

## Scope:

Micro/nano/pico-satellites, less than approximately 50kg satellites, have become important tools for space development and utilization with their strong merits of low-cost and quick development, which may lead to new ways of space utilization by new, especially non-governmental, users. These features also make these satellites very attractive and cost-effective materials for space education, especially for countries which have just started space development programs.

Based on the experiences of the development and launch of 20 university satellites since 2003, the "Hodoyoshi Program," which aims at the practical application of micro-satellites, started in Japan in 2010, in which many universities and small industries are collaboratively focusing on the establishment of secure bases of technologies, infrastructure, industrialization and human resource training for micro-satellites. The "Hodoyoshi Program" has already hosted four Nano-satellite symposiums since 2010 to exchange information and experiences among researchers and engineers, as well as to strengthen the community of micro/nano/pico-satellites, including the 4<sup>th</sup> symposium which was co-hosted with the United Nations. This symposium to be held in 2013 is the 5<sup>th</sup> one.

The symposium will cover all the aspects of micro/nano/pico-satellites including architecture, component technologies, guidance/navigation/control, infrastructure, such as ground station systems and launch opportunity, applications and missions, regulatory issues and education. As 2013 will be the last fiscal year of the "Hodoyoshi Program," the symposium will focus especially on applications and missions for micro/nano/pico-satellites. New mission proposals, including Earth observation, disaster monitoring, space sciences and exploration, or even more personal type missions, which deeply consider the merits and demerits of micro/nano/pico-satellites would be welcome. If you have a novel idea for a satellite mission but you don't know whether your mission is feasible or not, please don't hesitate to submit your idea. We would be pleased if this symposium could contribute to the "match-making" between the technologies and the applications.

Papers describing lessons learned as to space utilizations would also be welcome. If you were involved in real satellite servicing projects, including mid or large satellite projects, information as to how you conceptualized the service concept, how you promoted it and what the results were would be very valuable to the audience. In such cases, please add your thoughts on how you can do the same or similar services in the framework of micro/nano/pico-satellites.



Of course, technologies and infrastructure for micro/nano/pico-satellites are another important topic. Technologies and infrastructure that could further enhance the strong features of micro/nano/pico-satellites, such as low-cost and quick development, will be particularly focused on at this symposium. Special technologies required for new types of missions would also be welcome.

## Sponsors:

First Program, Cabinet Office, Government of Japan  
The University of Tokyo

## Program Committee:

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## International Program Committee (IPC):

*To be determined*

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## Secretariat:

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www.nanosat.jp



*First Announcement  
and Call for Paper*

# 5<sup>th</sup> Nano-Satellite Symposium

**“Missions and Enabling Technologies  
towards Future”**



November 20 - 22, 2013

Takeda Hall, University of Tokyo  
Tokyo, Japan

[www.nanosat.jp](http://www.nanosat.jp)

**Theme:**  
**“Missions and Enabling Technologies  
towards Future”**

**Topics:**

The following list of topics for micro/nano/pico-satellites (less than approximately 50kg satellites) is of relevance to the Symposium:

**A) Novel missions and applications**

- 1) Earth observation
- 2) Disaster monitoring
- 3) Communication type missions
- 4) Space science and space exploration
- 5) "Personal use" type missions
- 6) Other new areas of missions

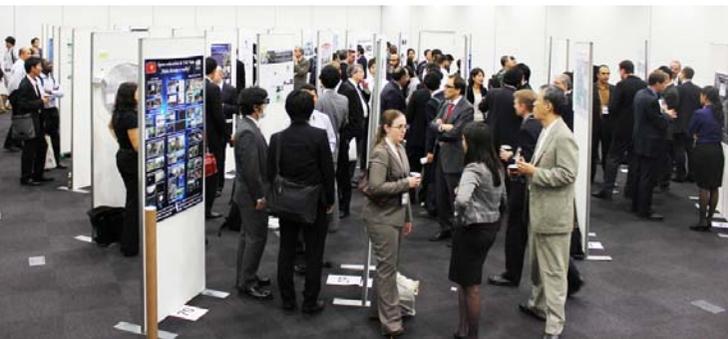
**B) Lessons learned as to space utilizations**

- 1) Public welfare type service
- 2) Service for business
- 3) Others

**C) Technologies and infrastructure**

- 1) Satellite architectures
- 2) Novel component technologies
- 3) Software development styles and architectures
- 4) Ground test
- 5) Ground station systems
- 6) Archive and information processing
- 7) Launch opportunities
- 8) Regulatory issues
- 9) Education and capacity building

Poster session and exhibitions for satellites, components or software, etc., are also planned. For those who are interested, please contact the secretariat.



**Call for Papers:**

Electric version (in PDF format) of each abstract written in English (approximately 600 words with key figures) must be sent to the Program Office by May 13, 2013. The abstract should be written in single-spaced, one-column standard A4 format in one page. The top part must contain:

- Title of the paper
- Author's full names and affiliations
- Address, phone and fax numbers and e-mail address
- Categories in which you wish to present your paper (Indicate first and second choices from among the topics listed above, such as "A-4")
- Intended presentation style (oral or poster)

Papers will be selected by the program committee according to:

- Scientific interest or originality
- Relevance to micro/nano/pico-satellites
- Quality of contents

The paper submitted for the oral presentation may be included in the poster session, or vice versa, if the content of the paper is judged to be more suitable for the alternate presentation style.

Notification of acceptance and information for preparing the full paper will be sent by the end of June, 2013.

**Tentative Schedule:**

- Submission of abstract: May 13, 2013
- Notification of acceptance: June 30, 2013
- Submission of full paper: August, 2013
- Symposium: November 20-22, 2013

**Language:**

The working language of the symposium is English.

**Laboratory tours:**

Laboratory tours of satellite developing laboratories of the University of Tokyo will be arranged during the symposium.

**Excursion (tentative):**

An excursion to a suburb of Tokyo to enjoy the beautiful red autumn leaves of Japan around the mountains and lakes will be arranged (at your own cost) on November 23, Saturday, following the Symposium.

**Exhibition (TBD):**

*To be determined*

**Associated Workshop:**

**1) 2<sup>nd</sup> Standardization Workshop**

- Date: November 19, 2013 (Tue)
- Venue: Takeda Hall, University of Tokyo

The purpose of the workshop is to discuss the draft of ISO standard on micro/nano satellite design qualification and acceptance test in detail. The detail of the workshop can be found in the following,  
[http://cent.ele.kyutech.ac.jp/nets\\_web/nets\\_web.html](http://cent.ele.kyutech.ac.jp/nets_web/nets_web.html)

**2) UNISEC International Workshop**

- Date: November 24, 2013 (Sun)
- Venue: Takeda Hall, University of Tokyo

The Workshop is to exchange information on the current or planned activities by member countries and, through this exchange, to explore a possibility of producing a new program/project in the context of UNISEC.  
[www.unisec.jp/international](http://www.unisec.jp/international)



The Nano Satellite-Symposium is a part of the "HODOYOSHI Project", which is granted by the Japan Society for the Promotion of Science (JSPS) through the "Funding Program for World-Leading Innovative R&D on Science and Technology (FIRST Program)," initiated by the Council for Science and Technology Policy (CSTP) of Cabinet Office, Government of Japan.