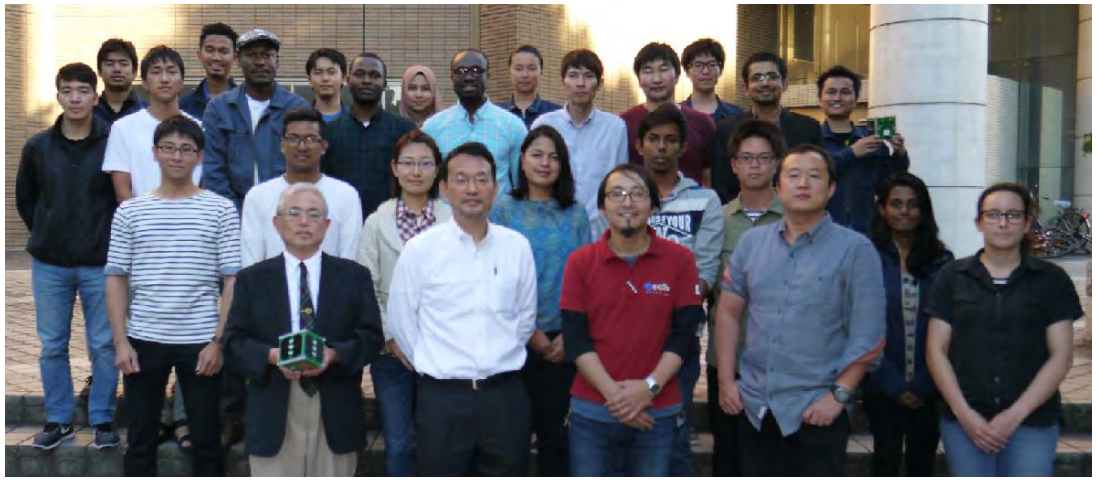


Members of BIRDS -1, -2, and -3 on 4 October 2017, at Tobata Campus

Archive website: http://www.birds-project.com/birds1/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.

ISSN 2433-8818

BIRDS Project Newsletter

Issue No. 28
(18 May 2018)

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

La SEINE

SEIC Space Engineering International Course

All back issues of this newsletter can be easily downloaded.
Go to here: http://www.birds-project.com/birds1/newsletter.html and scroll down to the desired issue.

Table of Sections

The Guest Box

From Mongolia (BIRDS-1)

This was a gathering of Mongolian space experts on 30 January 2018 to discuss the way forward for space-related technology in Mongolia. Location of this forum was the *National University of Mongolia*, NUM. This photo was kindly provided by Erka of **BIRDS-1.**

01. Kyutech President recognizes the importance of diversity in March 2018 commencement address

学位記授与式学長告辞

平成29年度 学位記授与式学長告辞

九州工業大学長　尾家　祐二

本日、ここに平成29年度の学位記授与式を挙行できますことは、本学にとりまして大きな喜びであります。栄えある門出を迎えられました皆さんに、まずもってお祝い申し上げます。また、この日まで卒業生・修了生を物心両面から支えられました保護者の皆様と御家族の皆様のお喜びはひとしおと、衷心よりお祝い申し上げます。

本日、皆さんが、九州工業大学を卒業・修了されるこの機会に、皆さんが活躍する未来と、その未来創造に向けた姿勢について一緒に考えたいと思います。

英国のビジネス誌『エコノミスト』編集部による「2050年の世界」（文春文庫）においては、「結局私たちは、すべての情報や新生技術が今後どう使われていくか予測することはできない。だが、それらが、いずれ起こる技術改革の土台として存在するだろうということは分かる」と指摘されています。実際、「電球に明かりを灯すために押し進められた電化が、最終的にはパソコンを含むあらゆる種類の機器に電力を供給するようになったのと同様、センサーネットワークや人工知能、データの大洪水もさまざまに利用されて、それらを創造した者の理解も及ばないことができるようになる」ことでしょう。そこで、私達が、過去から学ぶべきこととして、『エコノミスト』編集部は「私たちは未来に対し、大いに謙虚になるべき」であり、「技術は、めったに人間の思い描いたとおりに進化しない」と指摘しています。未来予測は困難ですが、未来を支える技術の種は今ここにあるとも言えます。そして、今ある技術、今生まれようとしている技術の未来の可能性を謙虚に想像しようではありませんか。

さらに、その続編ともなる英『エコノミスト』編集部「2050年の技術」英『エコノミスト』誌は予測する」（文藝春秋）は、2050年までの世界をかたち作る技術に焦点を当てています。ただし、技術の影響は幅広い領域におよび、影響力を及ぼす技術の裾野はきわめて広くなっていきます。その中では、SF作家のウィリアム・ギブソンの「未来はすでにここにある。均等に行きわたっていないだけだ」という有名な言葉を引いたうえで、技術は「突然登場するように見えて、実はそうではない」、したがって、「正しい場所に目を向ければ、明日のテクノロジーを今日見ることができる」、それを『エッジケース（限界的事例）』と呼び、「広く普及する前に、特定の集団や国だけで広がりつつある事例」を探すことが重要であるとの指摘がされています。

その分かりやすい例として、21世紀初頭の日本におけるガラケーとケニアのモバイルマネーの普及が取り上げられています。前者については、「2001年に日本ではカメラ付き、カラーディスプレイ付きの携帯電話が当たり前に普及していた。道案内付きの地図を表示でき、電子書籍、ゲームなどのアプリもダウンロードできた。ジャーナリストやアナリストはそんな電話を見るために日本詣でにいそしんだ」と紹介し、後者については、「モバイルマネーの普及で長らく世界をリードしていたのはケニアだ。携帯端末同士でテキストメッセージを送り合えるように、簡単かつ瞬時に送金ができるのだ。ナイロビでは携帯電話でタクシー料金が支払えるのに、ニューヨークではそれができないという状況が何年も続いていたほどである」、と述べています。これらは、「他国のシステムとの互換性など気にせずに、創意工夫することができた特殊な状況」であったり「銀行インフラの存在し

CONTINUED ON THE NEXT PAGE

← This is the commencement address by Kyutech President Oie on 23 March 2018. Among other points, he mentions the importance of diversity – and he highlights the **GEDC Airbus Diversity Award** secured by the BIRDS Project last year.

For English translation, see the link below.

http://www.kyutech.ac.jp/media/001/201803/gakuchokokuji_eng20180323.pdf

学位記授与式学長告辞

未来を創造する姿勢に関することとして、次のことを紹介したいと思います。昨年、本学が進めている衛星開発プロジェクトの一つである「BIRDS Satellite Project」が、「GEDC Airbus Diversity Award 2017」を受賞したことをご存じでしょうか。2017年は、18カ国45件の応募があり、エンジニアリング教育の世界的団体であるGlobal Engineering Deans Council（GEDC）の年度総会にて、最終候補3件のプレゼンテーションが行われ、「BIRDS Satellite Project」が見事、最終選定されました。この賞は、世界的航空機メーカー、エアバス社がスポンサーとなり、工学教育に多様性をもたらす成功例を対象とするAwardで、今回からはUNESCO（ユネスコ：国連教育科学文化機関）が後援しています。BIRDS Satellite Projectでは、5つの超小型衛星が開発され、宇宙に打ち上げられました。それらはガーナ、ナイジェリア、モンゴル、バングラデシュそして日本の5カ国の本学の学生諸君が開発したものです。大変嬉しい出来事でしたし、これに関わった学生の皆さん、教職員に改めてお祝いを述べ、敬意を表したいと思います。そして、私は、この表彰の中で触れられている大変興味深い次のことを紹介したいと思います。すなわち、「多様性（ダイバーシティ）はビジネスの成功においてますます重要な測定基準となって」おり、「2017年は企業幹部の69%が多様性と一体性を重要な問題と位置づけており、その数は2014年の59%から増加」しているという点です。未来を創造する活動において、多様な知を集め、活用することが大変重要になっており、そのことを理解している人も増えてきているということが分かります。

http://www.airbusjapan.com/singlejp/detail/4676c42171/

http://space.airbus.com/newsroom/press-releases/en/2017/10/geed-airbus-diversity-award-2017.html

多様性が重要であることについては、様々な指摘があります。ノーベル経済学賞受賞者であるアマルティア・セン氏は「アマルティア・セン講義Ⅰグローバリゼーションと人間の安全保障」（ちくま学芸文庫）の中で、「過去数千年にわたる世界の進歩は、交易、旅行、思想・知識・芸術・文化の拡散を促すグローバルな相互作用活動によって形成された」ことを指摘しています。

今後、皆さんが関わる技術が、様々な社会活動の基盤になり、影響を与えることになります。皆さんには、是非、人、組織等の多様性を再認識し、多様な知を集め、学び、今の世界から、謙虚に未来を想像し、明るい未来を選択し、その実現に関与して欲しいと思います。

最後になりますが、皆さんが、九州工業大学における多くの良き出会いを財産として、今後活躍されますことを祈念し、皆さんの栄えある門出を心から祝福申し上げ、告辞と致します。本日は、誠におめでとうございます。

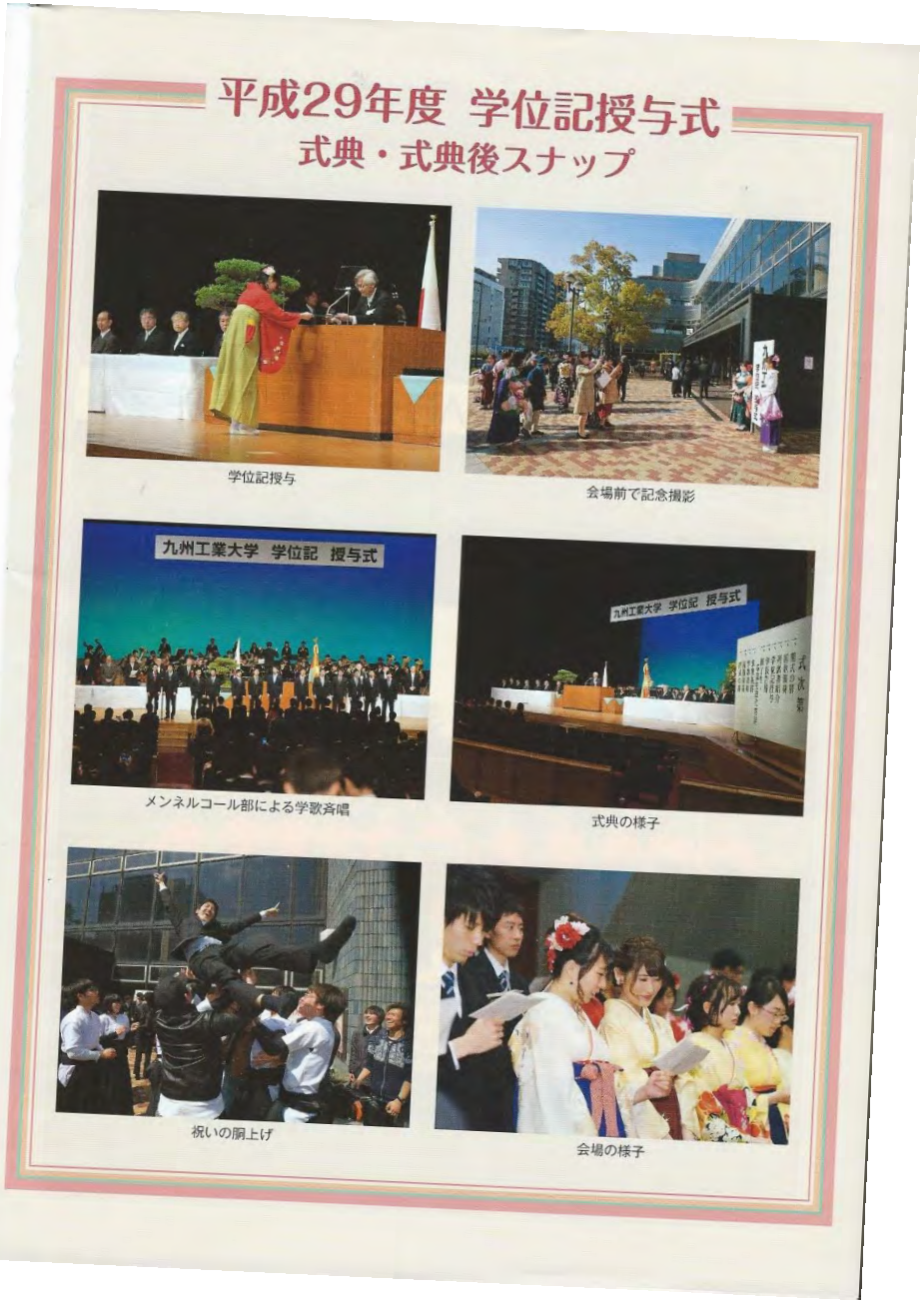
From Mei Sen Kai journal

← A discussion of the GEDC Airbus Diversity Award given to the BIRDS Project

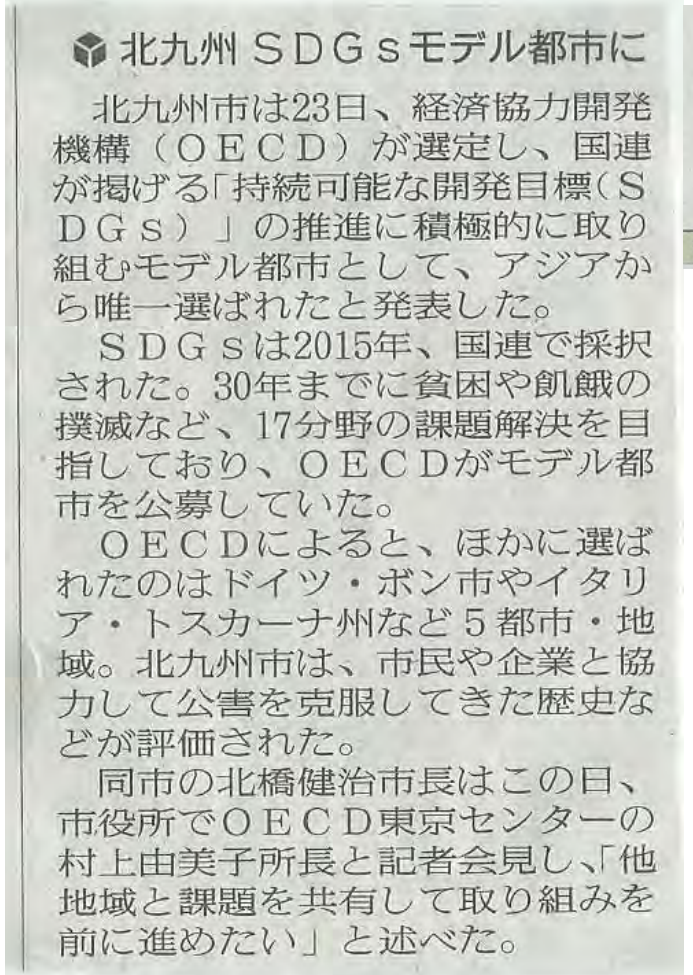
2018

Joyous scenes of graduation ⇒ (23 March 2018)

End of this section



02. News about the UN's SDG initiative (cont'd next page)



北九州ＳＤＧｓモデル都市に

北九州市は23日、経済協力開発機構（ＯＥＣＤ）が選定し、国連が掲げる「持続可能な開発目標（ＳＤＧｓ）」の推進に積極的に取り組むモデル都市として、アジアから唯一選ばれたと発表した。

ＳＤＧｓは2015年、国連で採択された。30年までに貧困や飢餓の撲滅など、17分野の課題解決を目指しており、ＯＥＣＤがモデル都市を公募していた。

ＯＥＣＤによると、ほかに選ばれたのはドイツ・ボン市やイタリア・トスカーナ州など５都市・地域。北九州市は、市民や企業と協力して公害を克服してきた歴史などが評価された。

同市の北橋健治市長はこの日、市役所でＯＥＣＤ東京センターの村上由美子所長と記者会見し、「他地域と課題を共有して取り組みを前に進めたい」と述べた。

讀賣新聞

2018年(平成30年) 4月24日 火曜

YOMIURI NEWSPAPER – 24 APRIL 2018

福岡市中央区赤坂1-16-5　電話(092)715-4311(代)　www.yomiuri.co.jp

Once upon a time, Kitakyushu was highly polluted. It was able to clean up this sorry state, however.

← The OECD (the club of rich nations) has selected Kitakyushu City as an **SDG Model City** – the only one in Asia.

"The **Sustainable Development Goals** (**SDGs**) - also known as the Global Goals for Sustainable Development - are a collection of 17 global goals set by the United Nations. The broad goals are interrelated though each has its own targets to achieve. The total number of targets is 169. The SDGs cover a broad range of social and economic development issues. These include poverty, hunger, health, education, climate change, gender equality, water, sanitation, energy, urbanization, environment and social justice. The SDGs are also known as "Transforming our World: the 2030 Agenda for Sustainable Development" or **2030 Agenda** in short. The goals were developed to replace the Millennium Development Goals (MDGs) which ended in 2015. Unlike the MDGs, the SDG framework does not distinguish between "developed" and "developing" nations. Instead, the goals apply to all countries." -- from Wikipedia

https://en.wikipedia.org/wiki/Sustainable_Development_Goals

More info about this city selection see here:

http://www.city.kitakyushu.lg.jp/kankyou/00101181.html

Businesses are also embracing the virtues of SDGs

ANA BLUE WINGが SDGsビジネスアワード 2017部門賞を受賞

2017年5月26日、「ANA BLUE WING」は一般社団法人BoP Global Network Japanと金沢工業大学平本研究室が設立した「SDGsビジネスアワード」にノミネートされ、このたび部門賞を受賞しました！

「SDGs」とは、国連に加盟する世界193カ国が合意した、17項目からなる「持続可能な開発目標」のこと。社会課題解決型事業の分野で、取り組みが遅れていると捉えられがちな日本での様々な活動を、国際的に広く紹介することをめざして「SDGsビジネスアワード」が制定されました。
第1回目となる今回、「ANA BLUE WING」は、途上国と先進国双方の社会課題解決に貢献した企業に贈られる「クロスボーダー賞」を受賞。表彰式ではBLUE WINGプログラムに取り組んだ、社内の有志メンバーたちが盾を受け取りま

(cont'd next page)

See here for full details:
https://www.ana.co.jp/ana_news/2017/06/21/20170621-1.html

The support of SDGs in Nigeria . . .

SUSTAINABLE DEVELOPMENT GOALS
OFFICE OF THE SENIOR SPECIAL ASSISTANT TO THE PRESIDENT

HOME ABOUT US GOALS PARTNERS EVENTS MEDIA CONTACT

A new sustainable development agenda

Voices around the world are demanding for leadership role and direction in the fight against poverty, inequality, and climate change. To turn these demands into actions, world leaders gathered on 25 September, 2015, at the United Nations in New York to adopt the 2030 Agenda for Sustainable Development.

The 2030 Agenda comprises 17 new Sustainable Development Goals (SDGs), or Global Goals, which will guide policy and funding for the next 15 years, beginning with a historic pledge to end poverty. Everywhere. Permanently.

The Global Goals replace the Millennium Development Goals (MDGs), which in September 2000 rallied the world around a common 15-year agenda to tackle the indignity of poverty.

This new development agenda applies to all countries, promotes peaceful and inclusive societies, creates better jobs and tackles the environmental challenges of our time—particularly climate change.

Princess Adejoke Orelope-Adefulire

Senior Special Assistant to the President on SDGs

Welcome to the Sustainable Development Goals in Nigeria.

http://sdgs.gov.ng/

(cont'd next page)

The support of SDGs in Bangladesh . . .

Dhaka Tribune

"SDG creating new markets for private sector"

SM Abrar Aowsaf
Published at 11:05 PM February 18, 2018

Speakers at the third Annual Economists' Conference, Mahmud Hossain Opu

'Industrial, agricultural, jute and ICT policies must be aligned with the aim of achieving SDG'

The Sustainable Development Goals (SDG) have opened up new markets for the private sector that need to be explored and require policy alignment, speakers at an economic conference have said.

*Economists and business leaders gathered at Dhaka's **Brac** Centre Inn yesterday for the third Annual Economists' Conference, discussing the country's future and the role of the private sector in it.*

The topic of yesterday's session was 'Reforms needed to facilitate private sector engagement for SDG achievement in Bangladesh.' The session was jointly organized by the South Asian network on Economic Modelling (SANEM) and the Dhaka Metropolitan Chamber of Commerce and Industry (MCCI).

"SDG is creating new markets that were previously inaccessible to the private sector," explained M Masrur Reaz, senior economist in the Trade and Competitiveness Global Practice of World Bank, citing greater participation in health and education sectors as an example . . . .

https://www.dhakatribune.com/business/economy/2018/02/18/sdg-creating-new-markets-private-sector/

03. BIRDS-2 team socializes over pizza

BIRDS-2 Pizza Dinner Party!!!

Date: 25th April, 2018

Venue: SVBL 3rd Floor Lobby

Participants: BIRDS-2 team members

This report prepared by:
Yeshey, BIRDS-2, Bhutan

On 25th April, 2018 BIRDS-2 team members gathered at the SVBL 3rd floor lobby for a pizza dinner party sponsored by the project manager Joven.

BIRDS-2 team members posing for a group photo

A variety of pizza flavors including halal were served with orange and apple juice

A group photo taken during the pizza dinner party

Cheki, Joven and Kiran enjoying the pizza

Overall, it was a great team bonding session. Team members livened it with fun conversations and discussions about university life and satellite project.

Thanks to Joven for the treat ! ! !

End of article by Yeshey

04. Fifth UNISEC-Global Meeting Photo Report

http://www.unisec-global.org/pdf/uniglo5/UNIGLO5_photo_report_v2.pdf

To see what kind of things that **UNISEC-Global** does, have a look at this photo report of the Rome meeting of December, 2017.

Join the consortium !

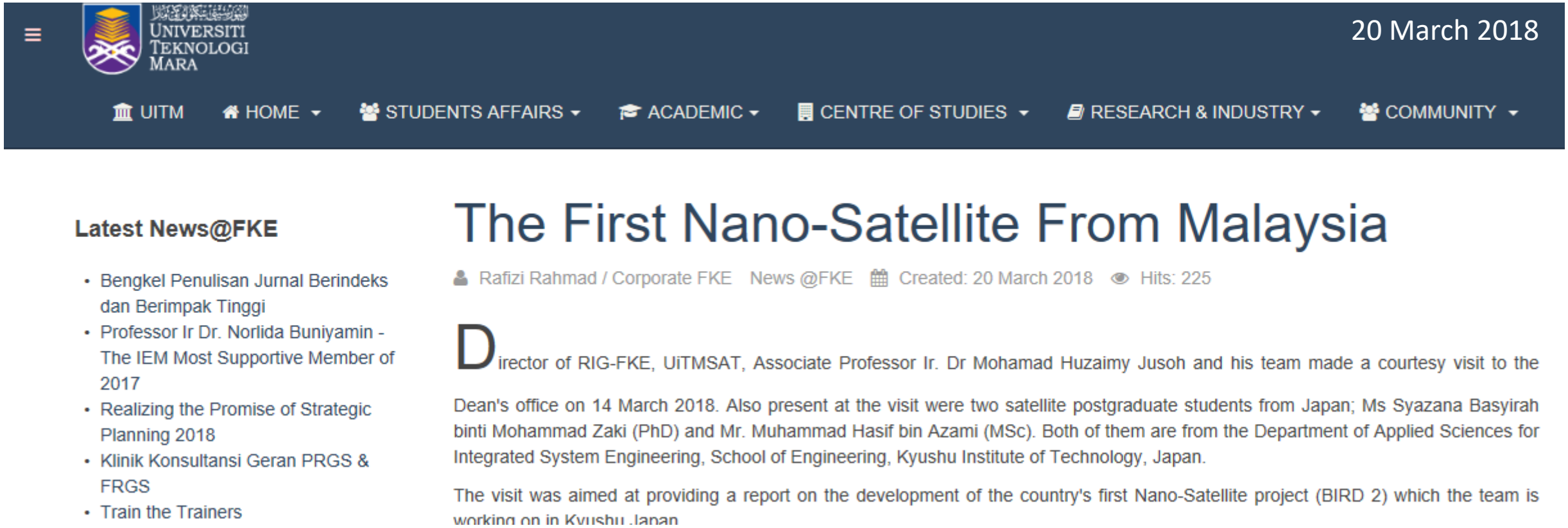
CONTINUED ON THE NEXT PAGE

Above: Presentation by a Thai student from Kyutech – he was in the editor's PBL class.

Group photo of the participants of the Rome meeting – December of 2017.

End of this section

05. UiTM web news: UiTM team meets the Dean



SEE PHOTO ON THE NEXT PAGE

See full article here:
https://fke.uitm.edu.my/v5x/index.php/news-events/549-the-first-nano-satellite-from-malaysia

CONTINUED FROM THE PREVIOUS PAGE

See full article here:
https://fke.uitm.edu.my/v5x/index.php/news-events/549-the-first-nano-satellite-from-malaysia

06. BIRDS is explained on Gunter's Space Page

GUNTER'S SPACE PAGE

Please make a donation to support Gunter's Space Page.
Thank you very much for visiting **Gunter's Space Page**. I hope that this site is useful and informative for you.
If you appreciate the information provided on this site, please consider supporting my work by making a simple and secure donation via PayPal. Please help to run the website and keep everything free of charge. Thank you very much.

Donate

Launch Vehicles
Upper Stages
Engines
Launch Sites
Chronology

Spacecraft by nation
Spacecraft by type
S/C Platforms

Manned Missions
Astronauts

News
Links
Books
Unit Calculator

Contact
Search
Gunter's Homepage

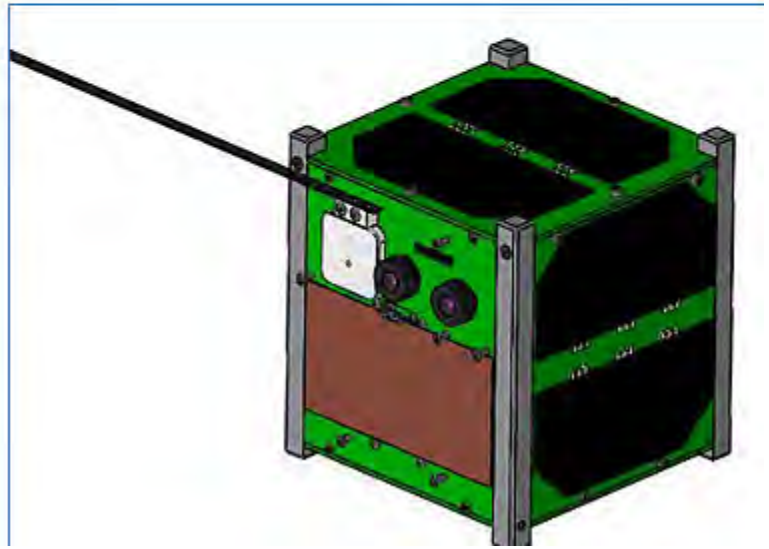
Bird B, BTN, G, J, JPN, LKA, M, MYS, N, NPL, PHL (BRAC Onnesha, Bhutan 1, GhanaSat 1, Toki, Uguisu, Raavana 1, Mazaalai, UiTMSAT 1, EduSat NepaliSat 1, MAYA 1)

Home ▸ Spacecraft by country ▸ Japan

Bird are a small technological CubeSat (1U) built by Kyushu Institute of Technology (Kyutech) as the Joint Global Multi-Nation Birds Satellite project, which is a cross-border interdisciplinary satellite project for non-space faring countries supported by Japan.

Participating countries for the Bird 1 mission are; Japan (**Toki**), Ghana (**GhanaSat 1**), Mongolia (**Mazaalai**), Nigeria (**Nigeria EduSat 1**) and Bangladesh (**BRAC Onnesha**). During the two years project, students shall design, develop and operate five units of identical 1U CubeSats belonging to the five participating countries and operating from 7 ground stations (operation is done at seven ground stations; the five participating countries including Thailand and Taiwan) to form for the first time in the world a constellation of five CubeSats operated in seven networked ground stations. 15 students from six of the seven participating countries who belong to Graduate school of Engineering of the Kyushu Institute of Technology and enrolled as a Master or Doctoral degree students in Space Engineering International Course are executing this project with the support of faculty members. This project hopes to provide great leverage to students from developing nations for hands on satellite project.

A second round, BIRDS-2, is planned for 2018 with Philippines (**MAYA**), Bhutan (**Bhutan 1**) and Malaysia (**UiTMSAT 1**)



http://space.skyrocket.de/doc_sdat/bird.htm

07. Facebook of BIRDS-3 – have a look

https://www.facebook.com/BIRDS3satellite/

08. UN small sat symposium in Brazil

Updates at the website:

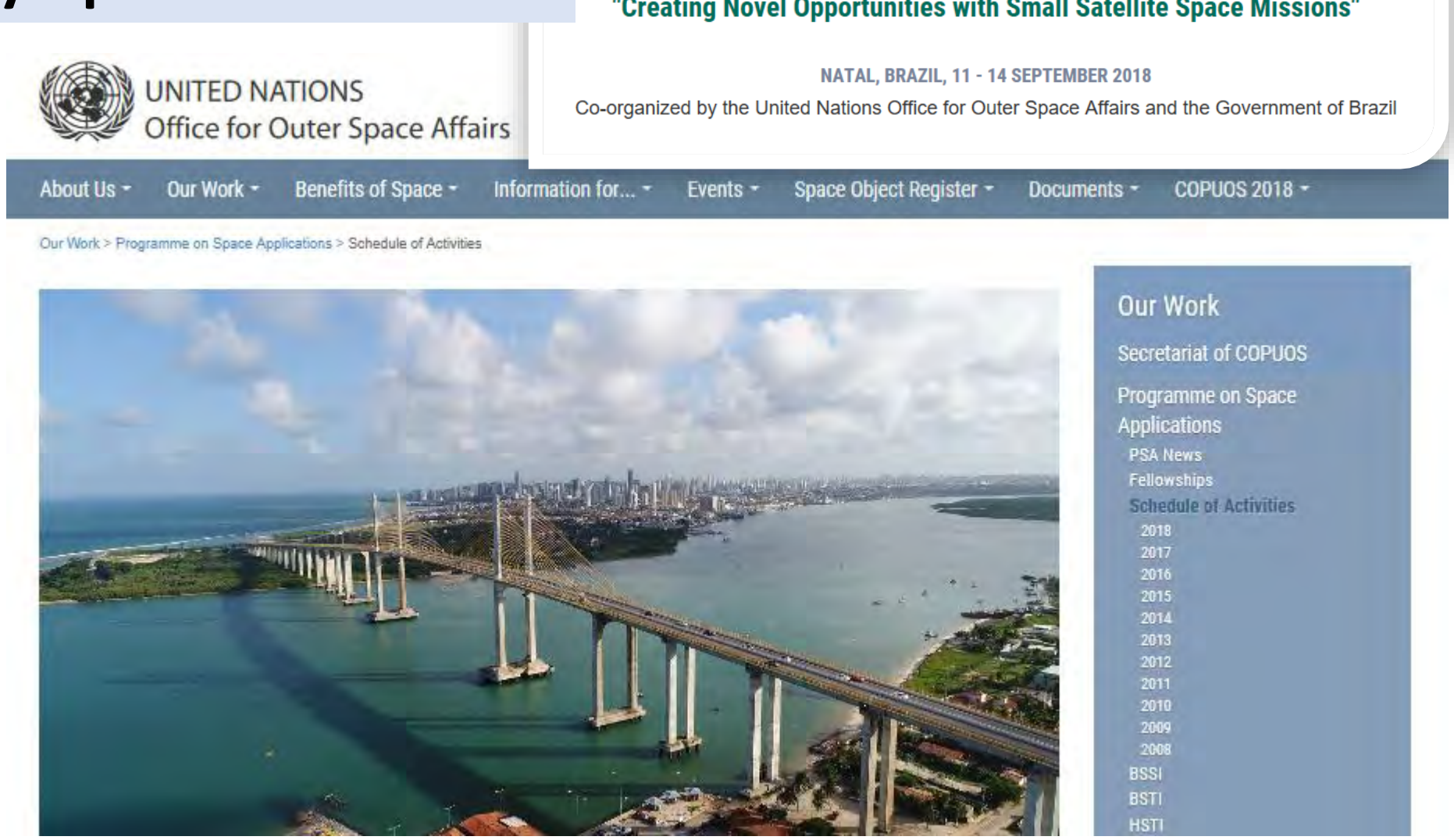
Update 11 April 2018: Industry Exhibition **(new)**
Update 11 April 2018: Hands-on Workshop **(new)**
Update 11 April 2018: Information Note **(updated)**
Update 10 April 2018: Accommodation Alternatives **(updated)**
Update 03 April 2018: Online registration is now open.
Update 14 March 2018: Accommodation Alternatives
Update 08 March 2018: Information Note

FIELD TRIP / HANDS-ON WORKSHOP

In addition to the Symposium programme, an optional field trip to the Hell´s Barrier Launch Site and the Space Visitor Center will be organized on 14 September 2018.
A hands-on workshop on nanosatellite mission design and testing will be provided for a limited number of selected participants.

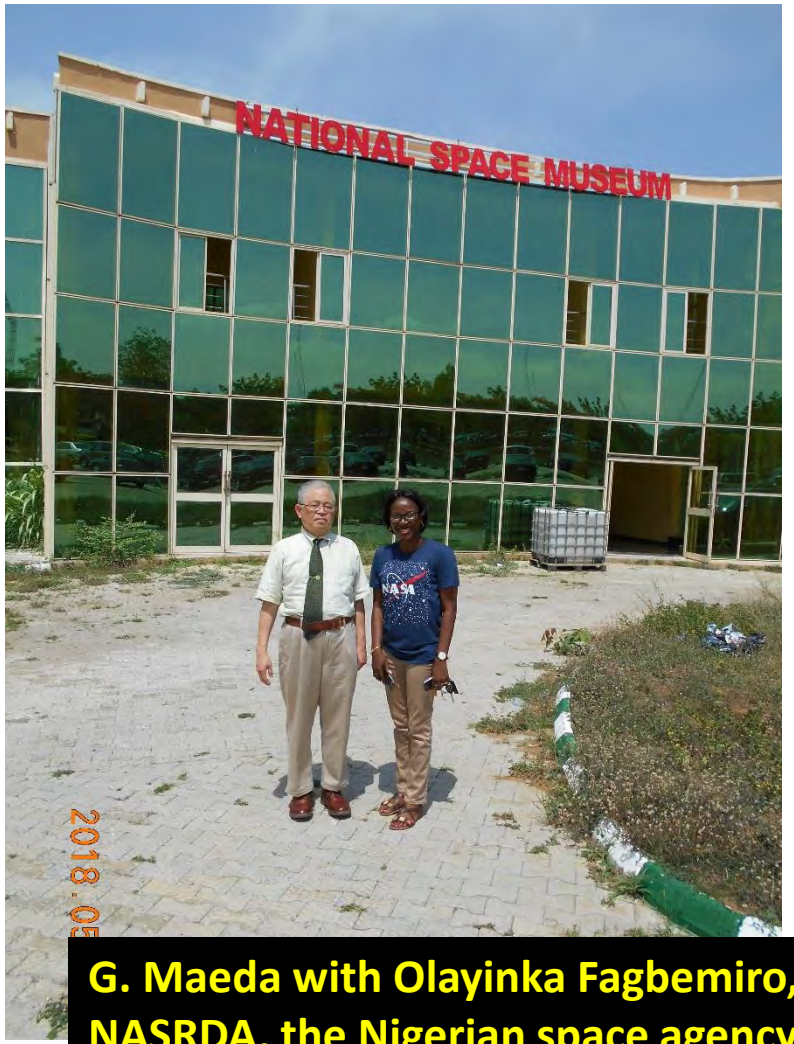
EXHIBITION

An industry exhibition will be organized in conjunction with the Symposium.



www.unoosa.org/oosa/en/ourwork/psa/schedule/2018/symposium_brazil_bsti.html

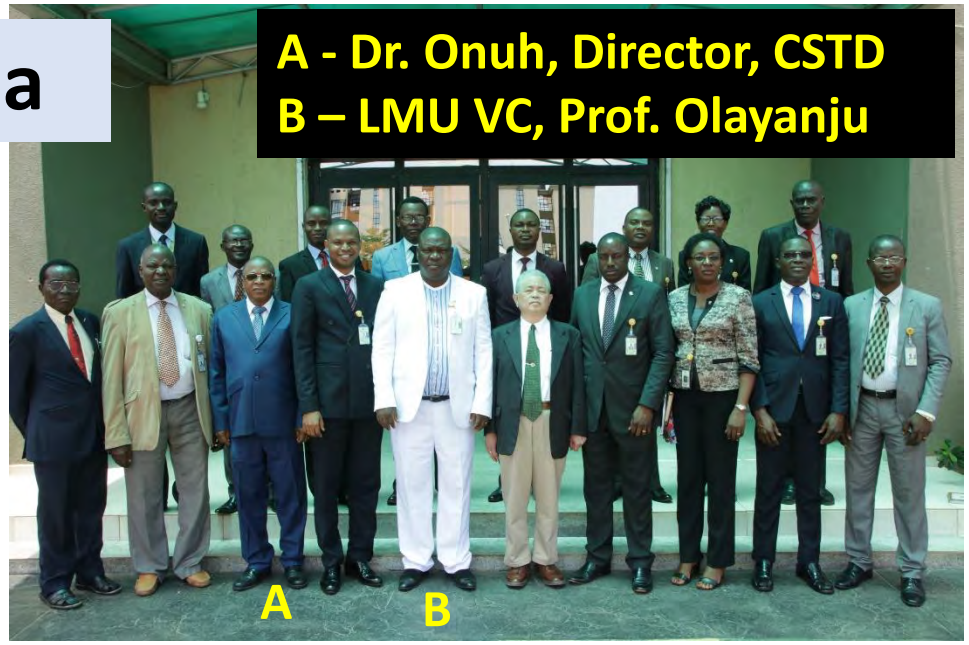
09. National Space Museum being built in Nigeria



Olayinka Fagbemiro
Principal Scientific Officer
National Space Research and Development Agency (NASRDA)
Obasanjo Space Centre,
Abuja. Nigeria.
- National Coordinator, *Universe Awareness (UNAWE)*
- National Coordinator, *Astronomers Without Borders (AWB)*

G. Maeda with Olayinka Fagbemiro, at the headquarters of NASRDA, the Nigerian space agency, on 2 May 2018.

10. Kyutech visits Landmark Univ. in Nigeria

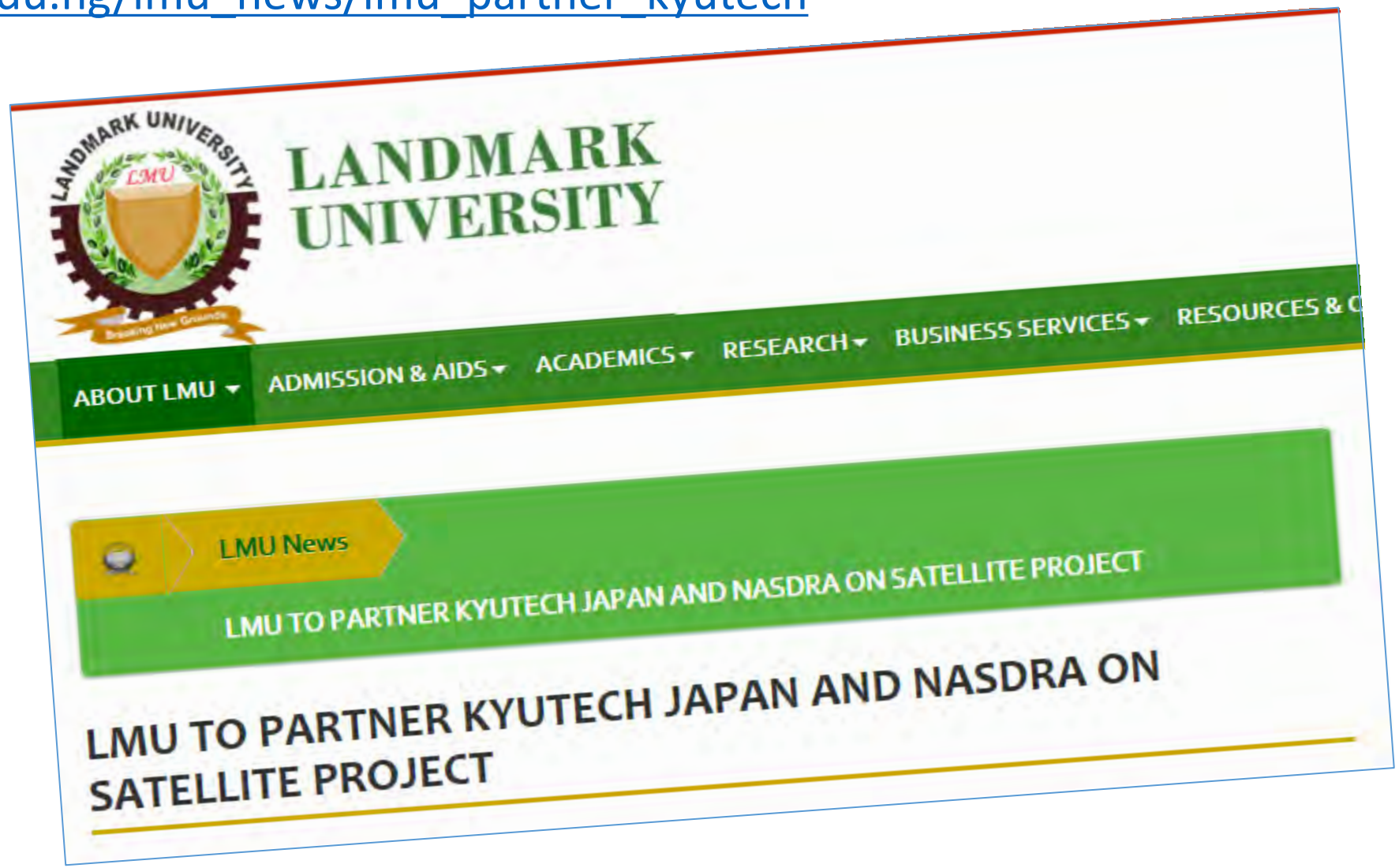


PARTICIPANTS OF THE 10 AM MEETING

On 3 May 2018, G. Maeda along with Dr S. Onuh (NASRDA) visited LMU to explain the capacity building programs of Kyutech.

For more details on Kyutech's visit to LMU see also the website of Landmark University:

https://lmu.edu.ng/lmu_news/lmu_partner_kyutech



11. Reminder to acknowledge the support of JSPS

When you publish something that is remotely related to BIRDS, please include the statement below. It helps us with more funding from JSPS. After your work is published, please send pdf copy to me and Prof Cho. We enter it into our records.

Acknowledgement of support

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

The JSPS rooster story →

JSPS Logo Mark

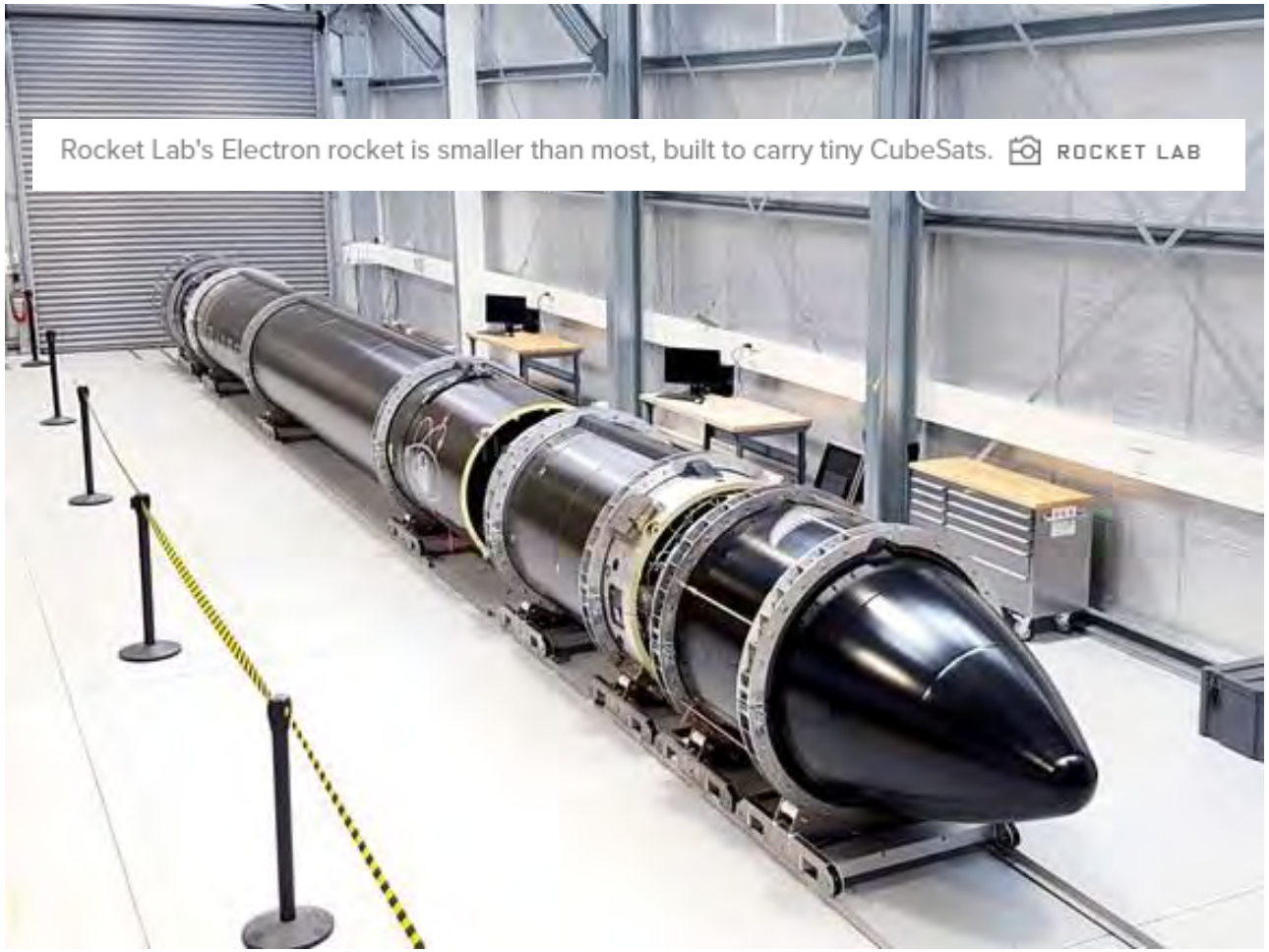
Crowing Rooster, logo of the Japan Society for the Promotion of Science

From days of old in Japan, it has been the belief that the vigorous cry of the rooster in the gray of the morning augurs the coming of a new and bright day. As the crowing rooster can therefore be thought of as a harbinger of the kind of new knowledge that promises a brilliant future for humankind, it was chosen as the logo of the Japan Society for the Promotion of Science.

This logo was designed in 1938 by Professor Sanzo Wada of Tokyo Fine Arts School to depict the rooster that symbolizes the breaking dawn in a verse composed by Emperor Showa.

JAPAN SOCIETY FOR THE PROMOTION OF SCIENCE
日本学術振興会

12. A rocket designed for CubeSats



https://www.wired.com/story/rocket-lab-still-testing/

SARAH SCOLES SCIENCE 01.20.18 09:06 PM

THE LITTLE ROCKET THAT COULD SENDS REAL SATELLITES TO SPACE

WIRED

The launch company Rocket Lab has amusing names for its missions. The first, in May, was called “It’s a Test” (it was). When the staff debated what to call the second launch of their diminutive Electron rocket, so sized (and priced) specifically to carry small satellites to space, they said, “Well, we’re still testing, aren’t we?”

They were. And so “Still Testing” became the name of Rocket Lab’s second launch, which took place on January 20, at around 8:45 pm Eastern Standard Time. In December, the company canceled multiple attempts before rescheduling the launch window for 2018. The livestreamed rocket lifted off from the Mahia Peninsula in New Zealand, headed for someplace with an even better view.

Despite the uncertainty surrounding the launch (or any test launch, for that matter), the rocket was carrying real payloads for real customers: three small satellites, one for a company that images Earth and two for one that monitors weather and ship traffic. But why on Earth would a satellite company choose a rocket-in-progress when there are so many reliable launchers out there? After all, even established rockets blow up sometimes.

Rocket Lab

The short answer is that smallsats—which the Electron was built to transport, exclusively—are by nature expendable. Smallsat makers like **Planet and Spire**, the two clients on this mission, have ever-growing, genetically similar populations of orbiters. So losing one or two in a less-than-successful test flight? Probably worth the risk. Smallsat companies are willing to put their hardware on this particular liftoff line because the Electron is poised to be the first commercially bookable rocket built specifically for small payloads, which typically have to piggyback on big, expensive rockets with big, expensive payloads that don't launch often enough and aren't always headed to their orbit of choice. In the next decade, 3,483 small satellites (between 1 and 100 kilograms) will go to space, generating just over $2 billion of launch revenue, according to the Small Satellite Markets, 4th edition report, which research and consulting firm Northern Sky Research released last month. In this future world where thousands more smallsats provide environmental, economic, and even political intelligence, as well as Earth-covering internet, the test-steps necessary to get on up to space quickly, cheaply, and precisely seem worth the risk not just to Planet and Spire but, perhaps, to you and me.

But boy, was there risk. While Rocket Lab's first Electron didn’t explode and did reach space—and so gets at least an A- for its first attempt—“It’s a Test” didn’t quite get to orbit. After an investigation, Rocket Lab determined that, four minutes post-blastoff, ground equipment (provided by a third party) temporarily stopped talking to the rocket. When

communication breaks down, Official Procedures demand that safety officials stop the flight. And so they did..
But the rocket itself, according to the same investigation, was sound—so the company moved on to a test delivery. “It's really the next logical step,” says Peter Beck, Rocket Lab’s founder.
Beck seems uncannily logical about the risks his young company is taking. When asked about his feelings about launching actual stuff on “Still Testing,” he replied that doing so certainly involved extra actual tasks. “I'm not sure if you can become extra nervous or extra excited,” he said. That sentiment fits with the launches’ pragmatic names. And those fit with New Zealanders’ general pragmatic streak, says Beck (he cites some of the country’s names for flowing water: “River One,” “River Two,” “River Three”).

For their part, Planet and Spire are here for that no-nonsense-ness. Planet already has around 200 satellites in orbit, so adding one to its flock of so-called "Doves" would be good but not critical. Besides, says Mike Safyan, Planet's director of launch, “we picked one we wouldn't miss too much": a sat named Pioneer. It’s a double meaning, says Safyan. First, it's an homage to NASA’s old missions, on whose shoulders they stand.
Second meaning: They are pioneers. “There is this New Space wave that Planet is very much at the forefront of and Rocket Lab is very much at the forefront of,” says Safyan.
This is what the forefront looks like, by the way: You can book space on an Electron rocket online—just click the size of your smallsat!—the same basic way you’d book a bunk on Airbnb.
Spire, too, is into it. Jenny Barna met Peter Beck before she had her current job, as the director of launch at Spire, whose satellites aim to keep track of aeronautical and nautical-nautical traffic, as well as weather. Back in her days at SSL, which makes spacecraft and communications systems, a coworker invited her to a presentation Beck was giving on-site. She listened to Beck describe Rocket Lab’s technology, and his vision for a vehicle

that provided frequent, affordable launches just for little guys—in an industry that caters to huge sats, and makes smallsats second-class passengers—and she was intrigued. “I remember sitting there thinking how lucky I am to be working at this industry at this time,” she says. And after she moved to Spire, she led the company to sign on as one of Rocket Lab’s first customers. It's currently contracted for up to 12 launches.

That's a lot! But Spire has to launch a lot. The company wants access to space every month, so they can produce their satellites in small batches, send them up, iterate, and launch the next generation. So far, counting today, Spire has launched 54 satellites. They’ve done it on the rockets of Russia (Soyuz and Dnepr), Japan (H-IIB), and India (PSLV), and the rockets of the US's Orbital (Antares) and ULA (Atlas V). And now, they’ll ride with Rocket Lab, picking on a rocket of their own satellites’ size.

But that doesn’t mean they’ll ever only use Rocket Lab. Or Orbital. Or ULA. They plan to keep their eggs distributed—partly because even when it’s not just a test, rockets still blow up, the eggs breaking along with them. “It's just part of the industry,” says Barna.

When Barna spoke of “Still Testing” a few days before the initial launch window, she was straight-up about the possibility that this particular rocket wouldn't carry the eggs safely to space. “We know that a million things have to go perfectly for this to be successful,” she said. “We hope they make history.”

They did, and deployed the three-satellite payload into orbit. And pending analysis of this seemingly successful test, Rocket Lab will skip its planned third test and jump straight into official operations, in early 2018. “We've got a lot of customers that need to get on orbit,” says Beck.

Suggestion for the third flight’s name: “This Is Not a Test.”

https://www.wired.com/story/rocket-lab-still-testing/

MORE ON SMALLSATS

SARAH SCOLES

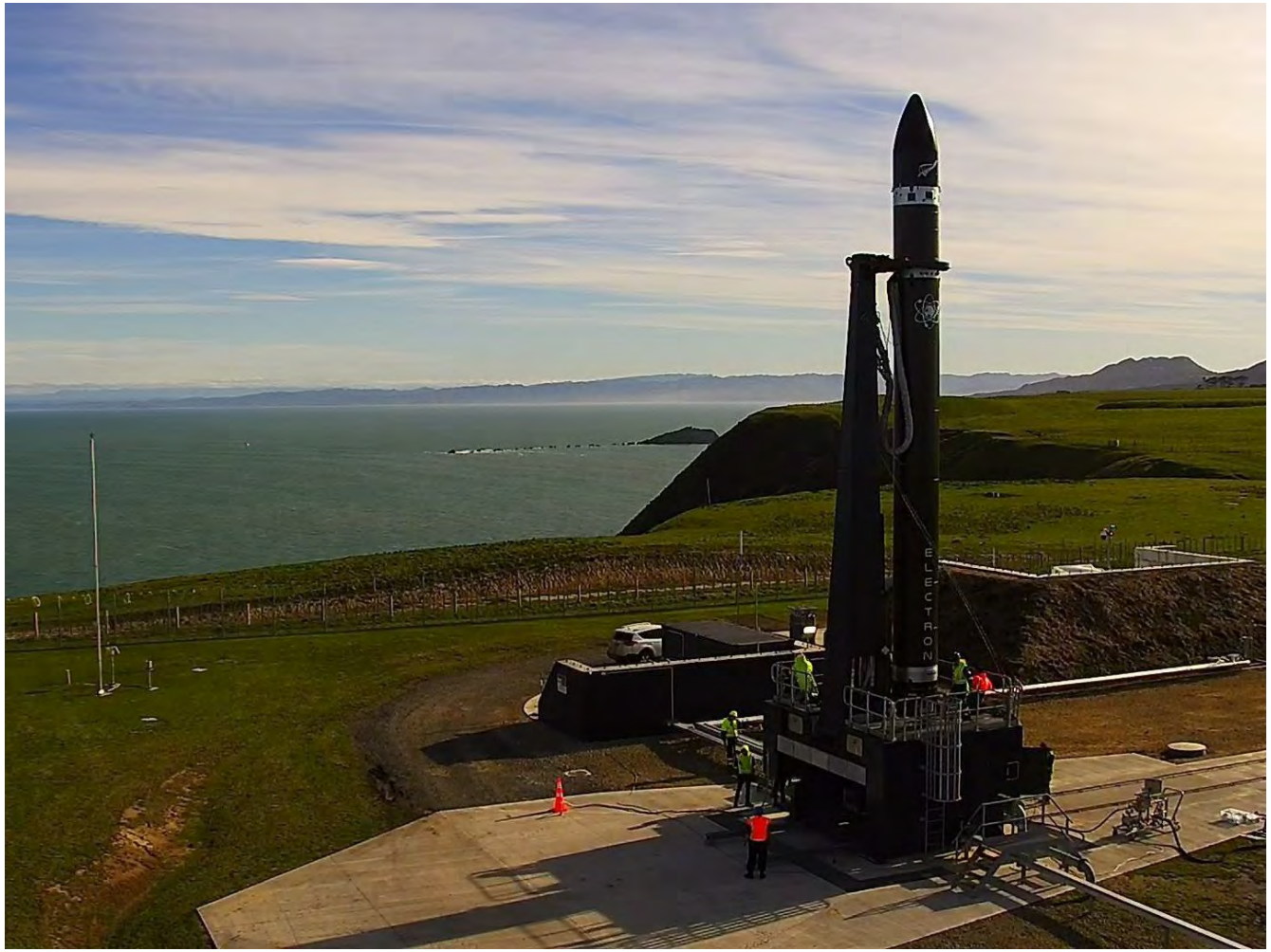
This New Goldilocks Rocket Is Juuust Right for Small Satellites

SARAH SCOLES

The Race to Rule the High-Flying Business of Satellite Imagery

SARAH SCOLES

Upending the Space Biz With Satellites for You and You and You



© Rocket Lab

https://www.wired.com/story/rocket-lab-still-testing/

End of this article

13. Kyutech participates in TAS: Transform Africa Summit in Rwanda

7 – 10 May 2018, 4000 participants

http://transformafricasummit.org/

About the Summit

The Transform Africa Summit is the Smart Africa flagship event. Following three successful editions, the fourth Transform Africa 201 Summit will take place at the Kigali Convention Center from 7 – 10 May 2018.

Under the theme 'Accelerating Africa's Single Digital Market', the summit is expected to attract over 4,000 participants, including Heads of State and Government, First Ladies, UN Broadband Commissioners, Ministers, Public & Private Sector, International organisations, Industry leaders, Investors, Entrepreneurs, Young innovators, Civil Society and Academia.

This year's summit will also feature the first Transform Africa Economic Forum, a Government to Business engagement which will take place on 7 May 2018, where attending Ministers and Cabinet Secretaries will engage with a targeted audience of business leaders and high net worth investors on investment opportunities and areas of collaboration.

Who is attending this year?

- Heads of State and Government
- First Ladies
- Ministers in ICT, Finance, Trade & Industry and Health
- Fintech companies
- Blockchain experts
- Digital health service providers
- Artificial Intelligence firms & experts
- ICT Private Sector service providers
- Telecom & Utilities regulators
- International & Multilateral organizations
- Africa's business influencers
- Investment banks & Venture capitalists
- Private equity fund managers
- Start ups
- Women & Girls in ICT champions
- Tech innovators
- Academia, consultants & leading digital leaders
- Non-governmental organizations

The delegation from Japan is about 80 persons – including G. Maeda of Kyutech.

Transform Africa Summit 2017
CONNECT - INNOVATE - TRANSFORM

Program

Monday 7 May	Tuesday 8 May	Wednesday 9 May	Thursday 10 May
Transform Africa Economic Forum	Transform Africa Summit	Transform Africa Summit	Golf Tournament
Platinum & Gold delegates, Invited Government Officials	All Delegates	All Delegates	Platinum tournament participants

THE VENUE OF TAS – Kigali, Rwanda

The session on space topics

Digital Transformation Hub

Space Inclusion: Leveraging new lean space technology for SDGs

Custom Session | MH2B

Silver, Gold & Platinum delegates

2:00 PM, Wednesday, 9 May 2018

Conversation Leaders

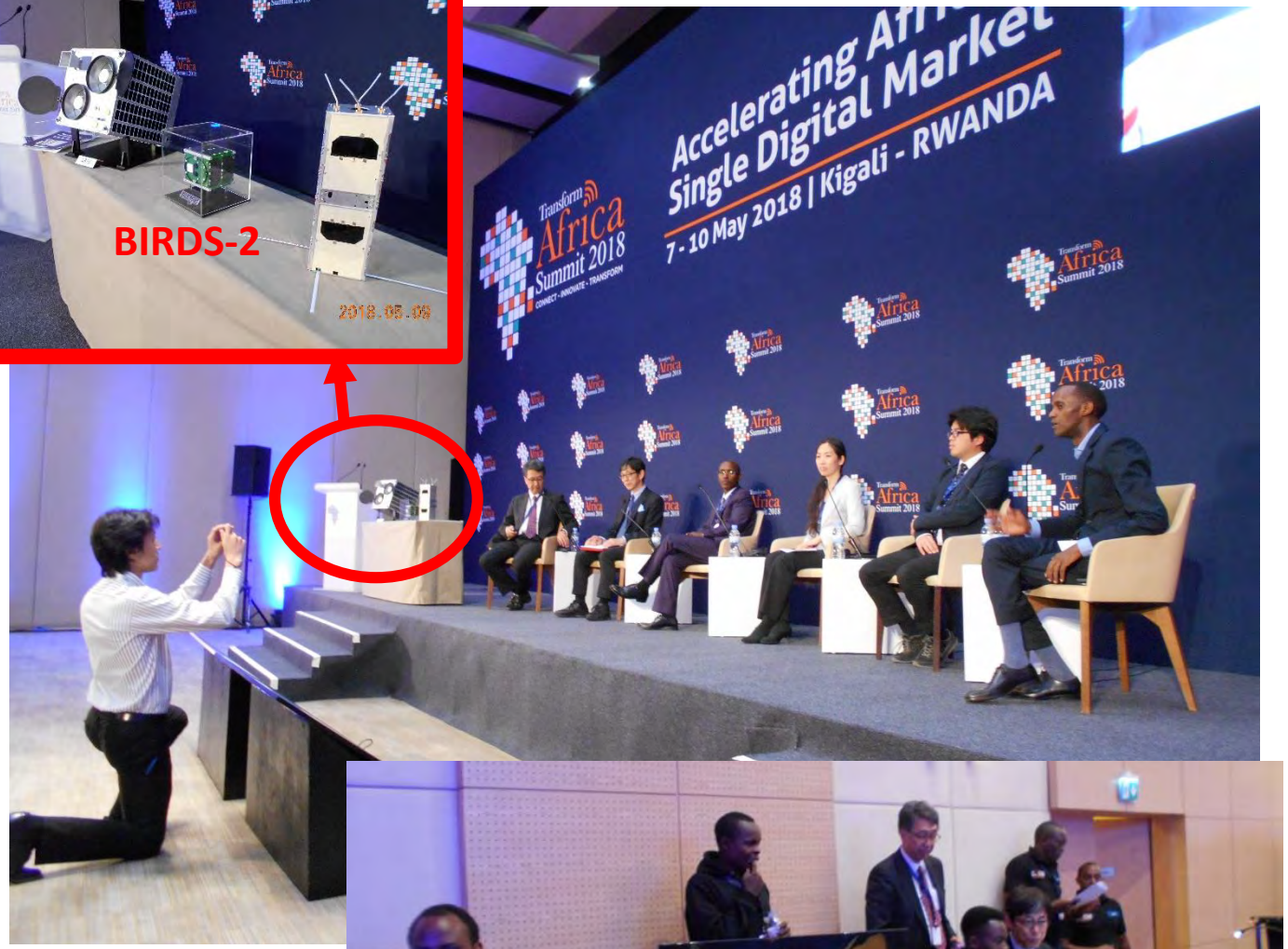
Prof. Shinichi Nakasuka, Professor Department of Aeronautics & Astronautics, School of Engineering, University of Tokyo
Mr. Yasuhiro Yukimatsu, Director General Japan National Space Policy Secretariat
Prof. Shibasaki Ryosuke, Center for Spatial Information Science, Tokyo
Ms. Naomi Kurahara, CEO & Founder Infostellar
Dr. Ignace Gatare, Principal, UR CST,

Special Interventions

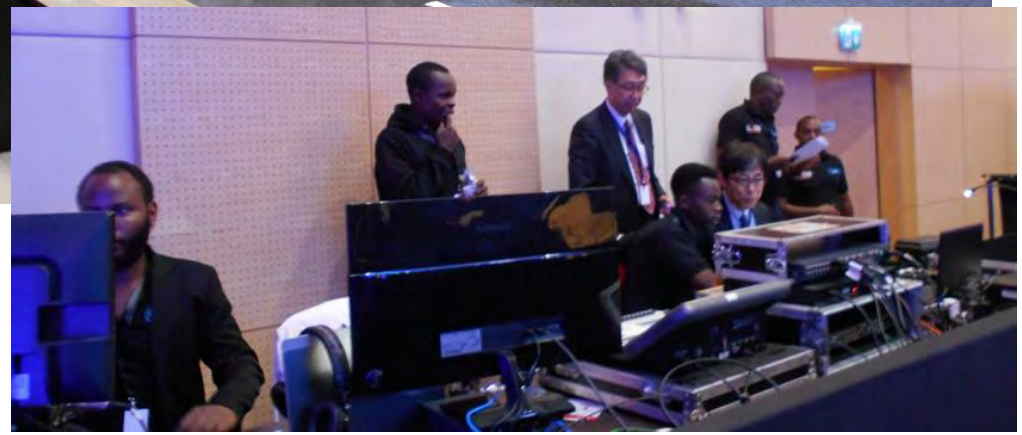
Piotr Dmochowski-Lipsk,, Executive Secretary and legal representative of the European Telecommunications Satellite Organization, EUTELSAT IGO
Rashad Nabiyev,, Chairman and CEO, AzerCosmos

Moderated by

Alex Ntale, CEO, ICT Chamber



Warming up at the bench



Transform Africa Summit 2017
CONNECT - INNOVATE - TRANSFORM

GM explains BIRDS-2 to the ICT Minister 大臣 of Rwanda on 9 May

Alex makes introductions

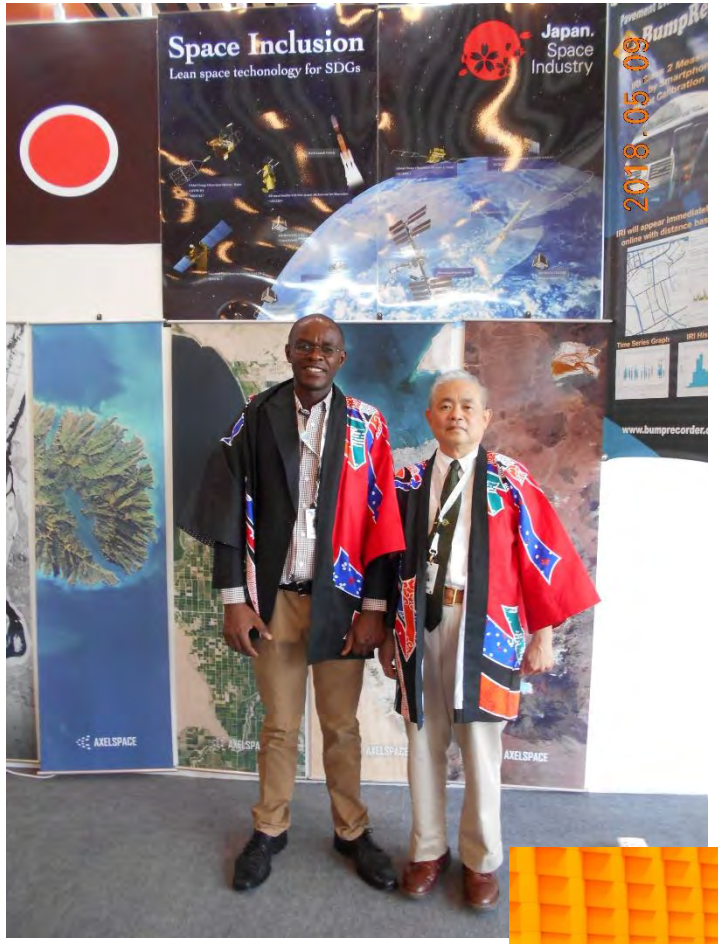
"Gee, it is smaller than a football."

"So how much does it cost?"

GM says, "Any country can make one."

飛び道具

Some of the visitors to the Kyutech booth on 9 May



"We can teach you how to make one."
Photo from: 宇宙利用新領域開拓機構　川窪

Transform Africa Summit 2017
CONNECT - INNOVATE - TRANSFORM

14. Thai students of Kyutech create video to promote SEIC

View the video with English subtitles:
https://www.youtube.com/watch?v=QgYO8mw3GGE

KING MONGKUT'S UNIVERSITY OF TECHNOLOGY NORTH BANGKOK
มหาวิทยาลัยเทคโนโลยีพระจอมเกล้าพระนครเหนือ

The Thai video was used by Meemak, one of my students, at his home university.

Dear Maeda-sensei,

During my stay in Thailand, I had the opportunity to introduce DDP to bachelor students in Dr. Phongsatorn's class.
I opened the video that was made by Pao-senpai and Air for introducing the SEIC program and environment in our lab.
Furthermore, I also shared the experiences, how to study in DDP program and how to prepare themselves for DDP.

[at the left] you can see the photo taken by Dr. Phongsatorn.

Best regards,
Phongsakorn Meemak
Bangkok, 10 May 2018.

15. Visit of Bhutan by members of Kyutech

Kyutech
Kyushu Institute of Technology

BIRDS-2 PROJECT CUBESAT

Kyutech visits Bhutan

Prof Cho and Dr. Pauline visited Bhutan to attend the Workshop on First Satellite of Bhutan along with 4 Students from Bhutan studying in KyuTech (BIRDS-2 members)

--written by Kiran Kumar Pradhan, BIRDS-2 Member (Bhutan), 11 May 2018

Entering Bhutan

(Left) View of mountains through the window of the plane while approaching Bhutan.

(Right) View of Paro Valley as the plane maneuvers between the mountains making a approach towards the airport.

(right) Picture of Kings of Bhutan Welcoming the passengers near the arrival gate.

(Left) Picture of the Royal Family of Bhutan adored by the Foreigners entering Bhutan

Evening stroll around the Capital: Thimphu


© Dr. Pauline


© Dr. Pauline

(Up) Famous Clock Tower Square. Hangout place for youths.

(Right)Peach Blossom: the beauty of the spring season.


© Dr. Pauline

(Down) Walk on the most busiest street of the Capital: the Norzin Lam. But it still does not have a street light and the traffic is controlled by the traffic police.


© Dr. Pauline

(Left) A well decorated round about on the main street of the Capital. The background shows two types of buildings in Bhutan: on the right, the smaller house is a typical traditional structure made of Mud while the one on left (taller) is the new architecture spreading in the country, made of concrete but still retaining the traditional touch (eg. carvings on the window pane).


© Dr. Pauline

The Memorial Chorten

© Dr. Pauline

The Memorial Chorten was built in memory of His Majesty the Thrid King of Bhutan who is considered as the Father of Modern Bhutan. It was under his reign that the very first roads were constructed in the country connecting to India which opened up the trade route. He introduced western science and technology while maintaining the culture and tradition of the country and brought in international aids for development.


© Dr. Pauline


© Dr. Pauline

Chorten: The word means “Seat of Faith” and elderly people can be seen through out the day circumambulating and reciting prayers.

https://www.bhutan.travel/attractions/national-memorial-chorten

Visit to MoIC


© Dr. Pauline

(Left) Prof Cho posing with two of his students from Bhutan (BIRDS-2 members) in front of the Ministry of Information and Communications Office (MoIC).

(Right) Prof Cho and Pauline with all the four Bhutanese students of LaSEINE after meeting the secretary of MoIC. Usually a government office in Bhutan has a national flag hoisted outside. Employees and all the visitors are required to come in formal attire.


© Dr. Pauline

MoIC is one of the 10 ministries under the Royal Government of Bhutan (RGoB) and currently overlooks the activities in ICT (including Telecommunications and Space) sector, Media sector, Road and Transportation sector, Aviation Sector of the country. Department of IT & Telecom is one of the 5 departments under the ministry and is a partner for BIRDS project representing the RGoB.

Meeting with MoIC Secretary


© Mr. Karma Jamyang, DITT

(Up) From left: Pooja, Prof Cho, Kiran, Dasho Karma W. Penjor (Secretary to MoIC), Cheki, Dr. Pauline and Yeshey after a meeting where the future collaboration between MoIC and KyuTech was discussed.

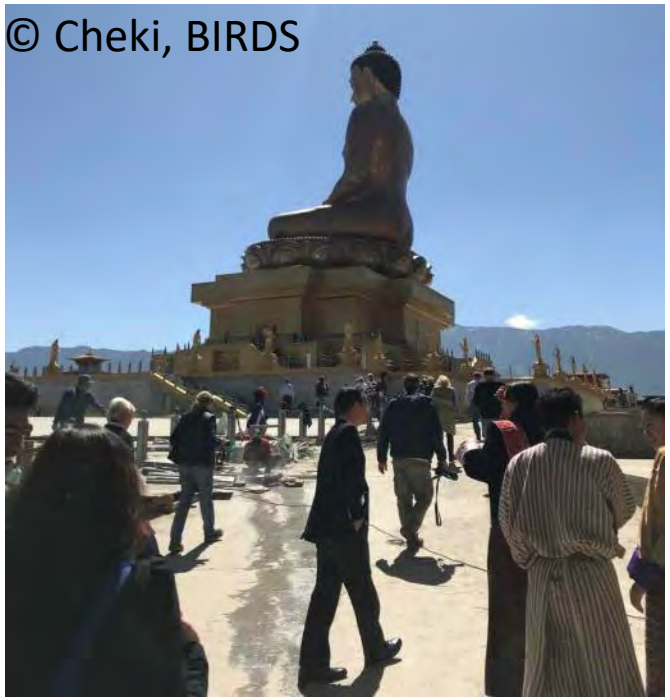

© Dr. Pauline

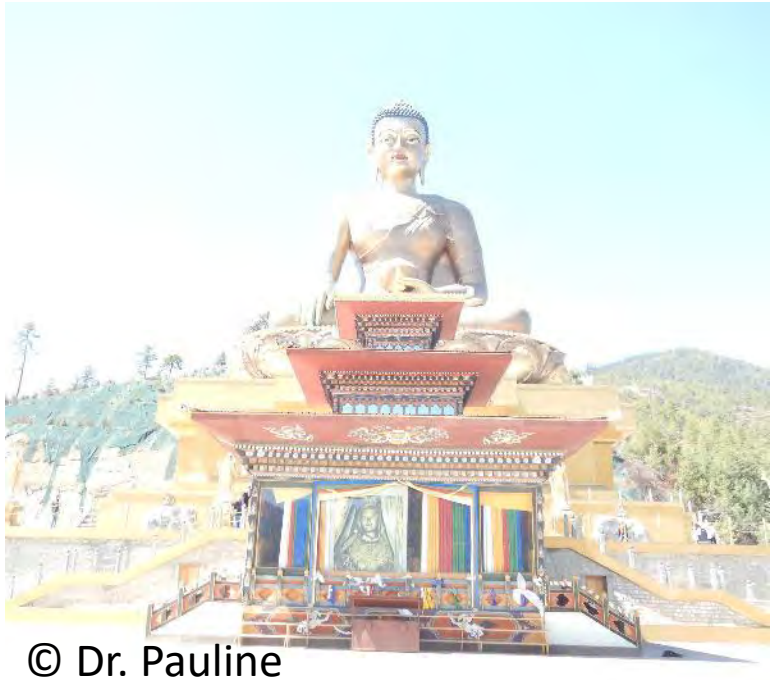

© Dr. Pauline


© Dr. Pauline

(Top left) Prof Cho presenting gift from KyuTech to Secretary.
(Top Right) Dasho Karma presenting gift to Prof Cho as a token of appreciation from MoIC.
(Bottom left) Dasho Karma presenting gift to Dr. Pauline.

Brief Sightseeing: The Buddha Point


© Cheki, BIRDS


© Dr. Pauline


© Cheki, BIRDS

The Team dropped by at the Buddha Point after the meeting with MoIC Secretary before heading towards the Workshop venue. The Buddha Point has become one of the prominent figures in the Capital of Bhutan and is visited my many tourists and locals each day. A 52 m tall Shakyamuni Buddha Statues sits on a mountain overlooking the southern approach to the Capital and is considered one of the tallest sitting Buddha. There are over 100,000 smaller Buddha statues inside which are built same as the main statue, with bronze and gilded in gold. It was build in celebration of the 60th Birth anniversary of His Majesty the Fourth King Jigme Singye Wangchuck. You can test your eye and identify Prof Cho and Dr. Pauline in the pictures above.

Bhutanese Lunch

(Up) KyuTech team having lunch at The Folk Heritage where authentic Bhutanese meals are served with traditional Bhutanese ambience.

(a) Red Rice

(b) Shakam paa: Dried Beef

(c) Shikam paa: Dried Pork

(d) Ezay: Salad with cottage cheese and spicy green chillies

(e) Suja: Butter tea with salt

The Lunch Menu included some of the authentic Bhutanese delicacies as shown above.

View of Tashichoedzong


© Dr. Pauline

(Left) The team stopped by the road to get a view of Tashichoedzong, which is a Buddhist Monastery and Fortress and it now serves as central administrative building for the country.
Tashichoedzong houses the office of the king along with the Central Monastic Body which oversees the Religious affairs. It is located close to main town of the Capital, Thimphu.
(Below) A panoramic view around Tashichoedzong and part of Thimphu valley


© Dr. Pauline

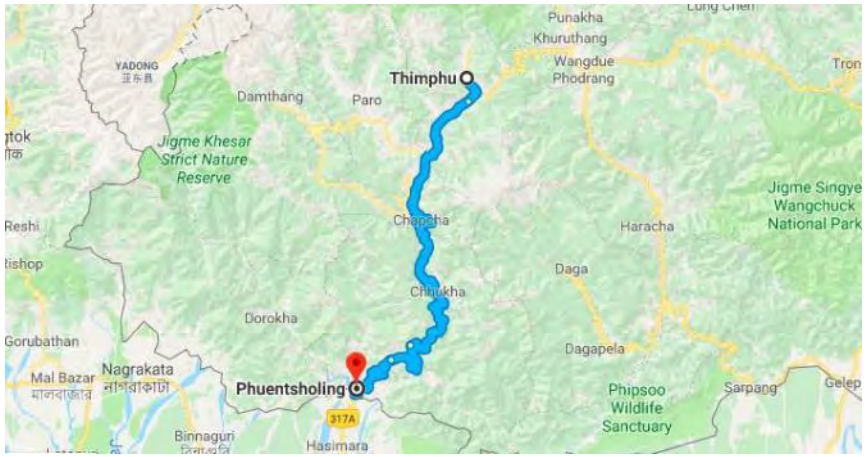
BHUTAN-1 Workshop

© DITT

(Up) Stage setup for the inaugural of the Workshop: The Workshop was hosted by the Department of IT & Telecom (DITT), MoIC. The first satellite of Bhutan, which was built as a part of BIRDS-2 project was the main topic of discussion.

(Right) Prof. Cho posing on the stage before the workshop kicked off.
The stage is filled with different Bhutanese arts and crafts work. The curtains with unique Bhutanese design and the tables hand carved with traditional Bhutanese symbols.


© Dr. Pauline



The venue of the workshop was at the College of Science and Technology (CST) which is one of the engineering institution under the umbrella of Royal University of Bhutan (RUB). The CST is located in the South West town of Phuntsholing which shares border with India. It is about 5 hours drive away from the capital, Thimphu.

BHUTAN-1 Workshop

A typical decoration that can been seen outside the venue of an event which is graced by high ranked officials.

Some of the faculty members of the CST waiting for the reception of the Chief Guest for the Workshop, The Prime Minister of Bhutan.

BHUTAN-1 Workshop

(Below) The 4 Bhutanese students currently undergoing Masters in Space engineering in KyuTech and also, member of BIRDS project greeted the Honerable Prime Minister at the entrance of the Workshop venue.

(Up) Before inaugurating the workshop, the Prime Minister met with Prof. Cho and Dr. Pauline to discuss about the BIRDS program, the schedule and BHUTAN-1 CubeSat.

(Up) The President of the CST welcomed the Honerable Prime Minister, Lyonchhen Tshering Tobgay as he approached the venue. It is a usual custom for the head of the organization to greet the Chief guest at the entrance and escort towards the venue while also apprising on how the event unfolds.

BHUTAN-1 Workshop

© DITT

(Up) Guests seated for the opening of the Workshop. Front row, from left: Ambassador Tshewang C. Dorji (Thailand), Dasho Karma W. Penjor (MoIC Secretary), Honerable Prime minister, Prof. Cho and Dr. Pauline. Back Row: Officials from District administration and PM's office.

(Right) Master of Ceremony for the day, Ms. Karma Yuden Dorjee, Official of DITT. She was in KyuTech for the GS workshop and is one of the officer responsible for BIRDS related activities in Bhutan. Seated on the left is Mr. Dawa Lodey, another officer of DITT.


© DITT

© Dr. Pauline

(Left) Dr. Cheki Dorji, President of CST gave a welcome speech to officially start off the workshop. Yes, his name is also Cheki Dorji, same as our BIRDS member from Bhutan, Cheki.

BHUTAN-1 Workshop

© DITT

(Left) Following the Welcome Speech by the president of CST, the Prime Minister gave a very inspirational talk to all the students who were attending the workshop. He also highlighted on how that District, where the workshop was held, has been the place where so many of the developmental activities for the country was initiated. Likewise, hosting the workshop on Bhutan's first satellite signified and auspicious beginning.


© DITT

(Right) After the opening remarks by the Prime Minister, everyone gathered for a group picture. More than 100 students, around 30 officials from different offices of Bhutan and the faculty members of the CST attended the workshop.

BHUTAN-1 Workshop

(Left) Mock up of BIRDS-2 CubeSat was displayed for the participants to get an idea of how the first satellite of Bhutan looks like.

(Left) View of the Hall filled with participants from the front row where Prof. Cho and Dr. Pauline were seated once the presentations began.

(Right) Participant from a government office of Bhutan, National Center for Hydrology and Meteorology (NCHM), Ms. Monju Subba. Presented the current utilization of satellite services for weather forecast by the center.

(Right) Participant from the Regulatory Authority for Frequency use and other ICT, Telecom or media related issues in the country, Mr. Wangay Dorji. Presented about the regulatory aspects involved in venturing into the space technology.

BHUTAN-1 Workshop

(Left) After the Lunch break, Prof. Cho presented about the satellite technology and talked about how space can benefit a country. Gave an introduction to lean satellite and its trend. Also, talked about how a space program can be initiated in Bhutan.

© DITT

(Right) Dr. Pauline presented about KyuTech. She gave a brief history of KyuTech and talked about how the international collaboration has expanded over the years. Then she described about the space related activities and facilities in KyuTech giving a background on how BIRDS program started.

BHUTAN-1 Workshop

© Dr. Pauline

© DITT

© Dr. Pauline

© Dr. Pauline

After the evening Tea Break, the final session of the workshop began with 4 KyuTech students of Bhutan presenting about BIRDS-2 project and their experience of building the first satellite of the country, BHUTAN-1. *(Top left)* First, Kiran gave a brief overview of the BIRDS-2 project. *(Top center)* Then, Yeshey presented on the APRS-DP mission of BIRDS-2. *(Bottom left)* After than, Cheki took the stage to present about the Camera mission, GPS mission, AMR-MM mission and SEL mission. *(Top right)* Finally, Pooja presented about the Store and Forward mission and the GST development for the demonstration in Bhutan.

BHUTAN-1 Workshop

(Below) The Chief of the Division of Telecom and Space closed the Workshop with vote of thanks

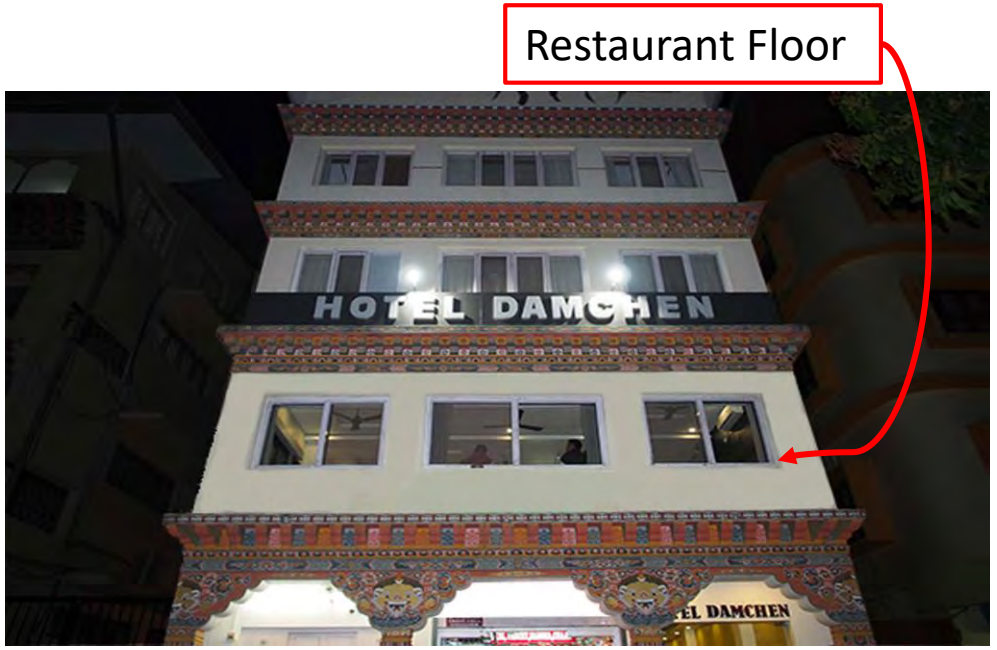
The Workshop concluded with a very interactive Q&A session. The Students expressed great interest in satellite technology and raised lot of curios questions about how satellites work, missions of the BIRDS-2 CubeSat and some questions were related to the space environment and space dynamics. Officials from different organizations (governmental and non-government) expressed their interest and raised their queries about the BIRDS-2 project and the satellite technology as a whole. *(Top Left)* An Electronics and Communications engineering student from CST raises his question. *(Top Center)* Dr. Pauline responding to one of the queries from the audience. *(Top Right)* Ambassador Tshewang, providing clarification on one of the question and further motivating students to work hard.

Closing Dinner

© Dr. Pauline

Prof. Cho hands gift from KyuTech to Ambassador of Bhutan to Thailand, Dasho Tshewang C. Dorji

The Dinner was hosted in the restaurant of Hotel Damchen.

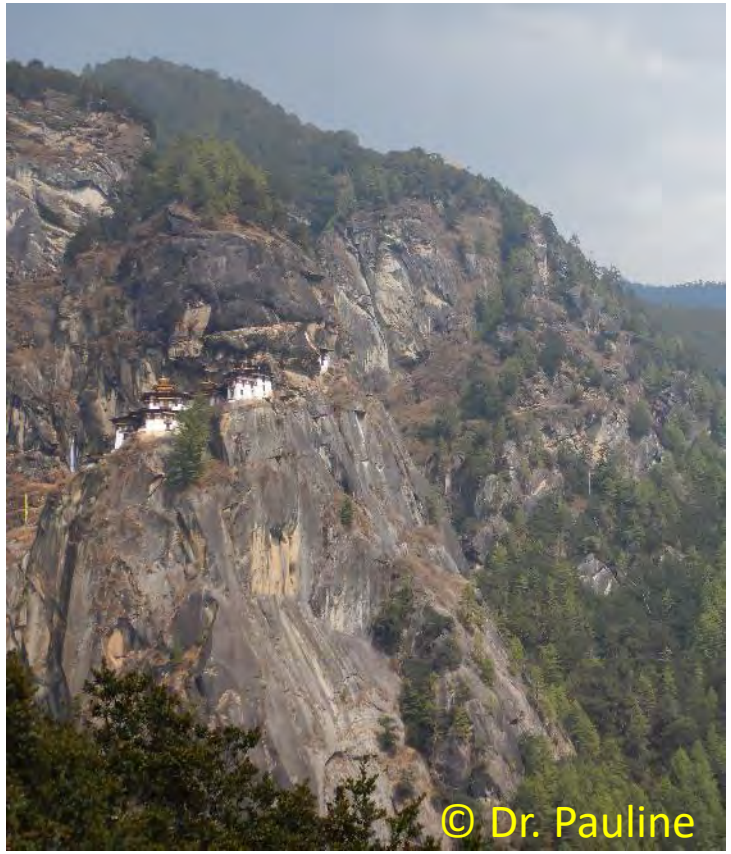


© Dr. Pauline

Prof. Cho hands gift from KyuTech to Director General of DITT, MoIC, Mr. Jigme Thinlye Namgyal

DITT hosted a simple dinner for Prof. Cho and Dr. Pauline after the end of the workshop, in the Bordering town, Phuntsholing, which is the biggest trade port for Bhutan.

Hike to Taktshang



(Up) View of Taktshang Monastry from the base of the mountain from where the hike begins.

(Left) Prof. Cho making his was up the mountain accompanied by Lotey (Yeshey's Husband on the right and Mr. Khandu, an Official from DITT on left.

(Right) Dr. Pauline posing with Yeshey on left and Pema (Yeshey's yonger sister) on right after making to the top.

To conclude their trip to Bhutan, Prof. Cho and Dr. Pauline hiked up to the Taktshang (Tiger's Nest) Monastry which is one of the most popular tourist destination. The Monastry is build on the face of a steep rocky cliff at about 3100 metres above sea level. It is about 900 metres above the Paro Valley where the only international airport of the country is located.

END OF ARTICLE BY KIRAN

Author: Cheki Dorji of BIRDS-2

BIRDS-2 Project and Bhutan

This article is excerpt from the 'BIRDS-2 Project and Bhutan' report authored by Bhutanese students of BIRDS-2 for the president of Kyutech. Kyutech president received an invitation for attending a dinner hosted by prime minister of Japan in honor of the prime minister of Bhutan in April 2018.

Note: *Opinions expressed in this report are of the author and do not necessarily represent that of the agency or institute that they are affiliated with.*

BIRDS-2 Overview

Joint Global Multi-Nation Birds Satellite project or BIRDS project is a cross-border interdisciplinary satellite project spanning over 2 years. The project's mission is to support non-space faring countries and universities build and operate their first satellite. With the first satellite of the nation, the project also makes the first step toward indigenous space program in the participating countries.

BIRDS project started off with BIRDS-1 project in which five countries participated: Ghana, Mongolia, Nigeria, Bangladesh and Japan. BIRDS-2 is a second in series of BIRDS Project with 3 participating countries: Bhutan, Malaysia and Philippines. Sri Lanka, Nepal and Japan are in BIRDS-3 project. The BIRDS-2 team comprises 11 members from 4 countries (Bhutan: 4, Malaysia: 2, Philippines: 2, Japan: 3). The 3 identical 1U CubeSats each with a dimension of 10x10x10 cm and weighing about 1.1 kg, each belonging to the participating countries, have missions as shown on the right.

1. Camera Mission
2. Automatic Packet Reporting System (APRS) Digi-peater (DP)
3. Remote data collection
4. GPS chip functionality demonstration in space environment
5. Magnetic Field Measurement
6. Single Event Latch-up (SEL) mission

BIRDS-2 Overview

Flight model of 3 satellites in Kyutech. Official name of satellites (from left to right): BHUTAN-1, MAYA-1 and UiTMSAT-1

Bhutanese Students and BIRDS-2 Project

3 Bhutanese students, who are enrolled in Masters course, joined the BIRDS-2 project from the inception in November 2016, while one more student joined in October 2017 and got involved in later stages of the project. Over the due course of project, students have actively engaged in all stages of satellite development. First stage being Mission Definition Review (MDR) in which the team members decided on the satellite missions. It was then followed by Preliminary Design Review (PDR) where students chose sub-systems and missions as their primary work besides engaging in overall project works. Bhutanese students have undertaken roles in sub-system and missions of a satellite development as listed on the right.

A delegation from Bhutan along with other stakeholders from Malaysia and Philippines, attended the next phase of review called Critical Design Review (CDR) of satellite development which was held in Kyutech in July 2017.

1. On-Board Computer Sub-system
2. Automatic Packet Reporting System (APRS) Digi-peater (DP) Mission
3. Attitude Determination and Control Sub-system
4. GPS Mission
5. Magnetic Field Measurement Mission
6. Ground Station Terminal (GST) Development.

BIRDS-2 Project and Bhutanese Space Program

1. **BIRDS-2 project has opened up discussion of space in the country**

The vision for Bhutan's first satellite and involvement in the BIRDS-2 program emanated from His Majesty The King of Bhutan. The 4 students working on the BIRDS-2 project are civil servants working in the Division of Telecom and Space under Department of Information Technology and Telecom (DITT) which is under Ministry of Information and Communication (MoIC) in Bhutan. Students will return to Bhutan after completion of their Masters degree to carry-out and enhance the space activities in the country. Royal Government of Bhutan has been very supportive of Bhutan's involvement in BIRDS-2 project. DITT organized 'BHUTAN-1 Workshop' in one of the engineering colleges in the country in March 2018. The workshop was graced by prime minister of Bhutan. Prof. Cho, Dr. Pauline and 4 Bhutanese students from Kyutech attended the workshop.

The workshop brought in different stakeholders that have relevance to space activities together for the first time in the country. Students from the college also attended the workshop and interacted at length with 4 students of Kyutech. The BIRDS-2 project and the workshop have also gained a lot of media attention making Bhutan known to international space community.

2. **Technical human resources in the country**

BIRDS-2 project has given students hands-on experiences on building satellites. Students were involved in actual satellite development from design, to construction, to testing. Through BIRDS-2 project, Bhutan now has technical human resource, albeit small, to carry out small space missions to benefit the country in different areas. In future, Bhutan can expand its technical human resource in space.

3. **Human network at the international level**

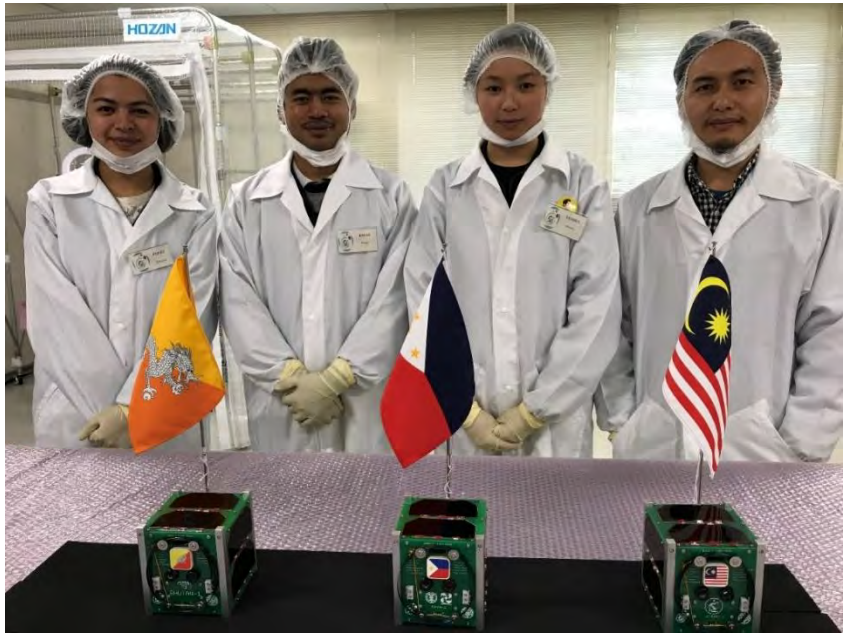
The project not only provides a platform for the developing nations to get engaged in the process of developing and operating a satellite but it also creates an opportunity for international collaboration. The BIRDS program provides the platform to establish the human network and collaboration among different countries as follows:

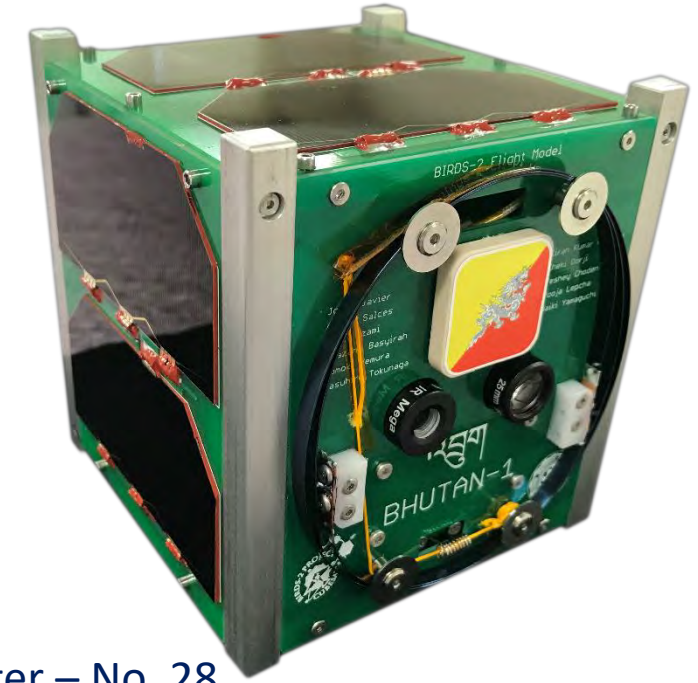
- The students from different nations work as a single team to design, build and operate the CubeSats.
- The CubeSats are operated through the constellation of ground stations with a ground station located in many participating countries.

4. **Students can form core team in taking ahead Bhutanese space program**

Besides working on satellite, students have to attend lectures and other laboratory obligations. Among lectures, the lecture on 'Space Law and Policy' have exposed students to different aspect of the space to that of the engineering. Students also underwent Space Policy planning exercise along with participants from other countries under supervision of Prof. Cho. Obtaining licenses for using frequencies is crucial before the launch of satellite. Students also got involved in frequency coordination works with other relevant national and international agencies. With these experiences and knowledge, students can actively lead and participate in formulating the space program of Bhutan.

Bhutanese team (from left to right): Pooja Lepcha, Kiran Kumar, Yeshey Choden and Cheki Dorji





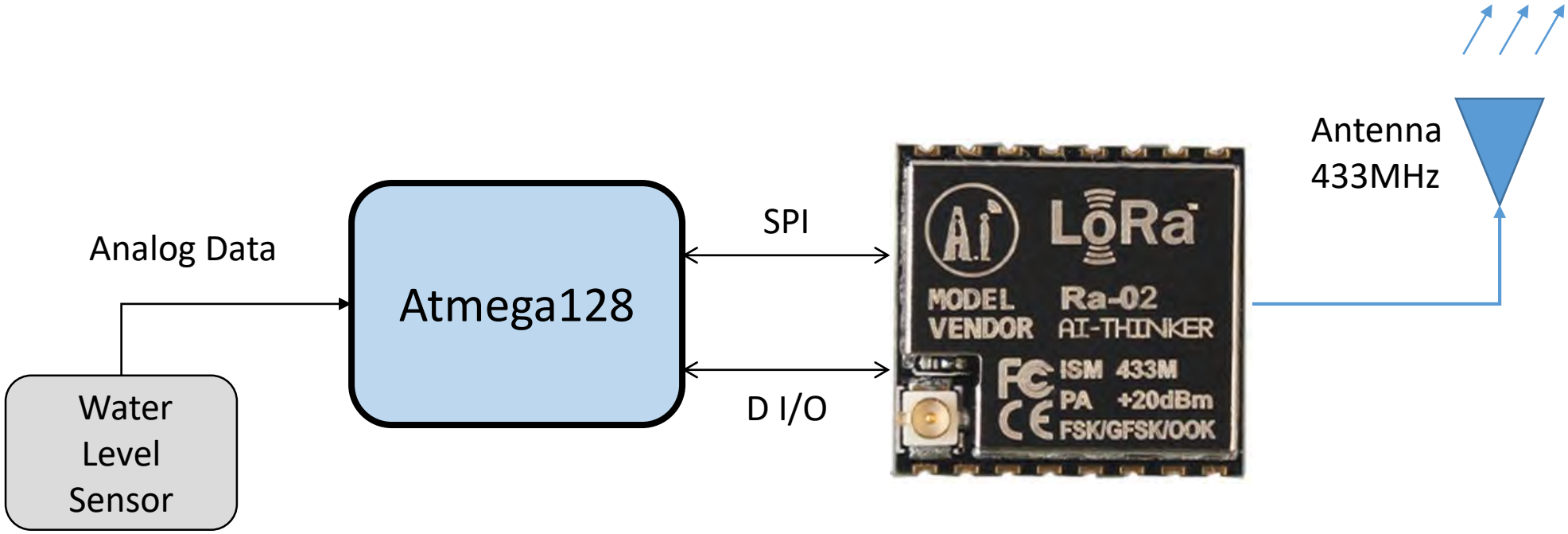
END OF REPORT BY CHEKI

BIRDS-3 Data Collection Mission Updates From Sri Lanka

Arthur C Clarke Institute for Modern Technologies

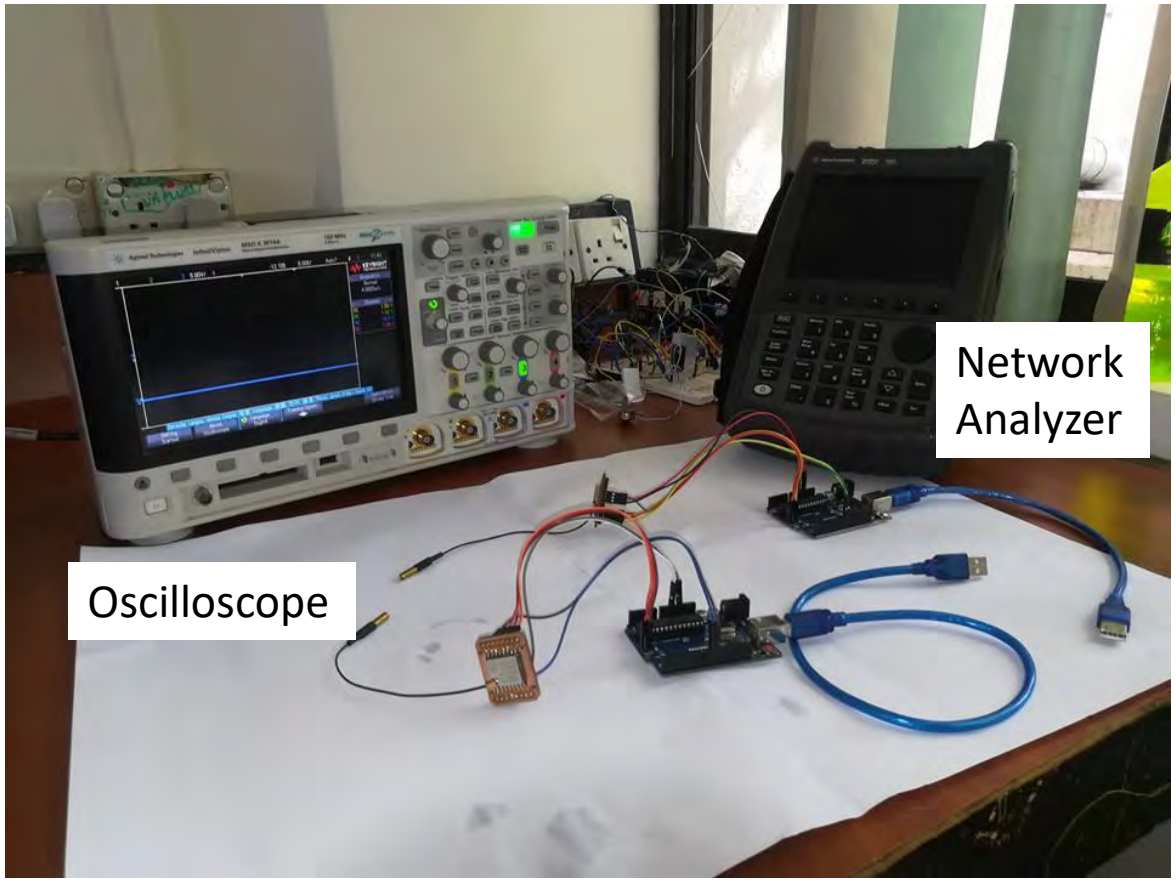
By. Tharindu & Sampath

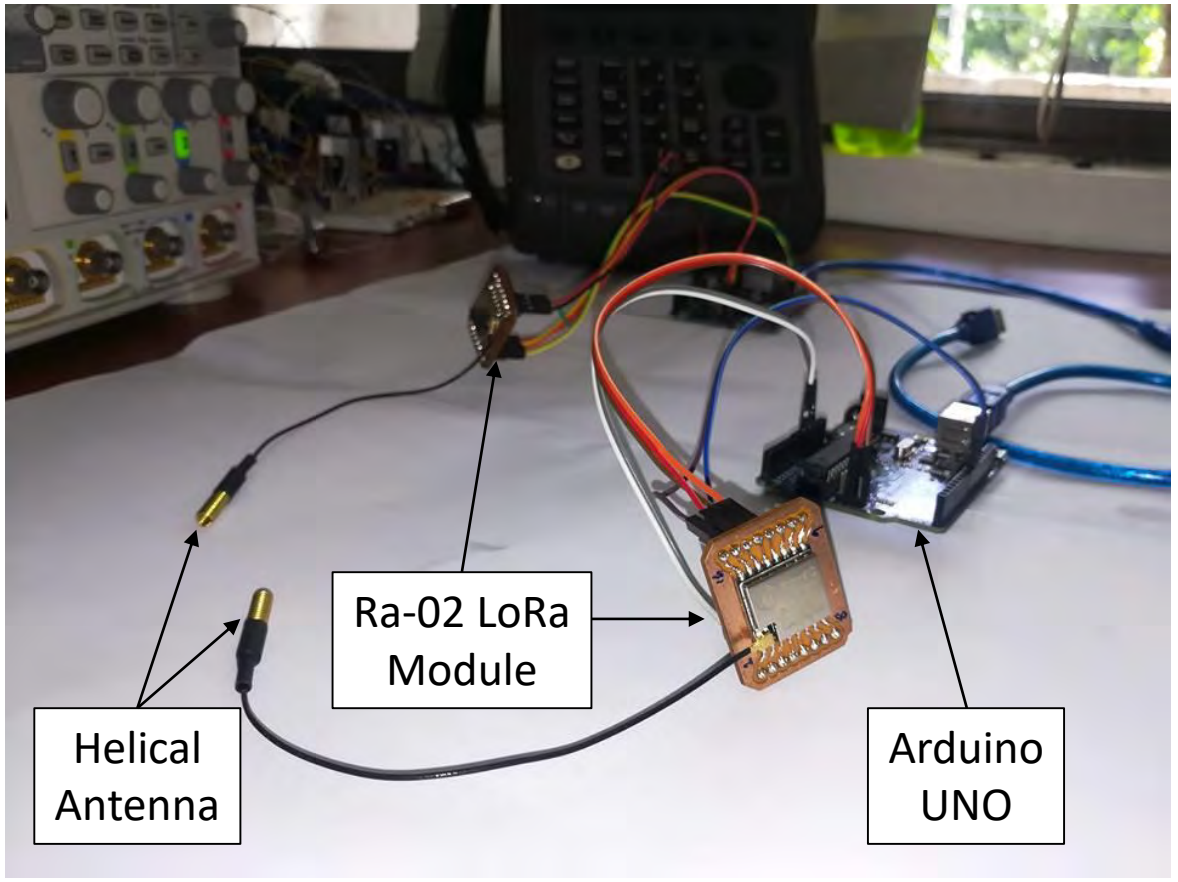
Sri Lanka's BIRDS-3 Remote Station Block Diagram



- Frequencies of the Sri Lankan remote stations will be in 433MHz band.
- For BIRDS-3 satellite, RFM95/96/98 series LoRa modules will be used but Sri lankan remote stations will use Ra-02 LoRa module

LoRa Modules Before Testing





Sri Lankan Team

This team is currently working on Sri Lanka's BIRDS-3 Main Ground station and Data Collection Mission remote stations.

Team Members

1. Kaveendra Sampath
2. Dinusha de Silva
3. Jayakamal Abeysekara
4. Chaminda Jayalath

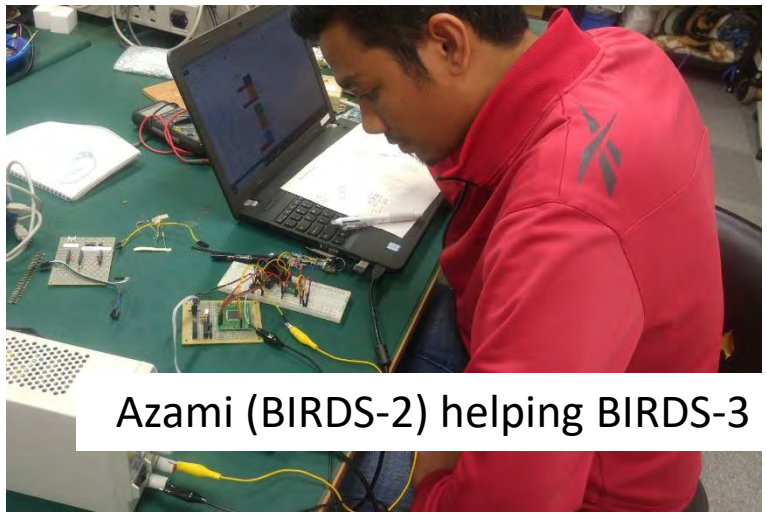
[Arthur C Clarke Institute for Modern Technologies Sri Lanka]

18. BIRDS-3: Activities during April - May 2018, by Abhas

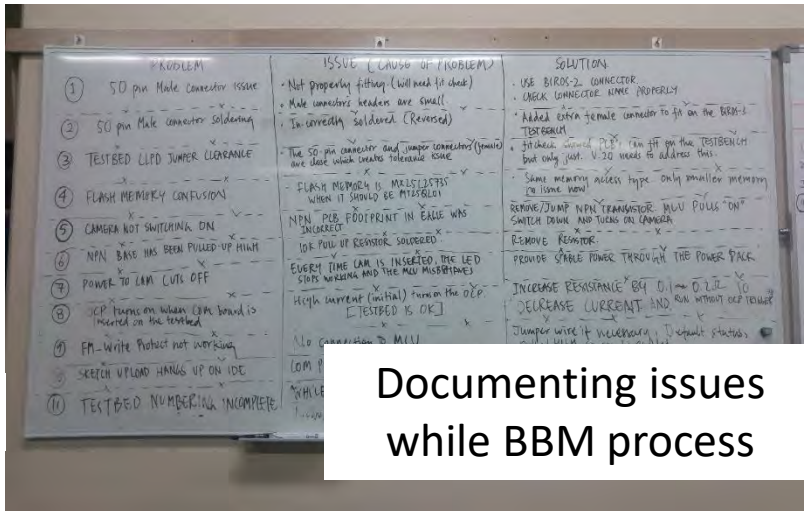
Tharindu working on BBM

Kim-Sensei's session

Antenna Deployment Design
by Makiko and Sasaki



Azami (BIRDS-2) helping BIRDS-3



Documenting issues
while BBM process

BIRDS-3 New Year Dinner on
April 14 (hosted by Dulani)

BIRDS-3 Activities during April - May 2018 – continued from previous page

BIRDS-3 Weekly Meeting

BIRDS-3 Preliminary Design Review

BIRDS-3 PCB BBM Sample

Post-PDR refreshments with BIRDS-1 and BIRDS-2

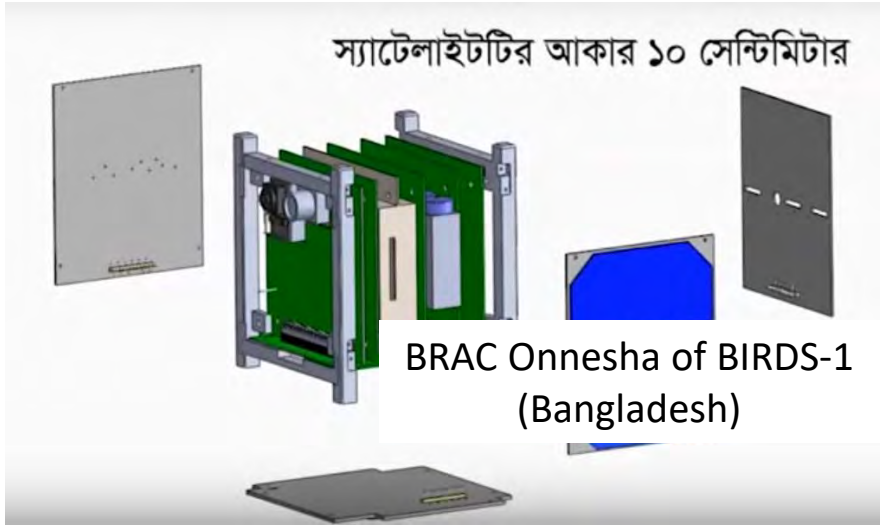
BIRDS-3 members completed Preliminary Design Review (PDR), a critical milestone, on April 26th 2018 and are now in the Engineering Model (EM) Phase where the Bread Board Model design will be made into EM and will all be fitted inside the structure. The team plans on doing the EM environmental testing from the beginning of July.

BIRDS-3 team would like to thank both **BIRDS-1** and **BIRDS-2** teams for being extremely supportive during the PDR prep.

19. BIRDS-3: Media watch in Nepal, by Abhas

NAST's Program "Bigyan Prawidhi" [Scientific Technologies]

Abhas Maskey (BIRDS-3)



BRAC Onnesha of BIRDS-1 (Bangladesh)

Deployment from ISS

In Nepal Academy of Science and Technology (NAST)'s weekly program on national television, Nepal TV, Abhas Maskey (BIRDS-3) gave an interview to explain the philosophy of the BIRDS-3 project, why Nepal needs it and how Nepal can move forward into the future. In the interview, Abhas also explained the challenges in getting funds for BIRDS-3 and made suggestions to improve the process in the future. The interview was aired on April 14, 2018.

Frequency Coordination (Japan case)

Makiko Kishimoto

May 14th 2018

To launch your satellite

Satellite part

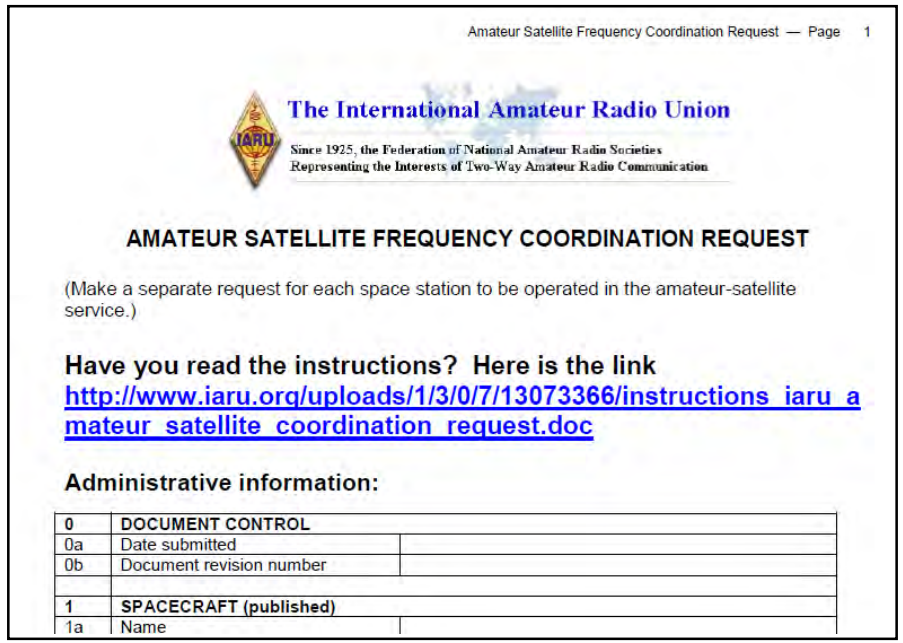
1. When using the amateur frequency, satellite project member need to apply for the propose satellite frequency to IARU and JARL which are the amateur radio organization, and get permission to use the amateur radio frequency band.
   → Amateur radio frequency application (IARU, JARL)
2. Submit the API document to ITU which is the international frequency allocation organization. So, your propose satellite frequency will not cause interfere to other satellites and radio stations.
   (Request will be made by MIC.)
   → International frequency allocation (ITU, MIC)
3. It is necessary to make the similar frequency allocation for domestic as well as international frequency allocation of 2.
   → Radio station license application
   (MIC, General Communication Bureau)

*MIC: Ministry of Internal Affairs and Communications
*IARU: International Amateur Radio Union
*JARL: Japan Amateur Radio League
*ITU: International Telecommunication Union
*API: Advanced Publication Information

To launch your satellite

Ground Station part

1. Apply for a ground station license following the domestic radio law.
   → Radio station license application
   (MIC, General Communication Bureau)



Amateur Satellite Frequency Coordination Request — Page 1

The International Amateur Radio Union

Since 1925, the Federation of National Amateur Radio Societies
Representing the Interests of Two-Way Amateur Radio Communication

AMATEUR SATELLITE FREQUENCY COORDINATION REQUEST

(Make a separate request for each space station to be operated in the amateur-satellite service.)

Have you read the instructions? Here is the link
http://www.iaru.org/uploads/1/3/0/7/13073366/instructions_iaru_amateur_satellite_coordination_request.doc

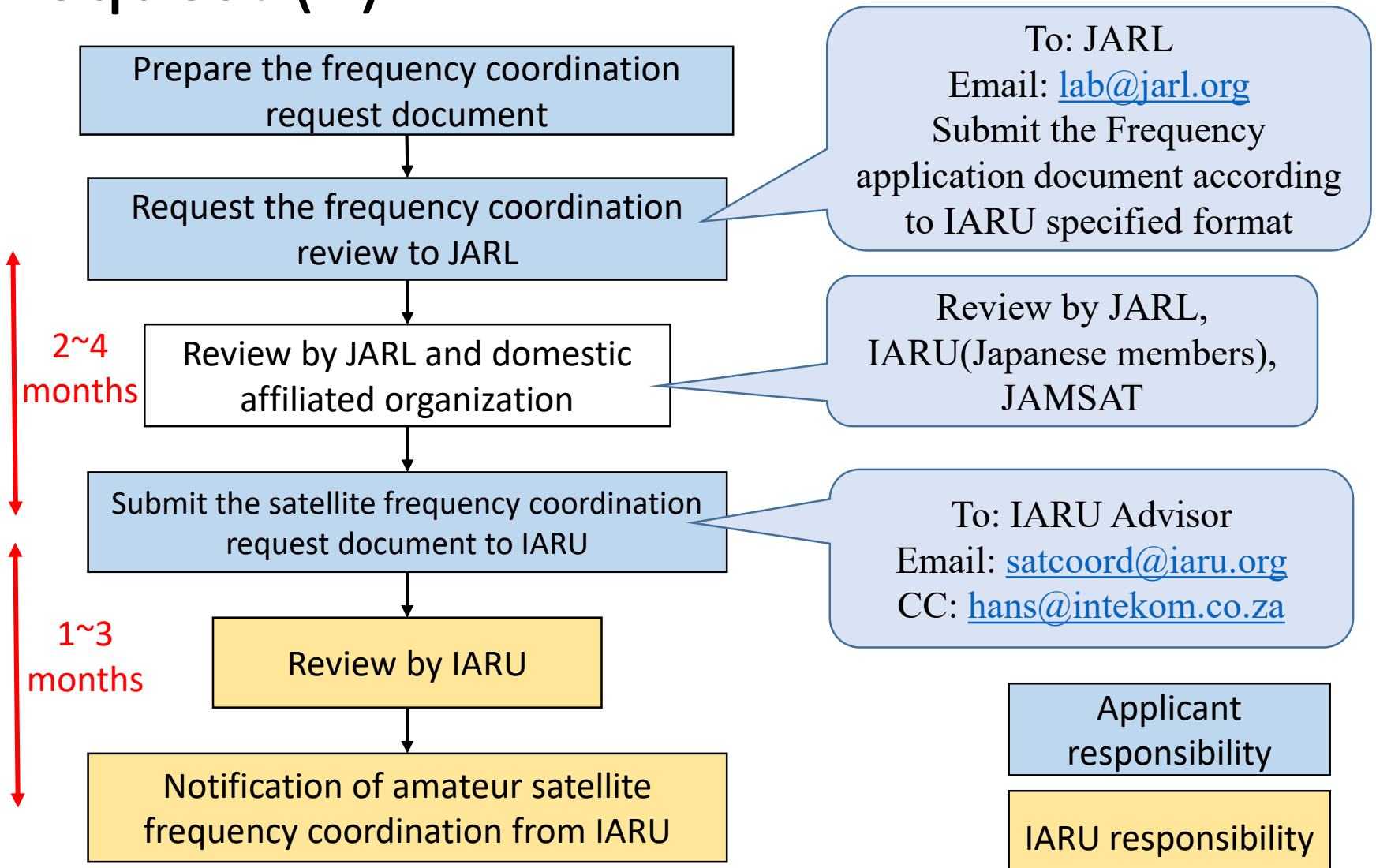
Administrative information:

0	**DOCUMENT CONTROL**	
0a	Date submitted	
0b	Document revision number	
1	**SPACECRAFT (published)**	
1a	Name	

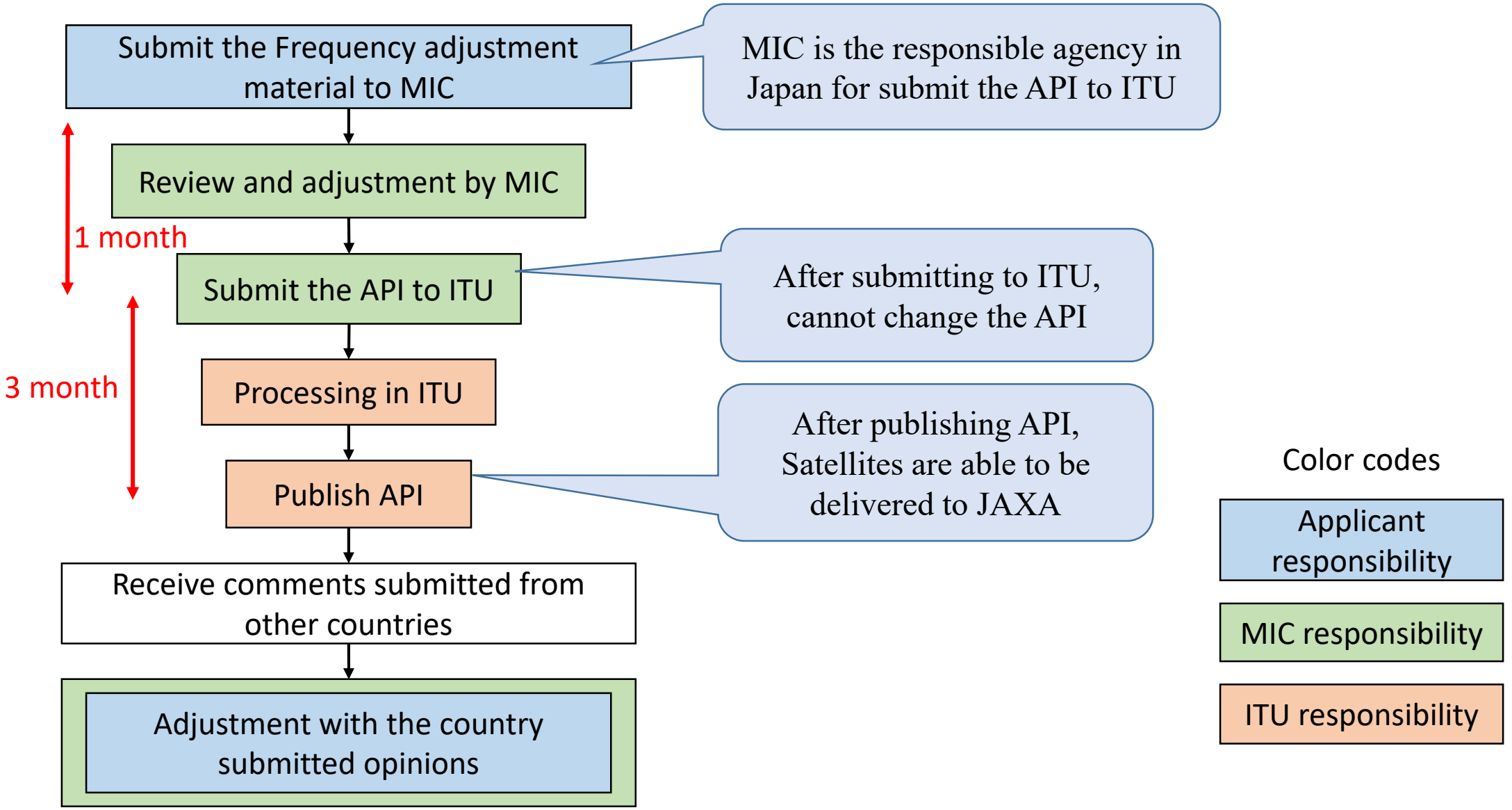
Satellite frequency coordination request document

Fill in frequency, communication method to use, mission of satellites, information of Ground Station and things like that.

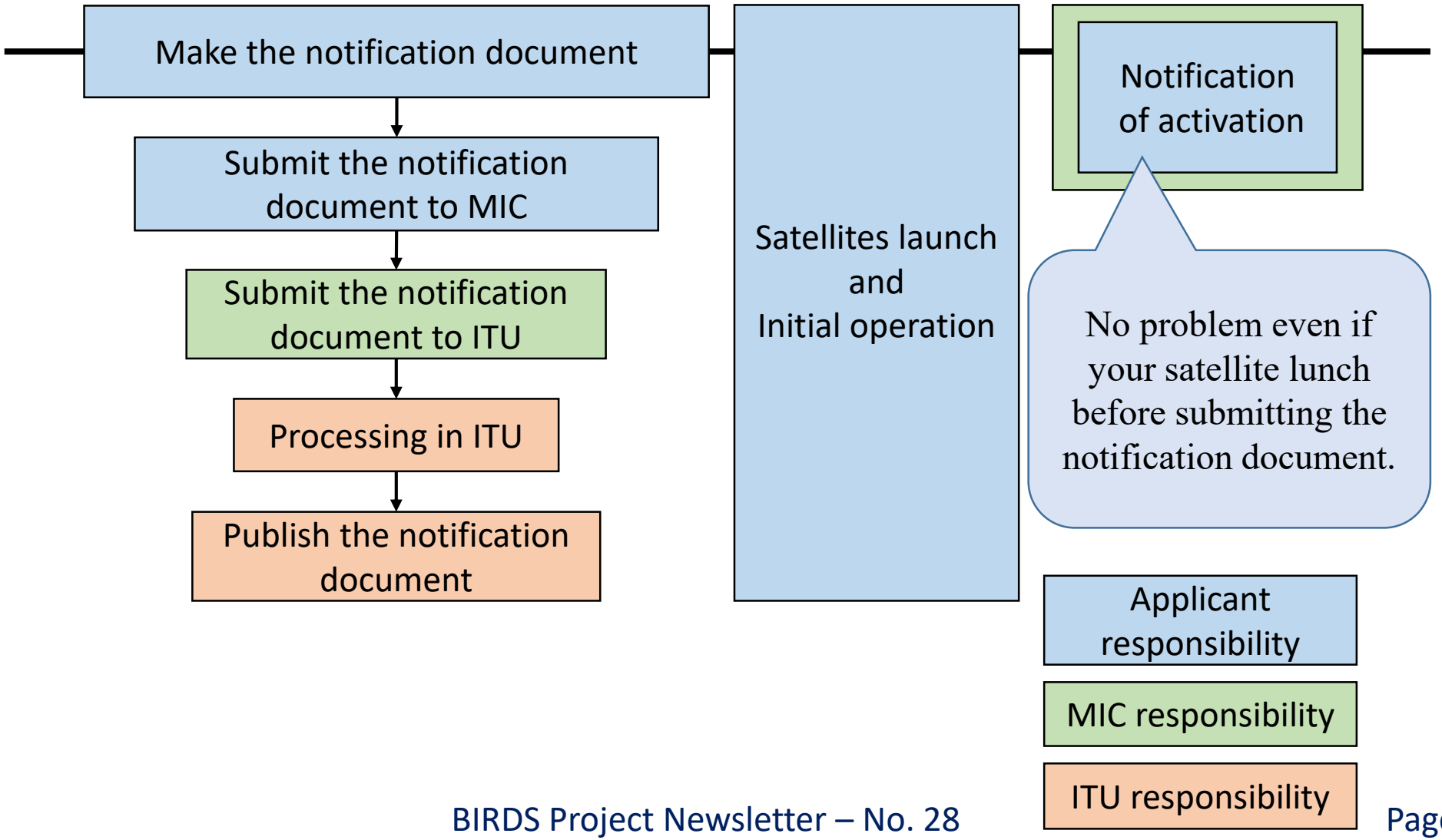
Satellite frequency coordination request (1)



Satellite frequency coordination request (2)

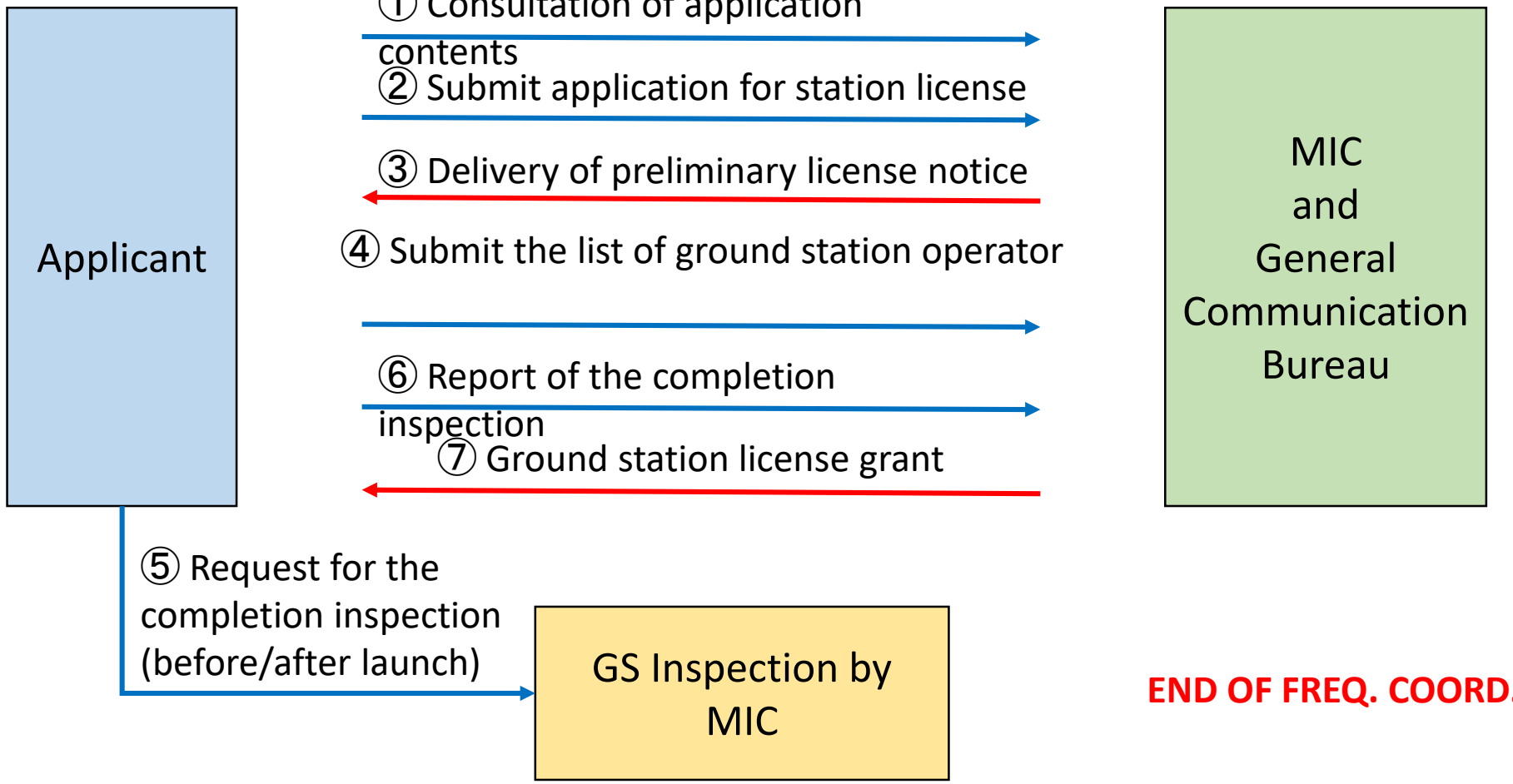


Satellite frequency coordination request (3)



Satellite and Ground Station

Radio station license application process



END OF FREQ. COORD. ARTICLE.

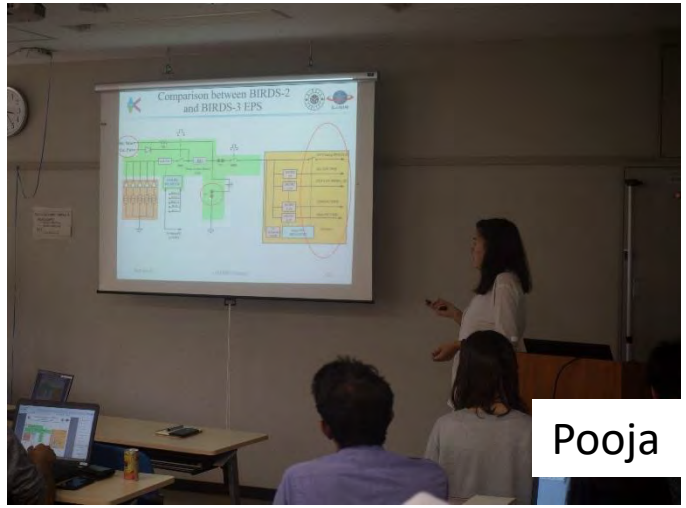
BIRDS-3 PDR

Pooja Lepcha

BIRDS-3 presented their PDR on 26th April, 2018 from 13:00 to 16:00 in Cho Lab Seminar room


Abhas

Sasaki



Pooja


Tharindu

26th April 2018

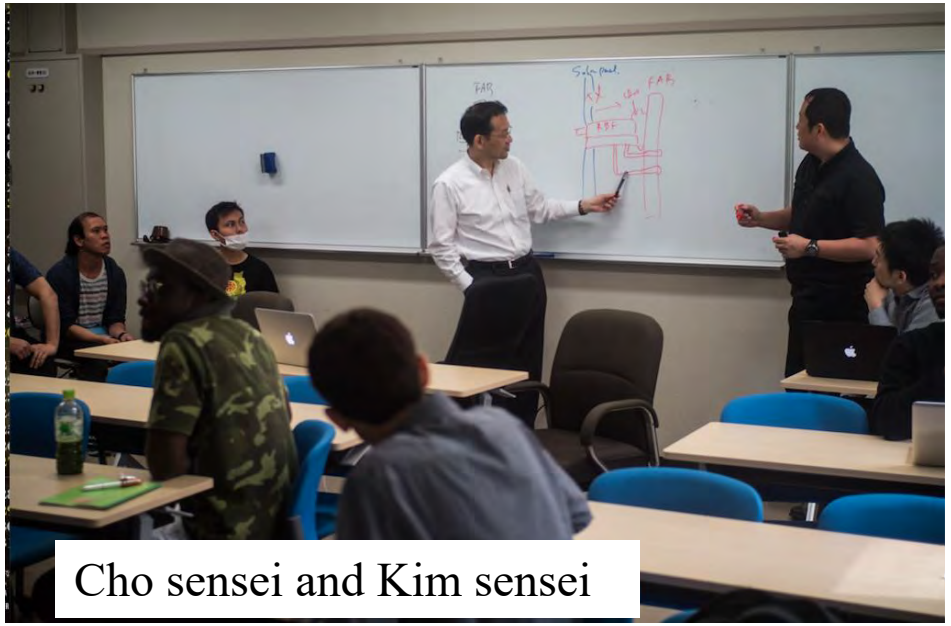
The PDR started with the Project Manager (Abhas) giving the introductory remarks and followed by the team members presenting their respective missions and subsystems


Kakimoto

Dulani

Makiko

The PDR turned very interesting as the Sensei's and the students wracked their head in understanding the BIRDS-3 system. The main focus was however on its difference from the BIRDS-2 system and the improvements made from them.

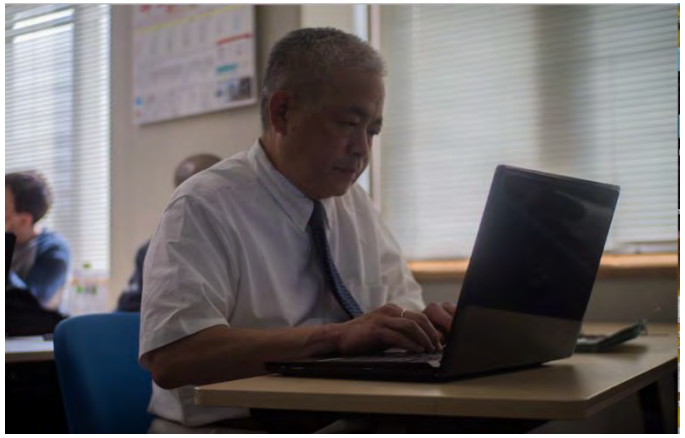


Cho sensei and Kim sensei

Adrian from BIRDS-2 asking questions

Some serious discussion during the PDR

Participants listen carefully to the presentation



Maeda sensei taking notes of important points

A light refreshment was organized by BIRDS-3 with an initiative from the Project Manager for the PDR participants. It was to express the gratitude for joining the PDR and giving valuable comments. BIRDS-1 and BIRDS-2 joined the party.

BIRDS-3 Members preparing for the party

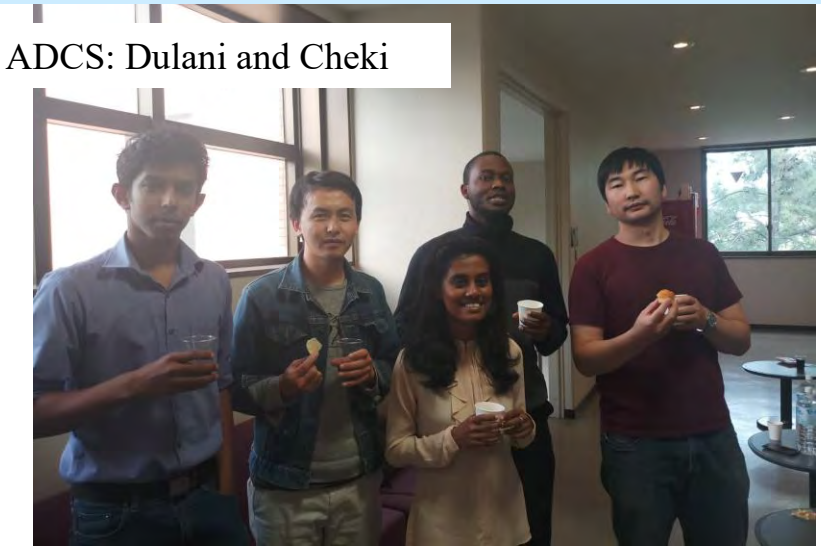
Abhas makes the toast for the party

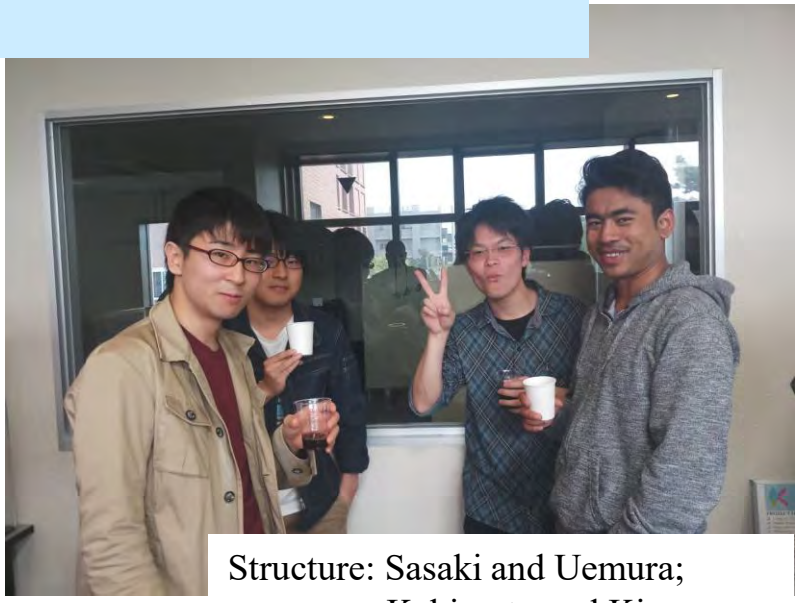
It was a very interactive party

Subsystem Level Interaction: Each responsible person for each subsystem seemed to talk to their senpai who handled the subsystem in BIRDS-2 before

Camera subsystem: Abhas and Azami

ADCS: Dulani and Cheki

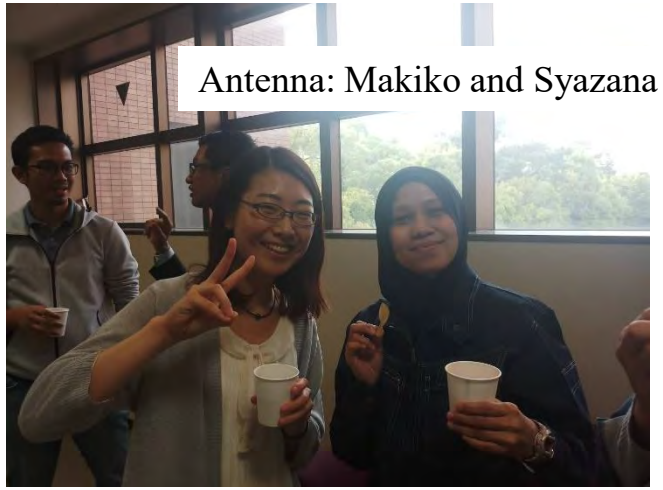




Structure: Sasaki and Uemura; Kakimoto and Kiran

Communication subsystem: Tharindu and Adrian

Antenna: Makiko and Syazana



Maisun (BIRDS-1) and Adrian (BIRDS-2) for Communication subsystem

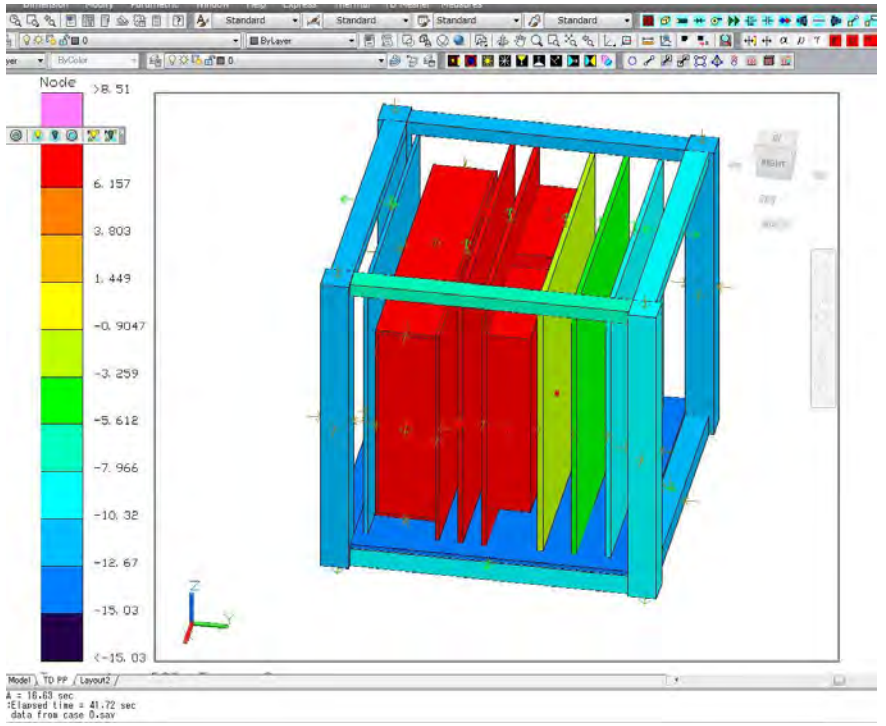
22. BIRDS-3: Thermal Analysis

Yuta Kakimoto, May 09, 2018

5月に入って、BIRDS-3の熱解析モデルを作成しました。Thermal Desktopというソフトウェアを用いて解析を行っています。

このモデルは、BIRDS-1の解析モデルをもとに、構造をBIRDS-3用に置き換え、部品間の接触条件や輻射条件を加えたものです。

右の図は、軌道上の熱入力の条件を与えて実際に解析を行ったものです。現時点では、接触の条件が正しいとは言いきれないため、モデルとしては未完成ですが、今後熱試験を行い、このモデルの信頼性の向上を図ります。



以前、別の衛星の熱設計を行った際、接触条件を出すのがかなり大変だったため、今回はすんなりうまくいくことを願います。。。

23. BIRDS-3: Summary of special training sessions, and new year celebration

Double article by Dulani of BIRDS-3:

- Summary of Special Training Sessions (STS) of BIRDS-3
- New Year Celebrations of Nepal and Sri Lanka

Special Training Sessions of BIRDS 3

Event numbe	Date	Time	Event
STS-01	2017/10/13	10:30-12:00	PCB design session by Atomu san
STS-02	2017/10/19	14:40-16:10	Solidworks Session
STS-03	2017/10/20	13.00-14.00	PIC microcontroller workshop by Turo
STS-04	2017/10/23	13.00-14.00	Amateur Radio License Seminar by Apiwat
STS-05	2017/10/26	14.40-16.10	PCB design session 1 by Tharindu
STS-06	2017/11/02	14.40-17.00	PCB design session 2 by Tharindu
STS-07	2017/11/09	17.00-18.30	Mission Mode Improvemens by Dr.Pauline
STS-08	2017/11/09	14:40-16:10	PIC programming by Atomu San
STS-09	2017/11/24	10.30-12.00	Website design session by Maisun
STS-10	2017/12/20	13.00-15.00	PIC session 2 by Tharindu
STS-11	2018/01/10	13.00-14.00	Soldering session by Tharindu
STS-12	2018/01/11	14:40-16:10	Soldering session by Abhas
STS-13	2018/01/18	13.00-14.00	Soldering session by Tharindu
STS-14	2018/01/19	13.00-14.00	Soldering session by Abhas
STS-15	2018/01/29	13.00-14.00	Soldering session by Tharindu
STS-16	2018/01/31	13.00-14.00	Soldering session by Abhas
STS-17	2018/02/28	15.30-17.15	Main PIC session by Kiran
STS-18	2018/03/07	19.00-19.45	Camera session by Azami
STS-19	2018/03/09	13.00-15.00	Reset PIC session by Joven
STS-20	2018/03/09	14.30-16.00	Thermal software session by Nakamura
STS-21	2018/03/26	14.00-15.00	Ground station description by Apiwat
STS-22	2018/04/06	19.00-20.30	Ground station description by Adrian
STS-23	2018/04/07	13.00-14.30	ADCS session by Cheki
STS-24	2018/04/07	14.00-16.00	Reset PIC session by Joven
STS-25	2018/04/11	11.00-14.30	UART/SPI session by Tharindu

In the beginning we had training sessions for the whole BIRDS-3 team.

Currently members who are involved in specific subsystems are taking special training sessions from previous BIRDS members who were engaged in those subsystems.

The highlighted training sessions are the latest what BIRDS3 members took.

Sri Lanka's and Nepal's New Year Celebrations

Milk rice (Sri Lankan's main dish in new year)

A picture taken by Makiko

A photo taken of dishes while we were eating

Before we start eating

Sri Lanka's and Nepal's traditional new year was held on 14th April 2018. BIRDS3 members arranged the dinner to celebrate this special day together.

24. BIRDS-3: Thermal cycles test

Sasaki Yuji　　10/05/2018

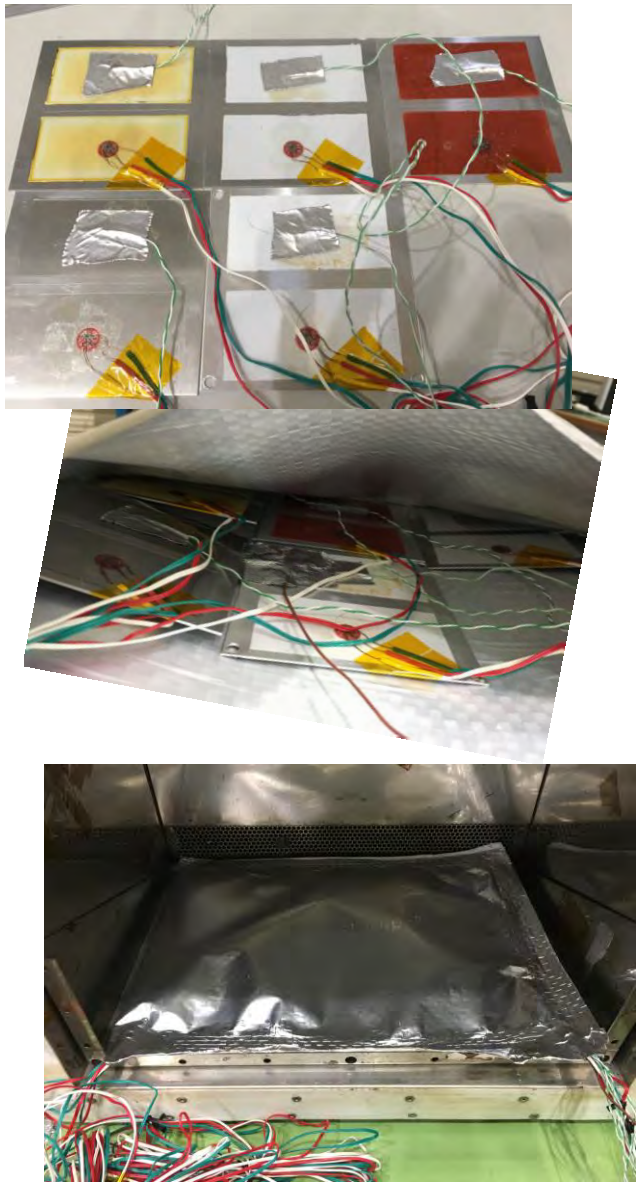
熱サイクル試験

Glue missionで接着剤を選定するときの基準として環境試験を実施します。環境試験にはランダム振動やサインバーストなどの振動試験と熱サイクル試験や熱真空試験の熱試験が主にあります。今回は熱サイクル試験について話していきます。

衛星は軌道上に打ち上げられたのち、熱サイクルがかかります。接着剤に関しては温度範囲により剥離したり、熱膨張により張り付けていた太陽電池に不具合が起きたりする可能性があります。熱サイクル試験はこの耐性を見るために実施されます。

熱サイクル試験は温度を調べるための熱電対と熱膨張率を調べるための歪みゲージを使って実験をしました。サンプルは写真のようにアルミパックによって袋閉じをしました。中に窒素を充填することで湿気をなくすことが出来ます。

100サイクルした後結果をサンプルを確認しましたが、変化は見られませんでした。引き続きこの熱サイクル試験をしていく予定です。



End of this **BIRDS Project Newsletter**

(ISSN 2433-8818)

– Issue Number Twenty-Eight

This newsletter is archived at the BIRDS Project website:
http://www.birds-project.com/birds1/newsletter.html

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.