC-16-B4.1.4 x33373

BIRDS Project: An Innovative Way To Educate Post-graduate Students From Developing Countries

George Maeda[a]*, BIRDS Project Team[a], and Mengu Cho[a]

[a] *Laboratory of Spacecraft Environment Interaction Engineering (LaSEINE), General Research Building, 4th floor, Kyushu Institute of Technology, 1-1, Sensui-Cho, Tobata Ward, Kitakyushu City, Japan*

* Corresponding author, maeda@ise.kyutech.ac.jp

Abstract

With help of the United Nation's "Post-graduate study on Nano-Satellite Technologies (PNST)", Kyushu Institute of Technology (Kyutech) has an unusually large number of space engineering graduate students from developing countries (currently 33 such students from 19 countries). All PNST fellows and all self-funded overseas students are enrolled in our "Space Engineering International Course (SEIC)", which has a strong emphasis on hands-on training. We believe the best way to master satellite technology is to design, build, launch, and operate, a real satellite, within given time constraints – in Japan the standard duration for a master's degree is two years. We describe one hands-on international project of SEIC, which in October of 2016, will be past the halfway point. The BIRDS Project started in October of 2015 with 15 students -- 3 Japanese and 12 from developing countries. None have designed a spacecraft before. They represent four nations, and the goal is for the students of each nation to build a 1U cubesat for their nation – of which three are non-space faring nations. The students hammer out the design themselves, and then each cubesat is built to that common design using commercially available parts. Hence, when in LEO, the four cubesats will form the first constellation of 1U cubesats designed, built, and flown, by university students. Launch (to the ISS) is set for second quarter of 2017. The schedule is exceedingly ambitious. The project has six missions: (1) capture images of their homelands, (2) broadcast songs to ham radio stations of their homelands (using the onboard "Digi Singer" device), (3) determine precise satellite location by examining the time lag of signals received at several ground stations (because there is no room for GPS in BIRDS cubesat), (4) measure atmospheric density based on the aforementioned precise location information, (5) demonstrate the feasibility of a ground station network based on university facilities in developing nations, and (6) investigate single-event latch-up's by carefully assessing onboard resets. When students go through all of the above, it becomes a uniquely intensive and extensive space technology learning experience. Of course, each student is assigned specific roles (e.g., mechanical design of the cubesat frame or design of the camera system). However, in the end, each will have participated in the entire process from design to on-orbit operation.

7. Announcement regarding United Nations/Japan Long-term Fellowship Programme on Nano-Satellite Technologies (Kitakyushu, Japan)

UNITED NATIONS
Office for Outer Space Affairs

12 October 2016

Dear Sir/Madam,

United Nations/Japan Long-term Fellowship Programme on Nano-Satellite Technologies (Kitakyushu, Japan)

Applications for 2017

I am pleased to inform you that the application period for the 2017 round of the United Nations/Japan Long-term Fellowship Programme on Nano-Satellite Technologies ("Post-graduate study on Nano-Satellite Technologies (PNST)") for nationals of developing countries or non-space-faring nations is now open. This Fellowship Programme has been established in 2011 by the United Nations Office for Outer Space Affairs and the Government of Japan in cooperation with the Kyushu Institute of Technology (Kyutech) under the framework of the Basic Space Technology Initiative of the United Nations Programme on Space Applications. In 2017 the Programme will accept up to two students in the Masters course (2 years duration) and up to four students in the Doctorate course (3 years duration). For the successful candidates living cost and travel to and from Japan will be covered by a Japanese government scholarship (Monbukagakusho: MEXT). Fees for matriculation, tuition and entrance examinations will be paid by Kyutech.

Letter continued on the next page.

On 12 October 2016 this letter was distributed to all Permanent Missions to the United Nations -- Vienna and New York.

The main message is that **PNST** (a scholarship program jointly managed by UNOOSA and Kyutech) applications will be accepted until 22 January 2017.

UNITED NATIONS
Office for Outer Space Affairs

On behalf of the United Nations, it is my pleasure to extend this invitation, through you, to your Government to nominate highly qualified individuals to submit an application. I would highly appreciate it if you would promptly transmit this information to the appropriate governmental, academic, research, and other relevant institutions/organizations in your country, such as space agencies, research and development centres, and relevant industries.

All information about the fellowship programme, including the application requirements and the application and nomination forms, are available electronically from our website at http://www.unoosa.org/oosa/en/ourwork/psa/bsti/fellowships.html. To be considered in the selection process, the completed application form and all other requested supporting documents must be submitted by no later than 22 January 2017.

Thank you very much for your assistance and cooperation.

Yours sincerely,

Luc St-Pierre
Chief, Space Applications Section

All Permanent Missions to the United Nations (Vienna and New York)

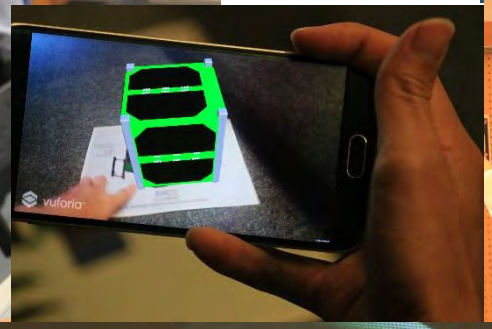
Bringing the benefits of space to humanity

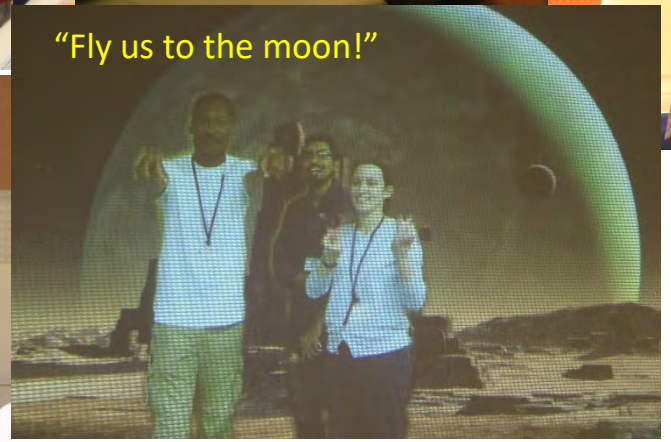
Office for Outer Space Affairs, United Nations Office at Vienna, Wagramerstrasse 5, 1400 Vienna, Austria
Tel. (+43-1) 26060-0, Fax (+43-1) 26060-5830, www.unoosa.org

8. BIRDS members participate in Kitakyushu World Space Week

(10 Oct 2016, 10am-4pm, Kitakyushu Environment Museum)

This global event was explained in Item 7 of Issue No.8 of this newsletter.

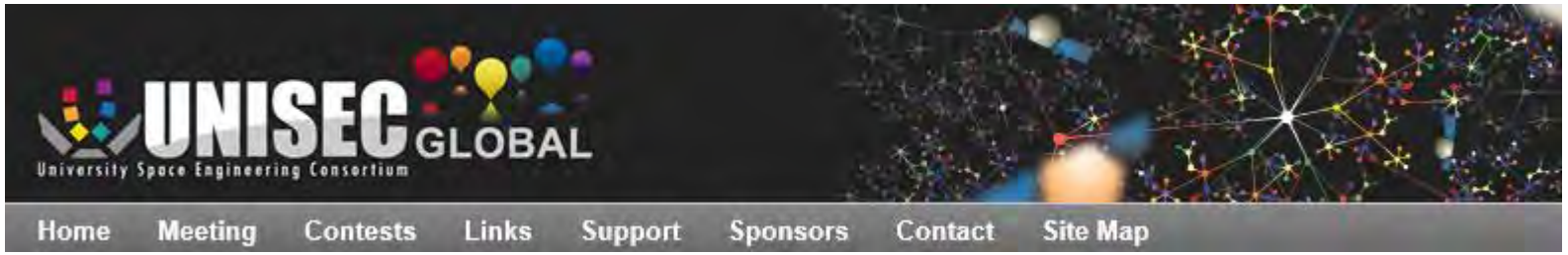




World Space Week
October 4 - 10

9. Taiwo (the Project Manager) will present the project at UNISEC-Global@Bulgaria

The website for this conference: http://www.unisec-global.org/



Taiwo (full name: TEJUMOLA Taiwo Raphael) is in SEIC of Kyutech as a Phd candidate. He is also the project manager for the BIRDS Project. During the week of October 17th he will be in Bulgaria to give a talk on the BIRDS Project. This project is getting more and more attention around the world. Using university students, the nations of Ghana, Mongolia, and Bangladesh, are currently building their first space-borne satellites – their first real indigenous step into space. With this step, Kyutech hopes that their respective national space programs will get underway in a sustainable fashion.

In addition, in November, G. Maeda will give a talk about nano-satellite capacity building (includes details on the BIRDS Project) at APRSAF gathering in Manila.

END OF ISSUE NO. 9