

# Accepted Manuscript

Establishing space activities in non-space faring nations: An example of university-based strategic planning

Pauline Faure, Mengu Cho, Maeda George



PII: S0094-5765(18)30398-9

DOI: [10.1016/j.actaastro.2018.05.005](https://doi.org/10.1016/j.actaastro.2018.05.005)

Reference: AA 6861

To appear in: *Acta Astronautica*

Received Date: 25 February 2018

Revised Date: 24 April 2018

Accepted Date: 2 May 2018

Please cite this article as: P. Faure, M. Cho, M. George, Establishing space activities in non-space faring nations: An example of university-based strategic planning, *Acta Astronautica* (2018), doi: 10.1016/j.actaastro.2018.05.005.

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

IAC-17-E1.5.x38769

**Establishing Space Activities in Non-space Faring Nations: An Example of University-based Strategic Planning****Pauline Faure\***, Mengu Cho, George Maeda*Kyushu Institute of Technology, Laboratory of Spacecraft Environment Interaction Engineering, 1-1 Sensui-cho, Tobata, Kitakyushu, 804-8550 Fukuoka, Japan, [faure.pauline-louise545@mail.kyutech.jp](mailto:faure.pauline-louise545@mail.kyutech.jp)*

\* Corresponding Author

**Abstract**

In 2015, Kyushu Institute of Technology initiated the Joint Global Multi-Nation Birds Satellite (BIRDS) program. As of September 2017, young professionals from Bangladesh, Ghana, Nigeria, Thailand, Mongolia, Philippines, Malaysia, and Bhutan are being involved in BIRDS program. To help the young professionals acquiring the right tools and preparing them to successfully establish indigenous space activities, the space strategic planning project was established in February 2017. During the project, young professionals from Bangladesh, Ghana, Mongolia, and Bhutan were invited to think about the strategy their home country should be following in the next ten years to achieve their country's goals in terms of space sciences, engineering, and utilization, while respecting the country needs and constraints. In this paper, the efforts undertaken by the different young professionals are reported and the guidelines for each country space strategic planning are described. From this work, the authors aim at promoting space activities development in non-space faring nations and encouraging non-space faring nations to find their right strategy to achieve sustainable indigenous space activities despite the nation's constraints.

**Keywords:** capacity building, developing countries, small satellite, STEM**Acronyms/Abbreviations**

- ANU : All Nations University
- BIRDS : Joint Global Multi-Nation Birds Satellite
- Kyutech : Kyushu Institute of Technology
- LaSEINE : Laboratory of Spacecraft Environment Interaction Engineering
- NUM : National University of Mongolia
- PNST : Post-graduate Study on Nano-satellite Technologies
- SEIC : Space Engineering International Course
- UMaT : University of Mines and Technology
- UNOOSA : United Nations Office for Outer Space Affairs

**1. Introduction**

In 2006, LaSEINE at Kyutech started to develop its own small satellite programs, which were mainly carried out by Japanese undergraduate and graduate students. Then, from 2013, small satellite programs involving non-Japanese students started. Since then, most of the satellite projects involve more than fifty percent of foreign students, which majority comes from non-space faring nations. As of September 2017, twelve projects were initiated. The projects involve eighteen satellites, going from CubeSats to 50kg-class satellites, constellation and even one interplanetary spacecraft. Among these twelve projects, nine satellites were successfully launched and six are planned to be launched in 2018.

Kyutech is one of the rare universities in Japan enabling such diversity in its satellite programs. The main reason is that Kyutech is the only Japanese university offering an English space engineering program to graduate students, the SEIC, that started in 2013. This course was designed along with the establishment of PNST, a United Nations/Japan Long-term Fellowship Programme. This fellowship program, in collaboration with the UNOOSA and the Japanese Ministry of Education, Culture, Sports, Science and Technology provides scholarships to six students from non-space faring nations to enrol in graduate studies (two scholarships for the Master course and four scholarships for the Doctor course). Details on PNST fellowship and SEIC can be read from [1-3].

Over its five years of existence, seventy-one students from twenty-six countries enrolled in SEIC. Among the seventy-six students, twenty-nine students from non-space faring nations were supported by PNST program. More than fifty students took part to SEIC at any given time. The country distribution of the students taking part to SEIC is shown in Fig. 1. The results of the PNST fellowship program are reported in [4-5].

Download English Version:

<https://daneshyari.com/en/article/8055502>

Download Persian Version:

<https://daneshyari.com/article/8055502>

[Daneshyari.com](https://daneshyari.com)