

31 May 2017

English only

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**Committee on the Peaceful  
Uses of Outer Space**  
Sixtieth session  
Vienna, 7-16 June 2017

**Request for observer status with the Committee on the Peaceful Uses of Outer Space: application of the University Space Engineering Consortium (UNISEC)-Global**

**Note by the Secretariat**

1. At its thirty-third session, in 1990, the Committee considered guidelines for granting observer status with the Committee to international intergovernmental and non-governmental organizations. The possible criteria suggested by the Outer Space Affairs Division to the Committee at the time were the following:
  - (a) As part of its programme, the organization should be concerned with matters falling within the competence of the Committee on the Peaceful Uses of Outer Space;
  - (b) The aims and purposes of the organization should be in conformity with the spirit, purposes and principles of the Charter of the United Nations;
  - (c) The organization should be a recognized international organization and should have an established headquarters, an executive officer, and a constitution, a copy of which is deposited with the Secretary-General of the United Nations. In the case of a non-governmental organization, it should be a non-profit organization.
2. Having considered the matter, the Committee at its thirty-third session, agreed, that in the future non-governmental organizations which request observer status with the Committee should have consultative status with the Economic and Social Council (ECOSOC) and should, as part of their programmes, be concerned with matters falling within the competence of the Committee.
3. At its fifty-third session, in 2010, the Committee agreed that observer status would be granted to non-governmental organizations on a provisional basis, for a period of three years, pending information on the status of their application for consultative status with the Economic and Social Council. The Committee also agreed that the provisional observer status could be extended for an additional year, if necessary. The Committee further agreed that it would grant permanent observer status to such non-governmental organizations upon confirmation of their consultative status with the Council.
4. While the Committee's decision did not specifically include the elements referred to in 2 (c) above, it has been the practice of the Committee, since its decision in 1990, to have before it the constitution or statutes of the organization or entity requesting observer status.
5. On 18 April the Office for Outer Space Affairs received an application for observer status with the Committee on the Peaceful Uses of Outer Space from the University Space Engineering Consortium (UNISEC)-Global. The following related correspondence received from UNISEC-Global is attached to this document:



- (a) Letter from UNISEC-Global containing a background information and justifying the intention to become a permanent observer of the Committee;
  - (b) Terms of reference of UNISEC-Global;
  - (c) Articles of UNISEC-Global;
  - (d) Local Chapters and Points of Contact of UNISEC-Global;
  - (e) List of Points of Contact of UNISEC-Global;
  - (f) UNISEC-Global Local Chapter Activity Reports.
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April 13, 2017

Ms. Simonetta Di Pippo,  
Director,  
Office for Outer Space Affairs,  
United Nations Office at Vienna,  
Vienna International Centre,  
Wagramerstrasse 5,  
A-1220 Vienna, Austria

Dear Ms. Di Pippo,

On behalf of the University Space Engineering Consortium (UNISEC)-Global, I am writing to formally apply for the status of Observer Organization to the Committee on the Peaceful Uses of Outer Space (COPUOS).

UNISEC-Global's primary objective is to help create a world where space science and technology is used by individuals and institutions in every country, rich or poor, and offers opportunities across the whole structure of society, whether academic, industrial or educational, for peaceful purposes and for the benefit of humankind.

UNISEC-Global is an international non-profit organization, consisting of universities, space companies, academic and educational organizations. Since its establishment in November 2013 in Japan, UNISEC-Global has provided a forum every year to promote practical space development activities, mainly at university level, such as designing, developing, manufacturing, launching and operating micro/nano/pico satellites and rockets, including their payloads. University students, young researchers, their tutors and other stakeholders around the world participate in the annual UNISEC-Global Meeting. We have an average of more than 130 participants from about 33 countries in each meeting.

In addition, it encourages its members (mainly through the Points of Contact) to establish local chapters-UNISEC branch offices, which are independently managed and operated in their respective countries. As of 2016, there are 14 local chapters around the world. As a consequence of establishing such local chapters, UNISEC-Global has been developing a global communication network via which it shares information and builds international connections between those interested in seeing space applied to local and



global social issues.

In relation to the work of the Committee on the Peaceful Uses of Outer Space (COPUOS), the UN/Japan Workshop on Capacity Building in Basic Space Technology Development was held in October 2012 Nagoya, Japan. The Workshop was cohosted by UNOOSA, the University of Tokyo and UNISEC-Japan (a leading local chapter of UNISEC-Global). As for capacity building in space,

- UNISEC-Global hosts the Mission Idea Contest (MIC) at its annual meeting. This is to compete ideas for satellite missions using nano/cube/pico satellite in terms of novelty, technical feasibility, economy and other factors, such as benefit to society. These are proposed mainly by university students around the world and reviewed by international experts.
- UNISEC-Japan hosts a now well-known international program, the CanSat Leader Training Program (CLTP), which is an annual hands-on training program comprising tasks from building a model satellite to verifying its function by dropping it from a drone or a model rocket. Participants in this program can learn the whole cycle of satellite development and are expected to become local instructors after returning home. For conducting the program, UNISEC-Japan has a close cooperation with UNISEC-Global in recruiting possible candidates, as well as in looking after post-training works. We have had 64 participants from 32 countries, most of which are developing nations, since 2011. We hope that CLTP will be a small, but meaningful step in reducing the existing space technology gap between countries.
- In cooperation with the University of Tokyo, UNISEC-Japan continues to support the Nano-Satellite Symposium, which is an annual international gathering dedicated to discussion and research in micro/nano satellite development and utilization that benefit our society.
- UNISEC-Global has recently launched a survey on capacity building using CanSat and CubeSat in cooperation with UNOOSA. This aims both to enhance our existing capacity building programs and to explore new ones.

We believe that all of them are contributing to priority theme 7: Capacity Building for the 21<sup>st</sup> Century.

Furthermore, UNISEC-Global organized the debris mitigation/deorbit competition at its last meeting in 2016, contributing to the COPUOS agenda item on long-term



sustainability of outer space activities. It will continue to do so in future meetings. Since its creation, UNISEC-Global (in cooperation with UNISEC-Japan) has made important contributions to space technology capacity building around the world. Moreover, micro/nanosatellites as our primary focus have unique advantages to be utilized in the near future. Due to their low cost, high adaptability and risk tolerance, multiple nanosatellites can be launched into low Earth orbits with a wide range of missions. As their revisit times over any geographic area can be much shorter than those of single big satellites, they can be used for rapid response to disasters, continuous monitoring of Earth's surface and atmosphere as well as for networks providing internet access to the whole planet. As an Observer Organization of COPUOS, we are sure that we will be in an even better position to pursue such goals, particularly in view of the organization of UNISPACE + 50 in 2018.

I am herewith attaching our supporting documents to the application as follows:

1. Terms of Reference
2. Articles of Association
3. List of Local Chapters
4. List of Points of Contact
5. Activity Reports of the Local Chapters

We would be grateful for your consideration of our application at the earliest opportunity. In the meantime, we remain at your disposal to provide any further information you may require.

Sincerely

A handwritten signature in black ink that reads 'Rei Kawashima'.

Rei Kawashima  
Secretary General,  
UNISEC-Global



Attachment 1

## Terms of Reference

November 24, 2013

### **Vision**

University Space Engineering Consortium (UNISEC)-Global envisions a world where space science and technology are used by individuals and institutions in every country, rich or poor, and offers opportunities across the whole structure of society—whether academic, industrial or educational— for peaceful purposes and for the benefit of humankind.

### **Mission**

UNISEC-Global will create an environment that will promote the free exchange of ideas, information and capabilities relating to space engineering and its applications, especially for young people, including those in developing countries and emerging economies.

### **Structure**

- 1) UNISEC-Global is an international non-profit organization to facilitate and promote practical space development activities at university level, such as designing, developing, manufacturing, launching and operating micro/nano/pico satellites and rockets, including their payloads.
- 2) UNISEC-Global Members are universities, university groups, academic or educational organizations.
- 3) UNISEC-Global Members may organize themselves into Local Chapters that provide coordination at the country or regional level.
- 4) UNISEC-Global activities are coordinated by the UNISEC-Global Secretariat.
- 5) The executive organ of UNISEC-Global is the Steering Committee.

### **Implementation**

The primary means of achieving this vision and mission will be through practical projects in space engineering and its applications and to provide opportunities for education and



human resources training that are of benefit to societies– not only in space development fields but also in various technology areas.

- 1) Members of UNISEC-Global must make a continuous effort to promote project -based space education.
- 2) Members of UNISEC-Global should make every effort to ensure that their respective policy- and decision-makers understand the importance of space education and support their activities.
- 3) Members of UNISEC-Global should share their activities openly so that other members can benefit from their experiences, know-how, problem solving techniques and skills.
- 4) Each Local Chapter will nominate one or two organizations (typically a University) and point-of-contact therein as their representative to coordinate other participants. The internal structure of the Local Chapters in UNISEC-Global can be implemented independently, reflecting the local conditions.
- 5) The UNISEC-Global Secretariat shall have no responsibility for the legal or financial activities of the members. All financial or other legal responsibilities of the activities of UNISEC-Global members or local chapters shall be assumed solely by themselves.

## Articles of UNISEC-Global

March 2017

### **Article 1 Name**

The name of the organization is UNISEC-Global, a non-profit international association.

### **Article 2 Definition**

- (1) “UNISEC” is an acronym of the “University Space Engineering Consortium”.  
UNISEC is a consortium of universities, space-related companies and students in a country or a regional area.
- (2) The “Local Chapter” means a newly established UNISEC in a country or regional area.
- (3) The “Steering Committee” is the highest organ to manage and approve UNISEC-Global activities.
- (4) The Secretary-General is a highest position in charge of secretariat works.
- (5) A majority means more than two thirds of the members.
- (6) A “Student Representative” is a student who will attend the UNISEC-Global Meeting to make a presentation on behalf of his/her Local Chapter.
- (7) “The Members” are universities, university groups, space-related companies, academic or educational organizations.
- (8) “Point of Contact (POC)” is a person who explores the local capabilities and works to establish the local UNISEC.

### **Article 3 Organization**

- (1) UNISEC-Global consists of its Local Chapters, the Steering Committee and Secretariat.
- (2) The executive organ of UNISEC-Global is the Steering Committee.
- (3) The Secretariat shall support and coordinate UNISEC-Global activities under the initiative of the Secretary-General or the Steering Committee.

### **Article 4 Steering Committee**

- (1) The Steering Committee shall appoint a Chairperson by a majority of its member.
- (2) The term of a Chairperson shall be two years and can be renewed another two years.
- (3) The Chairperson shall preside over the Committee meetings.
- (4) The Chairperson shall make necessary decision in consultation with the Committee members.
- (5) Any decision of UNISEC-Global shall be made by a majority of the Steering Committee members and shall be final.
- (6) A new member of the Steering Committee shall be recommended by the Secretary-General and be approved by the Steering Committee.



- (7) The Steering Committee shall nominate the Secretary-General.

#### **Article 5 Secretary-General**

- (1) The Secretary-General shall be responsible for Secretariat works associated with UNISEC-Global activities.
- (2) The Secretariat-General shall be nominated by the Steering Committee.
- (3) The Secretary-General shall submit papers to or consult with the Steering Committee for necessary decisions or guidance.
- (4) The Secretary-General shall support the Chairperson of the Steering Committee as the Vice-Chairperson of the Steering Committee.
- (5) The Secretary-General may recommend to the Steering Committee an appropriate person as a local Point Of Contact (POC) upon request.
- (6) The Secretary-General shall receive and process the applications of new local chapters and announce them after approving from the Steering Committee.

#### **Article 6 Membership**

- (1) Local Chapter shall collect Membership fees from their Members. The fee is decided by each Local Chapter based on the local conditions.
- (2) Local Chapters shall pay a Membership fee to UNISEC-Global. The Membership fee shall be decided by the Steering Committee.
- (3) A new Member shall be reviewed for competence by the Local Chapter and Local Chapters shall update their records to the Secretary-General on a regular basis.
- (4) An eligible Member shall be committed to human right protection, law abiding and other social norms accepted by almost all countries, including compliance with the UN Resolutions.
- (5) A Local Chapter may withdraw from UNISEC-Global in a written format addressing to the Secretary-General at least two months prior to the date of its withdrawal.
- (6) Members must annually report their activities to their Local Chapters and Local Chapters must in turn report their collective activities to the Secretary-General.

#### **Article 7 Headquarters**

- (1) The Headquarters of UNISEC-Global is located at 2-3-2 Yayoi, Bunkyo-ku, Tokyo 113-0032, Japan.
- (2) The Headquarters shall be managed by the Secretary-General, under the auspices of UNISEC-Japan.
- (3) The Headquarters may be transferred to any country/region that is member of UNISEC-Global after approving by a majority of the Steering Committee members.
- (4) Any Local Chapter can apply to the Secretary-General to act as Headquarters for UNISEC-Global.

## **Article 8 Mission**

As stipulated in the “Terms of Reference for UNISEC-Global”, it will create an environment that will promote the free exchange of ideas, information and capabilities relating to space engineering and its applications, especially for young people, including those in developing countries and emerging economies.

## **Article 9 Purpose**

In order to implement its mission of creating an environment for promoting the free exchange of ideas, information and capabilities relating to space engineering and its applications, UNISEC-Global shall:

- (1) Provide a forum periodically for young researchers, university students and other stakeholders across the world, in cooperation with the Members,
- (2) Facilitate and promote practical space development activities at university level, such as designing, developing, manufacturing, launching and operating micro/nano/pico satellites and rockets, including their payloads,
- (3) Form a network among the Members to ensure closer communications.

## **Article 10 Challenges by Members**

The Members are expected to make efforts to:

- (1) Promote project based space education,
- (2) Ensure that their respective policy-and-decision makers understand the importance of space education and support their activities,
- (3) Share their activities openly with other non-members so that the latter can benefit from the former’s experiences, know-how, problem-solving techniques and other skills/technical skills.
- (4) Ensure that their local UNISEC activities are complying with their local laws and policies, especially, for the legal and financial aspects.

## **Article 11 Local Chapter**

- (1) A Local Chapter is a local entity of UNISEC and is called UNISEC- (followed by mainly a country name) (ex. UNISEC-Japan).
- (2) Based upon an application to the Steering Committee through the Secretary-General, a Local Chapter shall be acknowledged at the UNISEC-Global Meeting.
- (3) Once acknowledged, a Local Chapter becomes a full member of UNISEC-Global.
- (4) This acknowledgement shall be effective for one year from the date of its issuance and be automatically extended every one year except as otherwise mentioned in a written form two month prior to the withdrawal.
- (5) Minimum conditions for establishing a Local Chapter shall consist of two or more educational institutes (mainly university) with a professor or equivalent teaching staff and a student representative at each institute.
- (6) The internal structure of a Local Chapter can be implanted independently, reflecting its local

conditions.

- (7) Each Local Chapter shall have faculty representative and student representative whom report to UNISEC-Global Secretary-General and attend the UNISEC-Global Meetings.
- (8) Local Chapters shall participate at least every other year in the UNISEC-Global Meeting to report their activities.

### **Article 12 Point of Contact (POC)**

The functions of a local point of contact (POC) are:

(1) Information Clearinghouse Function

As a first contact person in his/her country to receive related information from the Organizer and others, POC is expected to take necessary actions including forwarding it to appropriate persons for such actions.

(2) Fund Raising Function

POC is expected to make an effort in taking fund raising activities for covering the travel cost for local representative(s) who will participate in the UNISEC-Global Meeting.

(3) Reporting and Advising Function

POC is expected to report related information to the Organizer in return for the above 1. and to give advice to the Organizer about the Meeting and other related matters, if necessary.

(4) Disseminations and Announcement Function

POC is expected to help UNISEC-Global to disseminate the information and make announcements about UNISEC-Global-led events, including social events.

(5) Termination of the Functions

POC can either resign or be dismissed at any time. The resignation shall be made in a written form to the Secretary-General. The dismissal shall be effective if the Steering Committee would agree by majority vote and be reported to POC in question by the Secretary-General immediately.

### **Article 13 Amendment**

Any member of UNISEC-Global may propose an amendment to the Article of Association by writing a letter to the Secretary-General, who will in turn refer it to the Steering Committee. The Steering Committee shall decide its adoption by majority vote.

### **Article 14 Dissolution**

UNISEC-Global may be dissolved by the resolution of the UNISEC-Global Meeting by majority vote. The Steering Committee shall be a sole body to propose such dissolution to the UNISEC-Global Meeting.

(End)

Attachment 3

## Local Chapters and Points of Contact

(alphabetical order)

As of April 13, 2017

Name of Local Chapter	Point of Contact(POC)	POC's affiliation
UNISEC-Bangladesh	Prof. G.M. Tarekul Islam	Bangladesh University of Engineering and Technology (BUET)
	Dr. Md Khalilur Rhaman	Associate Professor CSE Department, BRAC University
UNISEC-Bulgaria	Prof. Plamen I. Dankov	Sofia University "St. Kliment Ohridski"
	Dr. Vesselin Vassilev	Cluster Aerospace Technologies, Research and Applications (CASTRA)
UNISEC-Egypt	Prof. Ayman Kassem	Professor, Aerospace Engineering Department, Cairo University
	Prof. Mohammed Khalil Ibrahim	Professor, Aerospace Engineering Department, Cairo University
UNISEC-Germany	Prof. Klaus Schilling	University of Würzburg
UNISEC-Italy	Prof. Fabio Santoni	Dipartimento di Ingegneria Astronautica, Elettrica ed Energetica (DIAEE), University of Rome la Sapienza
UNISEC-Japan	Prof. Mengu Cho	Kyushu Institute of Technology (Kyutech)
UNISEC-Lithuania	Dr. Vidmantas Tomkus	Lithuanian Aerospace Association”
UNISEC-Nigeria	Mr. Stanislaus Ogechukwu Nnadih	African Regional Center for Space Science and Technological Education-English
UNISEC-Mexico	Dr. Barbara Bermudez Reyes	Centro de Investigacion e Innovacion en Ingenieria Aeronautica (CIIA), Universidad Autonoma de Nuevo Leon (UANL)
	Blanca Rebollar	The Mexican Space Agency
UNISEC-Peru	Dr. Héctor Manuel Bedón Monzón	The National University of Engineering (UNI)

UNISEC-Samara	Prof. Igor V. Belokonov	Head of Space Research Department, Samara National Research University
UNISEC-SAR	Arno Barnard	University of Stellenbosch, South Africa
	Zolana Joao	General Manager for the Angolan National Office for Space Affairs (GGPEN)
	Ivandro Rodrigues	the Angolan National Office for Space Affairs (GGPEN)
	Smita Francis	Namibia's University of Science & Technology
UNISEC-Tunisia	Prof. Kamel Besbes	Professor University of Monastir/ DG Centre for Research on Microelectronics and Nanotechnology, Technopark Sousse
UNISEC-Turkey	Prof. A. Rüstem Aslan	Head of Space System Lab, Astronautical Engineering at Istanbul Technical University (ITU)

#### Association of Local Chapters

UNISEC-Europe (Association of Local Chapters in Europe)	Prof. Klaus Schilling	University of Würzburg
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## Points of Contact (POC) for the Local Chapter (LC) and the Planned Local Chapter (LC)

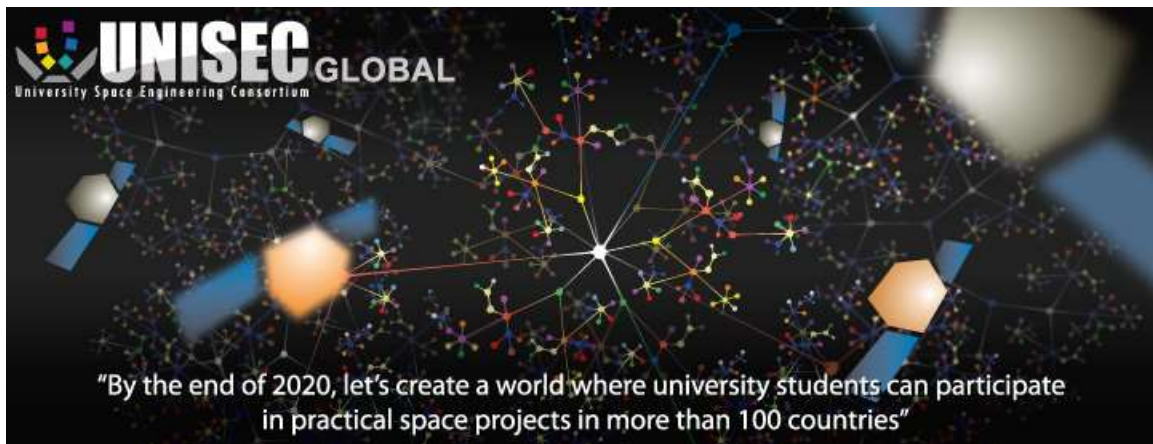
As of April 13, 2017

(alphabetical order)

Country	POC for LC/Planned LC	POC's affiliation
Angola	Zolana João	Gabinete de Gestão do Programa Espacial Nacional (GGPEN)
	Ivandro Rodrigues	
Australia	Sean Tuttle	University of New South Wales
Bangladesh	G.M. Tarekul Islam	Bangladesh University of Engineering and Technology
	Md Khalilur Rhaman	BRAC University
Belarus	Vladimir Saetchnikov	Belarusian State University
Brazil	João Dallamuta	Universidade Tecnológica Federal do Paraná
Bulgaria	Plamen I. Dankov	Sofia University "St. Kliment Ohridski"
	Vesselin Vassilev	Cluster Aero-Space Technologies, Research & Applications (CASTRA)
Canada	Larry Reeves	Canadian Satellite Design Challenge Management Society
Costa Rica	Mario Gómez Jenkins	Costa Rican Institute of Technology
Egypt	Ayman Kassem	Cairo University
	Mohammed Khalil Ibrahim	
Ghana	Manfred Quarshie	Space Science Systems Research Institute
	Sharon Emelia Dornukie Sappor	All Nations University College (ANUC)
Guatemala	Willy Ricardo Cabañas Villagrán	University Rafael Landivar
Germany	Klaus Schilling	University of Würzburg
Indonesia	Thombi Layukallo	Surya University
Italy	Fabio Santoni	University of Rome la Sapienza
Japan	Mengu Cho	Kyushu Institute of Technology
Kenya	Faith Karanja	University of Nairobi
Korea	In-Seuck Jeung	Seoul National University
	Hyochoong Bang	The Korea Advanced Institute of Science and Technology (KAIST)

Lithuania	Vidmantas Tomkus	Lithuanian Aerospace Association
México	Blanca Rebollar	The Mexican Space Agency
	Barbara Bermudez Reyes	Universidad Autonoma de Nuevo Leon
Mongolia	Tsolmon Renchin	The National University of Mongolia
Morocco	Naoufal Raissouni	University of Abdelmalek Essaadi
Namibia	Smita Francis	Namibia University of Science and Technology
Nepal	Rakesh Chandra Prajapati	ORION Space
	Anup Thapa	Kathmandu University
Nigeria	Stanislaus Ogechukwu Nnadih	African Regional Centre for Space Science and Technology Education in English
New Zealand	Jim Hefkey	The University of Auckland
Peru	Hector Bedon	The National University of Engineering (UNI)
Philippines	Rogel Mari Sese	Regulus SpaceTech
	Rosario Ang	The University of the Philippines Diliman (UPD)
Samara (Russia)	Igor V Belokonov	Samara National Research University
Saudi Arabia	Sultan Hasan AlSultan	The Environmental Remote Sensing Center TECRS
Singapore	Kay Soon Low	National University of Singapore
Slovenia	Saso Blazic	University of Ljubljana
South Africa	Arno Barnard	University of Stellenbosch
Spain	Fernando Aguado-Agelet	University of Vigo, CINAIE (Galician Aerospace Centre)
Taiwan	Jyh-Ching Juang	National Cheng Kung University
Thailand	Sawat Tantiphawadi	SpaceThai
	Phongsatorn Saisutjarit	King Mongkut's University of Technology North Bangkok (KMUTNB)
Tunisia	Kamel Besbes	University of Monastir/ DG Centre for Research on Microelectronics and Nanotechnology, Technopark Sousse
Turkey	Alim Rustem Aslan	Istanbul Technical University
Ukraine	Oleksii V. Kulyk	National Aerospace Educational Center of Youth
USA	Jordi Puig-Suari	California Polytechnic State University (Cal Poly)
	Amal Chandran	University of Colorado
Vietnam	Nguyen Huu Diep	Vietnam National Satellite Center (VNSC)

# **UNISEC-Global Local Chapter Activity Reports**



**April 13, 2017**



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# UNISEC-Bangladesh - International Activity Report

UNISEC-Bangladesh (BRAC University)  
 POC: Dr. Md. Khalilur Rhaman  
 Email: khalilur@bracu.ac.bd  
 URL: <http://khalil.robu-lab.org/>

## UNISEC-Global Participation

<input type="checkbox"/> Nano-Satellite Symposium (NanoSat);	<input type="checkbox"/> 1 <sup>st</sup>	<input type="checkbox"/> 2 <sup>nd</sup>	<input type="checkbox"/> 3 <sup>rd</sup>	<input type="checkbox"/> 4 <sup>th</sup>	<input type="checkbox"/> 5 <sup>th</sup>	<input type="checkbox"/> 6 <sup>th</sup>	<input type="checkbox"/> 7 <sup>th</sup>
<input type="checkbox"/> UNISEC-Global Meeting (UNI-GLO);	<input type="checkbox"/> 1 <sup>st</sup>	<input type="checkbox"/> 2 <sup>nd</sup>	<input type="checkbox"/> 3 <sup>rd</sup>	<input type="checkbox"/> 4 <sup>th</sup>			
<input type="checkbox"/> Mission Idea Context (MIC);	<input type="checkbox"/> MIC1	<input type="checkbox"/> MIC2	<input type="checkbox"/> PreMIC3	<input type="checkbox"/> MIC3	<input type="checkbox"/> PreMIC4	<input type="checkbox"/> MIC4	
<input type="checkbox"/> Deorbit Devise Competition (DDC)/Deorbit Mitigation Competition (DMC)	<input type="checkbox"/> DDC		<input type="checkbox"/> DMC				
<input type="checkbox"/> CanSat Leader Training Program	<input type="checkbox"/> 1 <sup>st</sup>	<input type="checkbox"/> 2 <sup>nd</sup>	<input type="checkbox"/> 3 <sup>rd</sup>	<input type="checkbox"/> 4 <sup>th</sup>	<input type="checkbox"/> 5 <sup>th</sup>	<input type="checkbox"/> 6 <sup>th</sup>	<input type="checkbox"/> 7 <sup>th</sup>

## UNISEC Global Members' EventsParticipation

<input type="checkbox"/> UNISEC-Samara Summer School
Other (specify)

## Non-UNISEC International Events Participations

1. BRAC University joined The “BIRDS project”, which is a cross-border interdisciplinary satellite project for non-space faring countries supported by Japan. The 7 participatory countries for this project include Bangladesh, Japan, Ghana, Mongolia, Thailand, Malaysia and Nigeria and the mission aims to deliver ready-to-launch CubeSat by 2017. During the 2 years project, selected students from these countries will work together to design, develop and operate 5 units of identical 1U CubeSat (1kg, 10cm cubic) which is a type of miniaturized satellite for space research, each belonging to the five participating countries. These satellites will be operated from 7 identical ground stations. This project will allow Bangladesh’s engineers and university students to get hands on experience and education on satellite engineering and learn about the greater challenges of satellite mission. As a result, in future, this group of engineers will be able to provide their expert assistance to Bangladesh Government’s mission to launch first geostationary communication satellite of Bangladesh, “Bangabondhu Satellite”.
2. Research Paper Presented In IOP Conference Series: Earth And Environmental Science, Volume 38, Number 1
3. First International BIRDS Project Workshop and Critical Design Review (CDR) was held at the Tobata Campus of Kyushu Institute of Technology (Kyutech), Japan. It was certainly an ‘important event where students from five countries presented their analysis and test reports to the respected professors and delegates, and the national and international press and media in order to progressing the next step of BIRDS project. Dr. Syed Saad Andaleeb, VC of BRAC University, Professor Dr. A. A. Ziauddin

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Ahmad, Chairperson of Department of Mathematics and Natural Sciences, Dr. Md. Khalilur Rhaman, Associate Professor of CSE and few students were participated the event through online web conference. Vice-Chancellor Dr. Syed Saad Andaleeb said BRAC University has decided to focus on more cutting edge technology research and to open a satellite laboratory and, one day we'll build satellites at our own laboratory.

**If there were oral presentations given above, write the title with details.**

<sup>2</sup> **Title:** Exploring the Opportunities of a Balloon-Satellite in Bangladesh for Weather Data Collection and Vegetative Analysis

**Abstract:** For a third world country like Bangladesh, satellite and space research is not feasible due to lack of funding. Therefore, in order to imitate the principles of such a satellite Balloon Satellite can easily and inexpensively be setup. Balloon satellites are miniature satellites, which are cheap and easy to construct. This paper discusses a BalloonSat developed using a Raspberry Pi, IMU module, UV sensor, GPS module, Camera and XBee Module. An interactive GUI was designed to display all the data collected after processing. To understand nitrogen concentration of a plant, a leaf color chart is used. This paper attempts to digitalize this process, which is applied on photos taken by the BallonSat.

# UNISEC-Bangladesh - Activity Report

UNISEC-Bangladesh (BRAC University)  
POC: Dr. Md. KhalilurRhaman  
Email: Khalilur@bracu.ac.bd  
URL: <http://khalil.robu-lab.org/>

## Overview

BRAC University becomes a member of UNISEC-Bangladesh in 2014. Since then, BRAC University has been playing an important role to popular space science among the young generation of Bangladesh. Under the umbrella of UNISEC-Bangladesh, BRAC University students organized and participated in different workshops, events, and seminars.

## Date and Venue

Announcement Date : 5/09/2016  
Event Date : 8/10/2016  
Venue: Enayetpur & BAF Shaheen

## Participation

Total number of participants

Category of Participants  Students  Engineers/Instructors  Both  
International  No  Yes

Participants

If yes, how many international participants were attended the activity?

## Sponsors

BRAC University

## Participants Group Photo



Picture 1 : Celebrated “World Space Week 2016” in BAF Shaheen School & College



Picture 2: Bangladesh Astronomical Society invited UNISEC Bangladesh team at Enayetpur

## Results and Conclusion

Bangladesh Astronomical Society has been celebrating “World Space Week” from 2003 at “MohakashBhaban” premises located at Enayetpur, Shirajgonj. The General Secretary of Bangladesh Astronomical Society invited BRAC University to join this year’s celebration. As a part of this, a team of 15 members from UNISEC Bangladesh Local Chapter and Robotics Club of BRAC University went all the way to Enayetpur to attend the celebration ceremony.

The team reached the Mohakash Bhaban at around 12pm. The celebration programme was hosted by Mr. Obayedur Rahman, the Principal of Atik International School. Mr. A F M Hasan, the Education officer of Chapainawabgonj Upzila, The Principal of ICL School and College Mr. Hosain Ali and an officer from Bangladesh Space Research and Remote Sensing Organization (SPARRSO), Mr. Reza Sarkar delivered very motivational speech in presence of around 3000 audiences, mainly are the students of local Schools, Colleges, University and Medical college, their guardians and many other Space-enthusiast people. Mr. F R Sarker, the chairperson of the ceremony, described some unknown facts about space in his speech. Mr. Shourbh Ahmed from UNISEC Global Local Chapter and BRAC Onnesha ground station team delivered a very inspirational speech for the crowd, which everyone enjoyed a lot. The chief guest of the ceremony was the vice chancellor of KhwajaYunus Ali University Professor Dr. Hossain Reza. The ceremony consisted of Space art competition, Quiz competition, Space dance competition and Space drama competition. All participants of Space art competition and all winners from each category got badges from ROBU as a token of appreciation.

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As a part of this celebration programme, on 6th October, 2016, the Robotics Club of BRAC University went to BAF Shaheen School & College situated and celebrated “World Space Week 2016” with hundreds of their students of different grades. POC of UNISEC Bangladesh, Dr. Khalilur Rahman also gave a heart-warming speech about space and robotics to everyone which was appreciated by all of the students present at the event.

Members of UNISEC Bangladesh Local Chapter went there with 20 members working as volunteers in the event and decorated the BAF Shaheen auditorium for the event from the morning. Many of the robots of ROBU were presented at the front for exhibition such as Chondrobot2, Wall-E and Mongol Tori, Quad-copter etc.

The program began at 11:00am with videos of the creation of robots by ROBU were shown. Then a video about Space was shown along with a presentation about the different entities of the giant planets and solar systems surrounding us in the space. Another presentation about the BRACU Onnesha was given to the students. After that, an interactive session was held with the students where they were allowed to ask questions about our nano-satellite and space. Following the interactive session, a quiz session was held. Students from class 6,7 and 9 were asked different sets of questions about our presentations and winners were given gifts and badges. Then the winners of the quiz session played with the Soccer Bots in the Soccer Bot matches. 3 matches were held which was shown in the projector screen to the audience. The matches ended in a tie so all of the players were awarded with gifts.

It was an informative and interactive event held at the school where UNISEC Global Local Chapter has successfully celebrated the World Space week along with hundreds of interested and brilliant minds of the country’s one of the most prestigious institutions.

# UNISEC-Bulgaria International Activity Report

UNISEC-Bulgaria  
 POC: Vesselin Vassilev  
 Email: vesselin.vassilev@castra.org  
 URL:NA

## UNISEC-Global Participation

<input type="checkbox"/> Nano-Satellite Symposium (NanoSat);				■ 7 <sup>th</sup>
<input type="checkbox"/> UNISEC-Global Meeting (UNI-GLO);				
	<input type="checkbox"/> 2 <sup>nd</sup>	<input type="checkbox"/> 3 <sup>rd</sup>		■ 4 <sup>th</sup>
<input type="checkbox"/> Mission Idea Context (MIC);				
	<input type="checkbox"/> MIC2	<input type="checkbox"/> MIC3		■ MIC4
<input type="checkbox"/> Deorbit Devise Competition (DDC)/Deorbit Mitigation Competition (DMC)				No
<input type="checkbox"/> CanSat Leader Training Program				No

## UNISEC Global Members' Events Participation

No
Other (specify)

## Non-UNISEC International Events Participations

NASA Simulation Exploration Experience (SEE) 2017 : International student project to develop a Moon base

First national Bulgarian high-school student project competition: 'Space debris: from the problem to the solution', April 2017

European Space Agency Industry Days 2016;

European Commission workshop on space technology – February 2017

GEO-CRADLE Workshop on Earth Observation – 2017 Sofia

**If there were oral presentations given above, write the their title with details.**

# UNISEC-Bulgaria - Activity Report

UNISEC-Bulgaria  
 POC: Vesselin Vassilev  
 Email: [vesselin.vassilev@castra.org](mailto:vesselin.vassilev@castra.org)

## Overview

In 2016, UNISEC-BULGARIA acted as the Local Organizing Committee of the 7<sup>th</sup> Nano-Satellite Symposium and the 4<sup>th</sup> UNISEC – GLOBAL meetings, held for the first time in Europe, in Bulgaria. During the 6 day event, more than 100 oral presentations and talks were given including 10 poster, 11 discussion groups meetings, 8 local chapter reports. Many other informal meetings and discussions were held strengthening the interactions and collaboration in the nano-satellite community worldwide. For further information, please see <https://unisec2016.castra.org>

## Date and Venue

Announcement Date  
 Event Date: October 18, 2016 – October 23, 2016  
 Venue: Sports and Wellness Resort "Kamchia", Varna, Bulgaria

## Participation

Total number of participants 140  
 Category of Participants  Students  Engineers/Instructors  Both  
 International Participants Yes  
 If yes, how many international participants were attended the activity? 107

## Sponsors

UNISEC-GLOBAL- Japan, CASTRA-Bulgaria

## Participants Group Photo



## Results and Conclusion

The event was a great success. It helped to further develop the professional and personal interactions in the nano-satellite community worldwide and especially to motivate the interest for students and young professional for developing a career in the space industry and R&D fields



# UNISEC-Egypt - International Activity Report

UNISEC-Egypt  
 POC: Ayman Hamdy Kassem  
 Email: drayman@yahoo.com  
 URL: N/A



## UNISEC-Global Participation

<input type="checkbox"/> Nano-Satellite Symposium (NanoSat);	<input checked="" type="checkbox"/> 1 <sup>st</sup>	<input checked="" type="checkbox"/> 2 <sup>nd</sup>	<input checked="" type="checkbox"/> 3 <sup>rd</sup>	<input checked="" type="checkbox"/> 4 <sup>th</sup>	<input type="checkbox"/> 5 <sup>th</sup>	<input checked="" type="checkbox"/> 6 <sup>th</sup>	<input checked="" type="checkbox"/> 7 <sup>th</sup>
<input type="checkbox"/> UNISEC-Global Meeting (UNI-GLO);	<input checked="" type="checkbox"/> 1 <sup>st</sup>	<input checked="" type="checkbox"/> 2 <sup>nd</sup>	<input checked="" type="checkbox"/> 3 <sup>rd</sup>	<input checked="" type="checkbox"/> 4 <sup>th</sup>			
<input type="checkbox"/> Mission Idea Context (MIC);	<input checked="" type="checkbox"/> MIC1	<input checked="" type="checkbox"/> MIC2	<input checked="" type="checkbox"/> PreMIC3	<input checked="" type="checkbox"/> MIC3	<input type="checkbox"/> PreMIC4	<input type="checkbox"/> MIC4	
<input type="checkbox"/> Deorbit Devise Competition (DDC)/Deorbit Mitigation Competition (DMC)	<input type="checkbox"/> DDC			<input type="checkbox"/> DMC			
<input type="checkbox"/> CanSat Leader Training Program	<input checked="" type="checkbox"/> 1 <sup>st</sup>	<input type="checkbox"/> 2 <sup>nd</sup>	<input checked="" type="checkbox"/> 3 <sup>rd</sup>	<input type="checkbox"/> 4 <sup>th</sup>	<input type="checkbox"/> 5 <sup>th</sup>	<input type="checkbox"/> 6 <sup>th</sup>	<input checked="" type="checkbox"/> 7 <sup>th</sup>

## UNISEC Global Members' Event Participation

<input type="checkbox"/> UNISEC-Samara Summer School
Other (specify)

## Non-UNISEC International Participations

- 2013: 6th International Conference on Recent Advances in Space Technologies (RAST), 12 Jun - 14 Jun 2013, Istanbul, Turkey.
- 2014: The SSTLab's rover team participated in ARLISS 2014.
- 2015: The SSTLab's rover team participated in ARLISS 2015.
- 2016: The SSTLab's rover team participated in ARLISS 2016, and they managed to achieve the 7th place among 23 participating teams.

## If there were oral presentations given above, write their title with details.

1. Hassan Aly, Omar Sharkawy, Ashraf Nabil, Ahmed Yassin, Mohamed Tarek, Samy M. Amin, and Mohammed Khalil Ibrahim, "Project-based space engineering education: Application to autonomous rover-back CanSat", RAST 2013.
2. Ayman Hamdy Kassem, "Aerospace engineering department at Cairo University: Past, present, and future", RAST 2013.

# UNISEC-Egypt - Activity Report (1)

UNISEC-Egypt  
POC: Ayman Hamdy Kassem  
Email: draymank@yahoo.com  
URL: N/A



## Overview

The First CanSat Training Program (CTP1) was conducted by UNISEC-Egypt through the Space System Technology Laboratory (SSTLAB) at Cairo University to contribute to capacity building in space technology and improve teaching methods based on space engineering education. In the next 5 years, education using CanSat will be expected in about 100 nations in the world.

## Date and Venue

Announcement Date April, 2011  
Event Date July 20-31, 2011  
Venue Aerospace Engineering Department, Cairo University

## Participation

Total number of participants

Category of Participants  Students  Engineers/Instructors  Both  
International Participants  No  Yes

If yes, how many international participants were attended the activity?

## Sponsors

Faculty of Engineering, Cairo University

## Participants Group Photo



## Results and Conclusion

17 undergraduate students were successfully provided hands-on training of CanSat. The activity was considered as the first cycle of the CanSat Training Program (CTP1) at Cairo University and Egypt at large,

## UNISEC-Egypt - Activity Report (2)

UNISEC-Egypt  
 POC: Ayman Hamdy Kassem  
 Email: draymank@yahoo.com  
 URL: N/A



### Overview

The Second CanSat Training Program (CTP2) was conducted by UNISEC-Egypt through the Space System Technology Laboratory (SSTLAB) at Cairo University to contribute to capacity building in space technology and improve teaching methods based on space engineering education. In the next 5 years, education using CanSat will be expected in about 100 nations in the world.

### Date and Venue

Announcement Date    November, 2011  
 Event Date             January 28 – February 11, 2012  
 Venue                    Aerospace Engineering Department, Cairo University

### Participation

Total number of participants

Category of Participants     Students     Engineers/Instructors     Both  
 International Participants     No                     Yes

If yes, how many international participants were attended the activity?

### Sponsors

Faculty of Engineering, Cairo University.

### Participants Group Photo



### Results and Conclusion

11 undergraduate students were successfully provided hands-on training of CanSat. The instructors of CTP2 were the graduate students of CTP1.

## UNISEC-Egypt - Activity Report (3)

UNISEC-Egypt  
 POC: Ayman Hamdy Kassem  
 Email: draymank@yahoo.com  
 URL: N/A



### Overview

The Third CanSat Training Program (CTP3) was conducted by UNISEC-Egypt through the Space System Technology Laboratory (SSTLAB) at Cairo University to contribute to capacity building in space technology and improve teaching methods based on space engineering education. In the next 5 years, education using CanSat will be expected in about 100 nations in the world.

### Date and Venue

Announcement Date    November, 2012  
 Event Date             January 25 – February 8, 2013  
 Venue                    Aerospace Engineering Department, Cairo University

### Participation

Total number of participants

Category of Participants     Students     Engineers/Instructors     Both

International Participants     No                     Yes

If yes, how many international participants were attended the activity?

### Sponsors

Faculty of Engineering, Cairo University.

### Participants Group Photo



### Results and Conclusion

12 undergraduate students were successfully provided hands-on training of CanSat. The instructors of CTP3 were the graduate students of CTP1 and CTP2.

## UNISEC-Egypt - Activity Report (4)

UNISEC-Egypt  
 POC: Ayman Hamdy Kassem  
 Email: draymank@yahoo.com  
 URL: N/A



### Overview

The Fourth CanSat Training Program (CTP4) was conducted by UNISEC-Egypt through the Space System Technology Laboratory (SSTLAB) at Cairo University to contribute to capacity building in space technology and improve teaching methods based on space engineering education. In the next 5 years, education using CanSat will be expected in about 100 nations in the world.

### Date and Venue

Announcement Date    November, 2013  
 Event Date             February 6 – 22, 2014  
 Venue                    Aerospace Engineering Department, Cairo University

### Participation

Total number of participants

Category of Participants     Students     Engineers/Instructors     Both

International Participants     No                     Yes

If yes, how many international participants were attended the activity?

### Sponsors

Faculty of Engineering, Cairo University.

### Participants Group Photo



### Results and Conclusion

12 undergraduate students were successfully provided hands-on training of CanSat. The instructors of CTP4 were the graduate students of CTP3.

## UNISEC-Egypt - Activity Report (5)

UNISEC-Egypt  
 POC: Ayman Hamdy Kassem  
 Email: draymank@yahoo.com  
 URL: N/A



### Overview

The Fifth CanSat Training Program (CTP5) was conducted by UNISEC-Egypt through the Space System Technology Laboratory (SSTLAB) at Cairo University to contribute to capacity building in space technology and improve teaching methods based on space engineering education. In the next 5 years, education using CanSat will be expected in about 100 nations in the world.

### Date and Venue

Announcement Date    27<sup>th</sup> January, 2015  
 Event Date             April , 2015  
 Venue                    Aerospace Engineering Department, Cairo University

### Participation

Total number of participants

Category of Participants     Students     Engineers/Instructors     Both  
 International Participants     No                     Yes

If yes, how many international participants were attended the activity?

### Sponsors

Faculty of Engineering, Cairo University.

### Participants Group Photo



### Results and Conclusion

21 undergraduate students were successfully provided hands-on training of CanSat. The instructors of CTP5 were the graduate students of CTP4.

## UNISEC-Egypt - Activity Report (6)

UNISEC-Egypt  
 POC: Ayman Hamdy Kassem  
 Email: draymank@yahoo.com  
 URL: N/A



### Overview

The Sixth CanSat Training Program (CTP6) was conducted by UNISEC-Egypt through the Space System Technology Laboratory (SSTLAB) at Cairo University to contribute to capacity building in space technology and improve teaching methods based on space engineering education. In the next 5 years, education using CanSat will be expected in about 100 nations in the world.

### Date and Venue

Announcement Date      January 31, 2016  
 Event Date                February 11 , 2016  
 Venue                        Aerospace Engineering Department, Cairo University

### Participation

Total number of participants  
 Category of Participants       Students       Engineers/Instructors       Both  
 International Participants       No                       Yes  
 If yes, how many international participants were attended the activity?

### Sponsors

Faculty of Engineering, Cairo University.

### Participants Group Photo



### Results and Conclusion

20 undergraduate students were successfully provided hands-on training of CanSat. The instructors of CTP6 were the graduate students of CTP5.

# UNISEC-Germany - International Activity Report

UNISEC-Germany  
 POC: Klaus Schilling  
 Email: [schi@informatik.uni-wuerzburg.de](mailto:schi@informatik.uni-wuerzburg.de)  
 URL: N/A

## UNISEC-Global Participation

- |  |   |   |  |  |  |   |   |
|--|---|---|--|--|--|---|---|
| <input type="checkbox"/> Nano-Satellite Symposium (NanoSat);                                   | <input checked="" type="checkbox"/> 1 <sup>st</sup> | <input type="checkbox"/> 2 <sup>nd</sup>            | <input type="checkbox"/> 3 <sup>rd</sup> | <input type="checkbox"/> 4 <sup>th</sup> | <input type="checkbox"/> 5 <sup>th</sup> | <input checked="" type="checkbox"/> 6 <sup>th</sup> | <input checked="" type="checkbox"/> 7 <sup>th</sup> |
| <input type="checkbox"/> UNISEC-Global Meeting (UNI-GLO);                                      | <input checked="" type="checkbox"/> 1 <sup>st</sup> | <input checked="" type="checkbox"/> 2 <sup>nd</sup> | <input type="checkbox"/> 3 <sup>rd</sup> | <input type="checkbox"/> 4 <sup>th</sup> | <input type="checkbox"/> 5 <sup>th</sup> | <input type="checkbox"/> 6 <sup>th</sup>            | <input type="checkbox"/> 7 <sup>th</sup>            |
| <input type="checkbox"/> Mission Idea Context (MIC);   | <input type="checkbox"/> MIC1                       | <input checked="" type="checkbox"/> MIC2            | <input type="checkbox"/> PreMIC3         | <input type="checkbox"/> MIC3            | <input type="checkbox"/> PreMIC4         | <input type="checkbox"/> MIC4                       |   |
| <input type="checkbox"/> Deorbit Devise Competition (DDC)/Deorbit Mitigation Competition (DMC) | <input type="checkbox"/> DDC                        | <input type="checkbox"/> DMC                        |  |  |  |   |   |
| <input type="checkbox"/> CanSat Leader Training Program  | <input type="checkbox"/> 1 <sup>st</sup>            | <input type="checkbox"/> 2 <sup>nd</sup>            | <input type="checkbox"/> 3 <sup>rd</sup> | <input type="checkbox"/> 4 <sup>th</sup> | <input type="checkbox"/> 5 <sup>th</sup> | <input type="checkbox"/> 6 <sup>th</sup>            | <input type="checkbox"/> 7 <sup>th</sup>            |

## UNISEC Global Members' Events Participation

- UNISEC-Samara Summer School
- Other (specify)

## Non-UNISEC International Events Participations

IAC, IAA Symposium on Small Satellites for Earth Observation, 4S, Small Sat, among others

### If there were oral presentations given above, write the title with details.

**Pico satellite activities of the University of Würzburg;** Marco Schmidt; 1<sup>st</sup> Nano-Satellite-Symposium; Tokyo, Japan; 2010

**Country Reports -German Pico-Satellites;** Prof. Dr. Klaus Schilling; The 1<sup>st</sup> UNISEC-Global Meeting; Tokyo, Japan; 2013

**Approaches for Efficient Global Ground Station Networks for Multiple Small Satellites;** Slavi Dombrovski; The 2<sup>nd</sup> UNISEC-Global Meeting; Kitakyushu, Japan; 2014

**UNISEC global Student Space Activities in Würzburg, Germany;** Philip Bangert and Alexander Kramer; The 3<sup>rd</sup> UNISEC Global Meeting; Tokyo, Japan; 2015

**Attitude Control of UWE-4 for Orbit Correction During Formation Flying,** Siddarth Dadhich, Philip Bangert, Klaus Schilling; 6<sup>th</sup> Nano-Satellite Symposium; Kobe, Japan; 2015

**Lessons Learned From More Than 10 Years CubeSat Activities in Würzburg, Germany;** Stephan Busch; The 4<sup>th</sup> UNISEC Global Meeting; Bulgaria; 2016



# UNISEC-Germany - Activity Report

UNISEC-Germany  
 POC: Klaus Schilling  
 Email: schi@informatik.uni-wuerzburg.de  
 URL: N/A

## Overview

### 8<sup>th</sup> Pico and Nano Satellite Workshop

#### Date and Venue

Last Event	September 15-16, 2015
Upcoming Event	September 13-14, 2017
Venue	University of Würzburg, Germany

#### Participation

Total number of participants	68
Category of Participants	<input type="checkbox"/> Students <input type="checkbox"/> Engineers/Instructors <input checked="" type="checkbox"/> Both
International Participants	<input type="checkbox"/> No <input checked="" type="checkbox"/> Yes
If yes, how many international participants were attended the activity?	23

#### Sponsors

International Academy of Astronautics  
 bavAIRia e.V.  
 UNISEC-Europe

#### Participants Group Photo



#### Results and Conclusion

The focus of the workshop is on pico- and nano-satellite missions, dedicated subsystems and fields of applications of small satellites. All contributions especially in the area of possible applications in telecommunications, Earth observation, space science and education are welcome. Further topics to be emphasized are satellite swarms, miniaturization techniques and micro components.

The aim of the workshop is to bring together the research community of pico- and nano-satellites enabling them to share their visions and showcase the technological and scientific advancements made. The workshop intends to bring to the fore the wide array of research activities, interests and motivations driving the advancements in pico- and nano-satellites.

The hosts of the workshop, University of Würzburg and TU Berlin, are German competence and research centers for small satellites. Through the research and development of the UWE-program (University Würzburg's Experimental satellites) and the BEESAT of TU Berlin advanced technologies in the area of small satellites have been promoted. With new research programs for nano-satellites, the international University community has further enhanced its space research capabilities activities.

Ever since its inception in 2007, the workshop has steadily gained significance by providing the bridge between the Astronautics industry and research organizations to uphold true spirits of pico- and nano-satellites. The workshop is organized yearly in alternation by Universität Würzburg and TU Berlin.

In parallel to the 10<sup>th</sup> Pico and Nano Satellite Workshop the Pre-5th Mission Idea Contest Workshop (PreMIC5) will take place at the University of Würzburg.

# UNISEC-Italy - International Activity Report

UNISEC-Italy  
 POC: Fabio Santoni  
 Email: fabio.santoni@uniroma1.it  
 URL: <http://unisonitaly.eu/en/>



## UNISEC-Global Participation

<input type="checkbox"/> Nano-Satellite Symposium (NanoSat);	<input type="checkbox"/> 1 <sup>st</sup>	<input type="checkbox"/> 2 <sup>nd</sup>	<input type="checkbox"/> 3 <sup>rd</sup>	<input type="checkbox"/> 4 <sup>th</sup>	<input type="checkbox"/> 5 <sup>th</sup>	<input type="checkbox"/> 6 <sup>th</sup>	<input checked="" type="checkbox"/> 7 <sup>th</sup>
<input type="checkbox"/> UNISEC-Global Meeting (UNI-GLO);	<input type="checkbox"/> 1 <sup>st</sup>	<input type="checkbox"/> 2 <sup>nd</sup>	<input checked="" type="checkbox"/> 3 <sup>rd</sup>			<input checked="" type="checkbox"/> 4 <sup>th</sup>	
<input type="checkbox"/> Mission Idea Context (MIC);	<input type="checkbox"/> MIC1	<input type="checkbox"/> MIC2	<input type="checkbox"/> PreMIC3	<input type="checkbox"/> MIC3	<input checked="" type="checkbox"/> PreMIC4	<input checked="" type="checkbox"/> MIC4	
<input type="checkbox"/> Deorbit Devise Competition (DDC)/Deorbit Mitigation Competition (DMC)		<input checked="" type="checkbox"/> DDC			<input type="checkbox"/> DMC		
<input type="checkbox"/> CanSat Leader Training Program	<input type="checkbox"/> 1 <sup>st</sup>	<input type="checkbox"/> 2 <sup>nd</sup>	<input type="checkbox"/> 3 <sup>rd</sup>	<input type="checkbox"/> 4 <sup>th</sup>	<input type="checkbox"/> 5 <sup>th</sup>	<input type="checkbox"/> 6 <sup>th</sup>	<input type="checkbox"/> 7 <sup>th</sup>

## UNISEC Global Members' Events Participation

<input type="checkbox"/>	UNISEC-Samara Summer School
<input checked="" type="checkbox"/> Other:	PiNa Workshop at Wurzburg University (Germany) in 2015
<input checked="" type="checkbox"/> Other:	Organization of the UNISEC-Global in Rome, Italy, Dec 2017

## Non-UNISEC International Events Participations

- International Astronautical Congress (IAC) 2015 – Jerusalem (Israel)
- 1<sup>st</sup> Symposium on Space Educational Activities (SSSA) 2015 – Padua (Italy)
- International Astronautical Congress (IAC) 2016 – Guadalajara (Mexico)
- IEEE Metrology for Aerospace (MetroAeroSpace) 2016 – Florence (Italy)
- Supporting CubeSat building at Nairobi University in Kenya, aiming at launching from ISS with UN Kibu-Cube project's support. (Sapienza- University of Rome)

## If there were oral presentations given above, write the title with details.

- **PiNa 2015:**
  - “URSA MAIOR: design, manufacturing and testing of a 3U CubeSat”
- **IAC 2015:**
  - “Design, Manufacturing and Testing of the CubeSat URSA MAIOR”
  - “Thermal and mechanical design and test campaign results of a single-piece structure for the URSA MAIOR nanosatellite”
- **1<sup>st</sup> SSSA:**
  - “Education Activity of Sapienza Space Systems and Space Surveillance Laboratory – S5lab”

- **MetroAeroSpace 2016:**
    - - "Testing the VOR (VHF Omnidirectional Range) in the stratosphere: STRATONAV experiment"
  
  - **IAC 2016:**
    - "Importance and Challenges of Hands-On-Experience in Astronautical Education"
    - "An innovative multi-spectral and multi-angle based CubeSat for Earth Observation applications"
    - "Testing VOR performances in the stratosphere: the STRATONAV experiment"
-

# UNISEC-Italy - Activity Report (1)

UNISEC-Italy  
 POC: Fabio Santoni  
 Email: fabio.santoni@uniroma1.it  
 URL: <http://unisonitaly.eu/en/>



## Overview

### 2nd Space Debris Student Opportunities Workshop

#### Date and Venue

Event Date: 18th of December 2015  
 Venue: Sapienza – University of Rome

#### Participation

Total number of participants 30  
 Category of Participants  Students  Engineers/Instructors  Both  
 International Participants  No  Yes  
 If yes, how many international participants were attended the activity? 2

#### Sponsors

S5Lab – Sapienza – University of Rome

#### Participants Group Photo



## Results and Conclusion

Professor Thomas Schildknecht of Bern University's Astronomical Institute, Research Professor Patrick Seitzer of University of Michigan Department of Astronomy and Claudio Portelli from the Italian Space Agency were invited in order to present their on-going activities in the Space Debris field and possibilities for internships and theses. Moreover, the final presentation of the main results of the Concurrent Engineering Activity about the 6U IKUNS CubeSat was made by the involved students.

## UNISEC-Italy - Activity Report (2)

UNISEC-Italy  
 POC: Fabio Santoni  
 Email: fabio.santoni@uniroma1.it  
 URL: <http://unisonitaly.eu/en/>



### Overview

#### Space Systems Laboratory course

- This course has been held during the third year of the Bachelor's Degree in Aerospace Engineering at Sapienza – University of Rome by using the S5Lab facilities since February 2015

### Date and Venue

Venue: S5Lab – Sapienza – University of Rome (Italy)

### Participation

Total number of participants      21  
 Category of Participants       Students       Engineers/Instructors       Both  
 International Participants       No       Yes

If yes, how many international participants were attended the activity?

### Sponsors

Sapienza – University of Rome

### Participants Group Photo



## Results and Conclusion

The laboratory activities are carried on in around fifteen lessons, usually starting at the end of February and finishing at the beginning of June. In the framework of each lesson, the first part is dedicated to the study of the theory needed to develop the typology of project proposed to students. In the second part, each group of students can decide how to face and manage their tasks in order to be able to carry on their project and to fulfill the related mission requirements. The selected projects deals with space topics and themes. Students involved can both put into practice the theoretical

knowledge gathered during their BSc course of Aerospace Engineering and learn new concepts to be able to overcome each difficulty. Besides theoretical basis, the main goal of this course is to provide students with the capability of take on real space projects and be better prepared for their future in the space field. The purpose of this hands-on laboratory is to give the possibility to students to acquire competences on the management of a complex engineering system, deal with technical issues autonomously in a multidisciplinary environment and by giving them the possibility to learn basic competences on requirements and system engineering. Every year different opportunities are offered to students attending the course, depending on the S5Lab facilities availability and funds. Between February and May 2016, the main project consisted in building a CANSAT, a prototype of small satellite payload, simulating a sensor payload mission traveling through a planetary atmosphere and sampling the atmospheric data during descent.

## UNISEC-Italy - Activity Report (3)

UNISEC-Italy  
 POC: Fabio Santoni  
 Email: fabio.santoni@uniroma1.it  
 URL: <http://unisonitaly.eu/en/>



### Overview

**The REXUS/BEXUS Programme: hands-on opportunity for Aerospace Students»**

### Date and Venue

Event Date: 15<sup>th</sup> of July, 2016  
 Venue: Sapienza – University of Rome

### Participation

Total number of participants	35		
Category of Participants	<input type="checkbox"/> Students	<input type="checkbox"/> Engineers/Instructors	<input checked="" type="checkbox"/> Both
International Participants	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes	
If yes, how many international participants were attended the activity?	5		

### Sponsors

S5Lab – Sapienza – University of Rome

### Participants Group Photo



## THE REXUS/BEXUS PROGRAMME: HANDS-ON OPPORTUNITY FOR AEROSPACE STUDENTS

VENERDI' 15 LUGLIO 2016 – ORE 10

SALA DEGLI AFFRESCHI

FACOLTA' DI INGEGNERIA CIVILE E INDUSTRIALE  
 UNIVERSITA' "LA SAPIENZA"  
 VIA EUDOSSIANA 18 - ROMA

*"A unique experience to learn and develop a space project with the help of space expert engineers and professionals."*



*"Developing a real experiment under space standards has meant the best learning experience we could have thought about"*



## Results and Conclusion

Sapienza Space Systems and Space Surveillance Laboratory (S5Lab) organized the "REXUS/BEXUS Programme: hands-on opportunity for aerospace students" on the 15th of July 2016 in the wonderful "Aula degli Affreschi" (Faculty of engineering - San Pietro in Vincoli) at Sapienza - University of Rome. Speakers from the Swedish Space Corporation (SSC), the European Space Agency (ESA) and the Women in Aerospace (WIA) Europe organization presented their experiences in the field of hands-on projects and activities, focusing on current possibilities and ESA educational programmes for all the students interested. Moreover, students from the STRATONAV (STRATOspheric NAVigation) Team, involved in the cycle 09 of the BEXUS programme participated and presented their experiment and experience. This conference gave a very large overview of hands-on opportunities to put into practise the theoretical knowledge gathered during the nominal academic years and studies, and allowed to meet experts in the field to better understand how the internal processes of these typology of projects works.

## UNISEC-Italy - Activity Report (4)

UNISEC-Italy  
 POC: Fabio Santoni  
 Email: fabio.santoni@uniroma1.it  
 URL: <http://unisonitaly.eu/en/>



### Overview

#### 3<sup>rd</sup> Space Debris Student Opportunities Workshop

### Date and Venue

Event Date 16<sup>th</sup> of December, 2016  
 Venue: Sapienza – University of Rome

### Participation

Total number of participants 45  
 Category of Participants  Students  Engineers/Instructors  Both  
 International Participants  No  Yes  
 If yes, how many international participants were attended the activity? 2

### Sponsors

S5Lab / Sapienza – University of Rome / UNISON Italy

### Participants Group Photo



### Results and Conclusion

The "3<sup>rd</sup> Space Debris Student Opportunities Workshop: LEDSAT" was organised by S5Lab and sponsored by UNISON Italy. During the Workshop, the main opportunities for students related to the Space Debris field in Italy and abroad were presented and described in details. The main lectures were given by Giuseppe Bianco (ASI), Director of the Italian Space Agency's Space Geodesy Center located in Matera (Italy), Thomas Schildknecht, vice-director of the Astronomical Institute in Bern (Switzerland) and coordinator of ESA Space Debris optical observations, and Patrick Seitzer from the University of Michigan, coordinator of NASA Space Debris optical observations. Finally, the final presentation of the main results of the Concurrent Engineering Activity about the 1U LEDSAT CubeSat was made by the involved students.

# UNISEC-Japan - International Activity Report-(1)

UNISEC-Japan  
 POC: Mengu Cho  
 Email: cho@ele.kyutech.ac.jp  
 URL: http://unisec.jp/en.html



## UNISEC-Global Participation

- Nano-Satellite Symposium (NanoSat);  
 1<sup>st</sup>    2<sup>nd</sup>    3<sup>rd</sup>    4<sup>th</sup>    5<sup>th</sup>    6<sup>th</sup>    7<sup>th</sup>

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- UNISEC-Global Meeting (UNI-GLO);  
 1<sup>st</sup>    2<sup>nd</sup>    3<sup>rd</sup>    4<sup>th</sup>

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- Mission Idea Context (MIC);  
 MIC1    MIC2    PreMIC3    MIC3    PreMIC4    MIC4

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- Deorbit Devise Competition (DDC)/Deorbit Mitigation Competition (DMC)  
 DDC    DMC

---

- CanSat Leader Training Program  
 1<sup>st</sup>    2<sup>nd</sup>    3<sup>rd</sup>    4<sup>th</sup>    5<sup>th</sup>    6<sup>th</sup>    7<sup>th</sup>

## UNISEC Global Members' Events Participation

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- Other (specify)

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## Non-UNISEC International Events Participations

### Participation in ARLISS (USA)

ARLISS (A Rocket Launch for International Student Satellites) started in 1999 to provide students some opportunity to launch their hand-made satellites or rovers into suborbital space. At ARLISS at the Black Rock, Nevada playa (dry lake bed) 100 miles north of Reno, Nevada, student payloads are carried up to over two miles in amateur high power rockets. These rockets are provided by the members of Aeropac, a northern California rocket club. The satellites using parafoils and rovers try to land on/drive to the marker (goal) on the desert. The Japanese student groups participate in this competition, called "Come Back Competition". This is an annual event and UNISEC has been supporting Japanese university students since 2002.

### Pictures and Photos.



# UNISEC-Japan - International Activity Report-(2)

UNISEC-Japan  
 POC: Mengu Cho  
 Email: cho@ele.kyutech.ac.jp  
 URL: <http://unisec.jp/en.html>



## UNISEC-Global Participation

<input type="checkbox"/> Nano-Satellite Symposium (NanoSat);	<input checked="" type="checkbox"/> 1 <sup>st</sup>	<input checked="" type="checkbox"/> 2 <sup>nd</sup>	<input checked="" type="checkbox"/> 3 <sup>rd</sup>	<input checked="" type="checkbox"/> 4 <sup>th</sup>	<input checked="" type="checkbox"/> 5 <sup>th</sup>	<input checked="" type="checkbox"/> 6 <sup>th</sup>	<input checked="" type="checkbox"/> 7 <sup>th</sup>
<input type="checkbox"/> UNISEC-Global Meeting (UNI-GLO);	<input checked="" type="checkbox"/> 1 <sup>st</sup>	<input checked="" type="checkbox"/> 2 <sup>nd</sup>	<input checked="" type="checkbox"/> 3 <sup>rd</sup>	<input checked="" type="checkbox"/> 4 <sup>th</sup>			
<input type="checkbox"/> Mission Idea Context (MIC);	<input checked="" type="checkbox"/> MIC1	<input checked="" type="checkbox"/> MIC2	<input checked="" type="checkbox"/> PreMIC3	<input checked="" type="checkbox"/> MIC3	<input checked="" type="checkbox"/> PreMIC4	<input checked="" type="checkbox"/> MIC4	
<input type="checkbox"/> Deorbit Devise Competition (DDC)/Deorbit Mitigation Competition (DMC)	<input checked="" type="checkbox"/> DDC				<input type="checkbox"/> DMC		
<input checked="" type="checkbox"/> CanSat Leader Training Program	<input checked="" type="checkbox"/> 1 <sup>st</sup>	<input checked="" type="checkbox"/> 2 <sup>nd</sup>	<input checked="" type="checkbox"/> 3 <sup>rd</sup>	<input checked="" type="checkbox"/> 4 <sup>th</sup>	<input checked="" type="checkbox"/> 5 <sup>th</sup>	<input checked="" type="checkbox"/> 6 <sup>th</sup>	<input checked="" type="checkbox"/> 7 <sup>th</sup>

## UNISEC Global Members' Events Participation

<input checked="" type="checkbox"/> UNISEC-Japan: Can-Sat Leader Training Program (CLTP)
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UNISEC-Japan has organized the CanSat Leader Training Program (CLTP) every year in Japan since 2011, for the purpose of building participant capacity to become a local instructor after going back home. This is a hands-on training at the UNISEC member university in charge under the guidance of a university professor and his teaching assistants. Participants in this program experience a whole cycle of satellite development such as designing, manufacturing, testing, launching and data verification, with relatively cheaper cost. As of 2016, there are 64 participants from 32 countries in the program. We hope that CLTP would be a first step to reduce the existing technological gap in space among countries.

## Pictures

CanSat



CanSat Hands-on Training



Preparation for Paper Rocket Launch



Paper Rocket Making

# UNISEC-Japan - Activity Report (1)

UNISEC-Japan  
 POC: Mengu Cho  
 Email: cho@ele.kyutech.ac.jp  
 URL: <http://unisec.jp/en.html>



## Overview

### **General Meeting & Activity Reports by Member Groups:**

UNISEC-Japan is a membership body, consisting of Japanese universities, university laboratories, professors, students, private companies and other entities (university:50 corporate:17, individual: 277, student:923 as of March 2016). The General Meeting is held once a year to wrap up its year-long activities and adopt next-year plans. The board of directors meeting is preceded by it to finalize discussion themes. After the General Meeting, there are several activity reports by UNISEC's student organization (UNISON), its alumni association (UNISAS) and 7 working groups.

### **Date and Venue**

Announcement Date	Every March
Event Date	July
Venue	University of Tokyo

### **Participation**

Total number of participants	Around 250		
Category of Participants	<input type="checkbox"/> Students	<input type="checkbox"/> Engineers/Instructors	<input checked="" type="checkbox"/> Both
International Participants	<input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes	

If yes, how many international participants were attended the activity?

### **Sponsors**

UNISEC-Japan

### **Participants Group Photo**



### **Results and Conclusion**

The General Meeting provides the UNISEC's various members with an opportunity and a forum to:

1. Exchange their opinions from different perspective and fields,
2. Get to know each other or to renew their acquaintances horizontally and vertically,
3. Learn about different activities from theirs,
4. Deepen their friendships and create a favorable condition for future activities.

## UNISEC-Japan - Activity Report (2)

UNISEC-Japan  
 POC: Mengu Cho  
 Email: cho@ele.kyutech.ac.jp  
 URL: <http://unisec.jp/en.html>



### Overview

#### **Noshiro Space Event:**

Noshiro Space Event is an amateur rocket competition which is held in mid-August every year in Noshiro city, Akita prefecture. This is the biggest event of its kind in Japan and it is attended mainly by students and adults. In this event, for example, students launch “hybrid rockets” which are a new type of rocket launched without the use of explosives. Students also participate in an autonomous robot competition called “Can-Sat” in which a satellite is deployed from the rocket and must return to a specific location. Many students from throughout Japan gather in Noshiro and take part in the Space Event.

UNISEC cohosts the Event with the Noshiro Space Event Council. Several UNISEC member student groups participate every year in the Event, resulting in good scores.

#### **Date and Venue**

Announcement Date	Around April
Event Date	Mid-August
Venue	Noshiro City

#### **Participation**

Total number of participants	Around 350		
Category of Participants	<input type="checkbox"/> Students	<input type="checkbox"/> Engineers/Instructors	<input checked="" type="checkbox"/> Both
International Participants	<input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes	

If yes, how many international participants were attended the activity?

#### **Sponsors**

Joint Sponsorship with the Local Organizer

#### **Participants Group Photo**



Rocket Launches



Participants for Satellite Launches



#### **Results and Conclusion**

Taking into account its mission purpose that Noshiro Space Event is aimed at promoting space education, training the people who will be a part of future space development, and stimulating the community through the exchange of aeronautical technology and engineering skills, UNISEC is in full agreement with the purpose.

## UNISEC-Japan - Activity Report (3)

UNISEC-Japan  
POC: Mengu Cho  
Email: cho@ele.kyutech.ac.jp  
URL: <http://unisec.jp/en.html>



### Overview

#### **Peer Review Educational Space Program for University Students:**

This is a yearly based student program which starts drafting a space mission plan themselves at the beginning of the fiscal year and is evaluated the plan by different university instructors by the end of the fiscal year. Every year, several groups of university students under UNISEC membership participate in the program by presenting their mission plans in the beginning and make their accomplishment reports in the end. Students instructors from different groups make cross-checks on their reports and evaluate them, in terms of feasibility of their planned missions, degrees of accomplishment, project management, etc. Their evaluation is to focus on advice rather than critics. Groups with good grades are entitled to take, free of charge, one of the space engineering lecture courses sponsored by UNISEC-Japan.

The reports and evaluation are on the UNISEC website for the members.

#### **Date and Venue**

Announcement Date	Every March
Event Date	All year round from April to March next year
Venue	At each university laboratory

#### **Participation**

Total number of participants	30~35 Japanese Universities		
Category of Participants	<input type="checkbox"/> Students	<input type="checkbox"/> Engineers/Instructors	<input checked="" type="checkbox"/> Both
International Participants	<input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes	

If yes, how many international participants were attended the activity?

#### **Sponsors**

UNISEC-Japan

#### **Participants Group Photo**

Not Available

#### **Results and Conclusion**

This program intends to

- (1) Let UNISEC member instructors educate the member students of different universities,
- (2) Not allow the participation of students only, but with their instructor(s),
- (3) Learn the students how to clearly state a targeted mission, indicate concrete judgement for a successful mission and how effectively execute it.

# UNISEC-Japan - Activity Report (4)

UNISEC-Japan  
 POC: Mengu Cho  
 Email: cho@ele.kyutech.ac.jp  
 URL: <http://unisec.jp/en.html>



## Overview

### UNISEC Workshop:

The UNISEC Workshop is an annual gathering for its member student groups, their professors, UNISON (UNISEC student organization), and other researchers. At the Workshop, they present their yearly activities in the field of nano-satellite, small rockets and related engineering/technological matters. In addition, there are a panel discussion, group discussion, proposals by individual university labs or by cross-sectoral groups. The Workshop is closed by giving an award to some of the excellent groups, due to the ballots by the participants. The workshop venue is held at a different member university every year.

### Date and Venue

Announcement Date	Around July
Event Date	Mid-December
Venue	UNISEC member university

### Participation

Total number of participants      About 300 students, instructors and so on.  
 Category of Participants       Students       Engineers/Instructors       Both  
 International Participants       No       Yes

If yes, how many international participants were attended the activity?

### Sponsors

UNISEC-Japan

### Participants Group Photo

Workshop Plenary Session



Group Discussion



### Results and Conclusion

The Workshop aims to:

- (1) Deepen and/or widen students' understanding about their specialized fields or non-specialized ones by sharing various information one another.
- (2) Contribute to the development of problem-solving ability through discussion and proposals.
- (3) Learn how to effectively organize a group and to recognize individual roles in such group. This will contribute to their future career after graduation.
- (4) Cultivate friendship and mutual trust for further communications.



# UNISEC-Lithuania - International Activity Report

UNISEC-local: UNISEC-Lithuania  
 POC: Vidmantas Tomkus  
 Email: vto@space-lt.eu  
 URL: <http://space-lt.eu/en/lka-asociation/unisec-2/>



## UNISEC-Global Participation

<input type="checkbox"/> Nano-Satellite Symposium (NanoSat);	<input type="checkbox"/> 1 <sup>st</sup>	<input checked="" type="checkbox"/> 2 <sup>nd</sup>	<input type="checkbox"/> 3 <sup>rd</sup>	<input checked="" type="checkbox"/> 4 <sup>th</sup>	<input checked="" type="checkbox"/> 5 <sup>th</sup>	<input type="checkbox"/> 6 <sup>th</sup>	<input type="checkbox"/> 7 <sup>th</sup>
<input type="checkbox"/> UNISEC-Global Meeting (UNI-GLO);	<input checked="" type="checkbox"/> 1 <sup>st</sup>	<input checked="" type="checkbox"/> 2 <sup>nd</sup>		<input type="checkbox"/> 3 <sup>rd</sup>		<input type="checkbox"/> 4 <sup>th</sup>	
<input checked="" type="checkbox"/> Mission Idea Context (MIC);	<input checked="" type="checkbox"/> MIC1	<input checked="" type="checkbox"/> MIC2	<input type="checkbox"/> PreMIC3	<input checked="" type="checkbox"/> MIC3	<input type="checkbox"/> PreMIC4	<input type="checkbox"/> MIC4	
<input type="checkbox"/> Deorbit Devise Competition (DDC)/Deorbit Mitigation Competition (DMC)	<input type="checkbox"/> DDC		<input type="checkbox"/> DMC				
<input type="checkbox"/> CanSat Leader Training Program	<input type="checkbox"/> 1 <sup>st</sup>	<input type="checkbox"/> 2 <sup>nd</sup>	<input checked="" type="checkbox"/> 3 <sup>rd</sup>	<input type="checkbox"/> 4 <sup>th</sup>	<input type="checkbox"/> 5 <sup>th</sup>	<input type="checkbox"/> 6 <sup>th</sup>	<input type="checkbox"/> 7 <sup>th</sup>

## UNISEC Global Members' Events Participation

<input type="checkbox"/> UNISEC-Samara Summer School
Other (specify)

## Non-UNISEC International Events Participations

**If there were oral presentations given above, write the their title with details.**

Domantas Brucas et. all (Vilnius Gediminas Technical University), "Lithuanian Nano-Satellite Project", 2-d Nanosatellite Symposium, March 13, 2012

Algis Karpavicius et al. (Kaunas University of Technology), "Piezo-active Suspension system for Space Interferometry and Broadband Communications", MIC 3, Nov 17-20, 2014

# UNISEC-Mexico - Activity Report (1)

UNISEC-Mexico  
POC: Barbara Bermudez Reyes  
Email: Barbara.bermudezry@uanl.edu.mx  
URL: www.unisec.mx



## Overview

The first cansat course, was a pilot course to publicize the cansat system at the Autonomous University of Nuevo León and at a distance, through videoconference with the Universidad Autónoma de Chihuahua, both institutions belonging to UNISEC-Mexico

- Cansat introduction
- Cansat mission
- System engineering introduction
- Cansat manufacturing
- Deployable structures
- Electric System
- Communication System
- Launch

## Date and Venue

Announcement Date 04/15/2015  
Event Date: 29/06/2015  
Venue: Centro de Investigación e Innovación en Ingeniería Aeronáutica

## Participation

Total number of participants 28 (13 face-to-face mode and 15 videoconference)  
Category of Participants  Students  Engineers/Instructors  Both  
International Participants  No  Yes  
If yes, how many international participants were attended the activity?

## Sponsors

Autonomous University of Nuevo Leon (Universidad Autonoma de Nuevo Leon)  
Space Science and Technology Network

## Participants Group Photo



## Results and Conclusion

During the Cansat Training Course, seven cansat were obtained, and it was verified that the course could be imparted through video conferencing to the Autonomous University of Chihuahua. It should be noted that the best works of Nuevo Leon and Chihuahua participated in the First National Competition of Cansat.

## UNISEC-Mexico - Activity Report (2)

UNISEC-Mexico  
 POC: Barbara Bermudez Reyes  
 Email: Barbara.bermudezry@uanl.edu.mx  
 URL: www.unisec.mx



### Overview

Second Cansat Training Course:

Topics include Cansat introduction, Cansat mission, System engineering introduction, Cansat manufacturing, Deployable structures, Electric System, Communication System and Launch.

### Date and Venue

Announcement Date 03/15/2016  
 Event Date: 22/06/2016  
 Venue: Facultad de Ciencias Fisicomatemáticas

### Participation

Total number of participants 30 ( )  
 Category of Participants  Students  Engineers/Instructors  Both  
 International Participants  No  Yes  
 If yes, how many international participants were attended the activity?  
 Only one, M. C. Gorki Ernesto Encarnación-Morrobel

### Sponsors

Autonomous University of Nuevo Leon (Universidad Autonoma de Nuevo Leon)  
 Space Science and Technology Network

### Participants Group Photo



### Results and Conclusion

The second Cansat course was face-to-face and video conference with several institutions from other states (Puebla, Queretaro, Baja California, Chihuahua and Tamaulipas), belonging to UNISEC-Mexico. Each institution made the launches of cansat that were manufactured. In addition, this course was used for students from the various institutions to start preparing the cansat for the second national cansat contest.

## UNISEC-Mexico - Activity Report (3)

UNISEC-Mexico  
 POC: Barbara Bermudez Reyes  
 Email: Barbara.bermudezry@uanl.edu.mx  
 URL: www.unisec.mx



### Overview

#### Rockets Course

- Rocket introduction
- Rocket structure
- Explosives
- Rocket manufacturing
- Launch

### Date and Venue

Announcement Date: 11/20/2015  
 Event Date: 01/22/2016  
 Venue: Centro de Investigación e Innovación en Ingeniería Aeronáutica

### Participation

Total number of participants: 20  
 Category of Participants:  Students  Engineers/Instructors  Both  
 International Participants:  No  Yes  
 If yes, how many international participants were attended the activity?

### Sponsors

Autonomous University of Nuevo Leon (Universidad Autonoma de Nuevo Leon)  
 Autonomous University of Baja California (Universidad Autonoma de Baja California)  
 Research and Technology Transfer Institute (I2T2)

### Participants Group Photo



### Results and Conclusion

The Rocket course was planned to introduce students of Aerospace Engineering and Aeronautical Engineering to Rocket Science and Technology. This was accomplished in two weeks and the course was completed with the launching of five fiberglass rockets that the students designed and manufactured.

## UNISEC-Mexico - Activity Report (4)

UNISEC-Mexico  
 POC: Barbara Bermudez Reyes  
 Email: Barbara.bermudezry@uanl.edu.mx  
 URL: www.unisec.mx



### Overview

In the Satellites Educational Cansat 2015 contest was evaluated according to a Single category of TELEMETRY, which consists of sending data in time Real to an earth station. The type of mission to be developed is open, as per Example, to test an equation, to send meteorological data, to perform an experimentation Scientific, etc. In this contest, success will be assessed in its objectives, originality, design and the scientific relevance of the measurements they perform.

### Date and Venue

Announcement Date 03/15/2015  
 Event Date: 10/05/2015  
 Venue: Autonomous University of Baja California (Universidad Autonoma de Baja California)

### Participation

Total number of participants 18 teams  
 Category of Participants  Students  Engineers/Instructors  Both  
 International Participants  No  Yes  
 If yes, how many international participants were attended the activity?

### Sponsors

Autonomous University of Baja California (Universidad Autonoma de Baja California),  
 Space Science and Technology Network (REDITE), UNISEC Mexico

### Participants Group Photo



### Results and Conclusion

CanSat educational pico-satellites are important in higher education institutions, both in developed countries and in developing countries. These simulators provide the basic knowledge and principles of design, development and operation essential to a space mission. In addition, they can be designed and built using commercial electronic components. The pico-satellite training programs offered in our country have been able to establish new patterns of interest and motivation in undergraduate students to continue in the postgraduate studies or to go to the labor sectors with this specialty. The first national contest of pico-satellites CanSat gave us the opportunity to exchange knowledge and experience among participating institutions; This leads us to generate national and international collaborations in order to undertake larger projects.

## UNISEC-Mexico - Activity Report (5)

UNISEC-Mexico  
POC: Barbara Bermudez Reyes  
Email: Barbara.bermudezry@uanl.edu.mx  
URL: www.unisec.mx



### Overview

Generate creative and innovative ideas through the use of space technology in the solution of a mission for a CANSAT educational pico-satellite. In students in teamwork, theoretical and practical, through the use of science and aerospace technology. For this competition was considered two categories:

TELEMETRY Category, the CanSat shall transmit the following Data

1. Cansat Internal and External Temperature
2. Pressure
3. Relative Humidity.
4. Altitude
5. Length.
6. Latitude
7. Battery Level.
8. Vibration
9. Acceleration
10. Photography / Video.

COMEBACK Category, the CanSat must comply with the following:

1. All of the above in the telemetry category
2. Return to the starting point using a Rover vehicle.
3. The complete system (cansat and vehicle) must have a weight Maximum of 1 kg

### Date and Venue

Announcement Date 03/015/2015  
Event Date: 10/08/2015  
Venue: Autonomous University of Nuevo León (Universidad Autonoma de Nuevo Leon)

### Participation

Total number of participants 9 teams  
Category of Participants  Students  Engineers/Instructors  Both  
International Participants  No  Yes  
If yes, how many international participants were attended the activity?

### Sponsors

Autonomous University of Nuevo Leon (Universidad Autonoma de Nuevo Leon)  
Space Science and Technology Network (REDITE)  
UNISEC Mexico

## Participants Group Photo



## Results and Conclusion

The Cansats have an important role in higher education institutions in developing countries. The Cantabrian educational peaks are playing a very important role in higher education institutions in developing countries. It is obvious that building small satellites is much cheaper than making large devices for science or communications; However, the cost of these small satellites still remains very high for public universities in Mexico



# UNISEC Samara - Activity Report

UNISEC-Samara  
 POC:Igor Belokonov  
 Email: ibelokonov@mail.ru  
 URL: <http://unisecsamara.ssau.ru/>



## Overview

UNISEC Samara is based on Samara National Research University (Space Research Department) and join teachers, scientists and students of three Universities. UNISEC Samara has designed two Cubsat projects: Samsat-218D (launched in April, 2016 from new Russian cosmodrome Vostochny) and SamSat-QB50 (which are fulfill ready for launch in the frame of QB50 project). Most of the on-board systems for these projects has been developed and produced by UNISEC Samara. Also UNISEC Samara are working on project of nanosatellite with jet propulsion system for realization of formation flight missions. UNISEC Samara has labs and facilities for complete testing of nanosatellites and their subsystems. UNISEC Samara hosts Russian nanosatellite symposium RusNanoSat and annually conducts Summer space school “Future space technologies and experiments in space” with the participation of students from different countries of the world including from developing countries. UNISEC Samara open for international cooperation in space projects.

## Date and Venue

XII Summer space school (June 20 – July 2, 2016)  
 XIII Summer Space School (June 19 – July 1, 2017)  
 Announcement [http://volgaspacespace.ru/school\\_cms/](http://volgaspacespace.ru/school_cms/)  
 Symposium RusNanoSat2017 (June 28 – June 30, 2017)  
 Announcement <http://www.volgaspacespace.ru/RusNanoSat-2017/>  
 Venue of events: Samara National Research University

## Participation

Total number of XII Summer space school participants 42  
 Category of Participants  Students  Engineers/Instructors  Both  
 International Participants  No  Yes  
 If yes, how many international participants were attended the activity? 34

## Sponsors

Samara National Research University  
 Supported by Administrative Committee for Space Universities of IAF

## Participants Group Photo



## Results and Conclusion

42 students were successfully provided hands-on training of CubeSat.

## UNISEC-Turkey - International Activity Report

UNISEC-TURKEY  
POC: ALIM RUSTEM ASLAN  
Email: aslanr@itu.edu.tr  
URL: <http://usttl.itu.edu.tr/en/>



### UNISEC-Global Participation

- |  |
|--|
| <input type="checkbox"/> Nano-Satellite Symposium (NanoSat);   |
| ■ 1 <sup>st</sup> ■ 2 <sup>nd</sup> ■ 3 <sup>rd</sup> ■ 4 <sup>th</sup> ■ 5 <sup>th</sup> ■ 6 <sup>th</sup> ■ 7 <sup>th</sup>  |
| <input type="checkbox"/> UNISEC-Global Meeting (UNI-GLO);  |
| ■ 1 <sup>st</sup> ■ 2 <sup>nd</sup> ■ 3 <sup>rd</sup> ■ 4 <sup>th</sup>  |
| <input type="checkbox"/> Mission Idea Context (MIC);   |
| ■ MIC1 ■ MIC2 <input type="checkbox"/> PreMIC3 ■ MIC3 <input type="checkbox"/> PreMIC4 ■ MIC4  |
| <input type="checkbox"/> Deorbit Devise Competition (DDC)/Deorbit Mitigation Competition (DMC)   |
| ■ DDC <input type="checkbox"/> DMC   |
| <input type="checkbox"/> CanSat Leader Training Program  |
| ■ 1 <sup>st</sup> ■ 2 <sup>nd</sup> ■ 3 <sup>rd</sup> <input type="checkbox"/> 4 <sup>th</sup> <input type="checkbox"/> 5 <sup>th</sup> ■ 6 <sup>th</sup> <input type="checkbox"/> 7 <sup>th</sup> |

### UNISEC Global Members' Event Participation

- |  |
|--|
| <input type="checkbox"/> UNISEC-Samara Summer School |
|--|

Other (specify)

CLTP-TURKEY-1, June 2014  
CLTP-TURKEY-2, August 2015  
10 local UNISEC-TR Meetings

### Non-UNISEC International Participations

- IAC, RAST and ECS among others

**If there were oral presentations given above, write their title with details.**

-Many presentations