UNITED NATIONS
Office for Outer Space Affairs

THE UNIVERSITY OF TOKYO

UN/Japan Nano-Satellite Symposium

October 10-13, 2012, Nagoya, Japan

Paradigm shift —
Changing Architecture, Technologies and Player

Programme

Day 1 October 10, WINC Aichi (Aichi Industry & Labor Center)

Opening Session
2nd Mission Idea Contest
- Oral Presenstation
- Poster Presenstation
- Mission Idea Award Ceremony

Poster Session

Day 2 October 11, WINC Aichi (Aichi Industry & Labor Center)

Special Lecture:
- Pushing the capabilities of small satellites
- The Art and Science of Space Systems Engineering

Panel Discussion 1: How to keep good quality without increasing cost and time for development
Session 1 : Satellite Architecture and Technologies
Poster Session: International Space Education using Nano-Satellite
Session 2 : Innovation in Satellite Development Process
Panel Discussion 2: International Space Education using Nano-Satellite

Day 3 October 12, Port Messe Nagoya Communication Center-Meeting Hall

Session 3 : Utilization/Applications of Micro- and Nano-Satellites
Panel Discussion 3: Small Satellites and Space Debris
Session 4 : Standardization and Regulatory Issues
Session 5 : Strategies for Capacity Building

Day 4 October 13, Port Messe Nagoya Communication Center-Meeting Hall

UN Space Education Curriculum Session
Closing Session

Nano-Satellite Symposium

www.nanosat.jp

Special Lecture

Special Lecture 1 9:00 - 9:20 11th Oct.

Theme: **Pushing the capabilities of small satellites**

"Small satellites have developed rapidly during the last decade and indeed have become quite fashionable with many organisations. Surrey has continued to research into the latest small satellite techniques and applications to Earth observation and remote sensing - as well as satellite timing & navigation and planetary exploration."

Lecturer: Prof. Sir Martin Sweeting,

Executive Chairman - Surrey Satellite Technology Ltd (SSTL) Director - Surrey Space Centre (SSC) Distinguished Professor, University of Surrey

Profile: Sir Martin pioneered rapid-response, low-cost and highly-capable small satellites utilising modern terrestrial COTS devices to 'change the economics of space'. In 1985 he formed a spin-off University company(SSTL) which has now designed, built, launched and operated in orbit 39 nano, micro, and mini-satellites - including the international Disaster Monitoring Constellation (DMC) and GIOVE-A, the first Galileo navigation satellite for ESA. SSTL has grown to 500 staff with annual revenues of £100M with total export sales in excess of £600M and is currently manufacturing the 22 navigation payloads for the Galileo Full Operational Constellation, a new constellation of 3 high-resolution (1-metre) Earth Observation minisatellites and a low-cost medium-resolution SAR minisatellite (NovaSAR) supported by the UK government. As Director of the Surrey Space Centre, Sir Martin leads a team of 90 faculty and doctoral researchers investigating advanced small satellite concepts and techniques, acting as the research laboratory for SSTL - real academic-commercial synergy. Sir Martin has been appointed OBE and knighted by HM The Queen, elected a Fellow of the Royal Society and a Fellow of the Royal Academy of Engineering. In 2012, he was awarded the von Karman Wings Award by CalTech/JPL (USA) for the pioneering of small satellites. He is a member of the UK Space Leadership Council.

Special Lecture 2 9:20 - 9:40 11th Oct.

Theme: **The Art and Science of Space Systems Engineering**

"This presentation describes the art and science of space systems engineering which focuses on technical leadership (the art) and systems management (the science). System engineer capabilities are described as well as behavioral characteristics of expert practicing space systems engineers. Some of the key realities in the practice of systems engineering are explored along with the systems engineering framework and associated processes."

Lecturer: Dr. Wiley J. Larson

Distinguished Service Professor - School of Systems and Enterprises - Stevens Institute of Technology

Profile: Wiley J. Larson experienced leader in space-related development, operations, education and training. Served 20 years in the United States Air Force as a Global Positioning Spacecraft (GPS) spacecraft engineer, spacecraft launch controller, flight test engineer, spacecraft program manager and associate professor of Astronautics. Currently on the faculty of Stevens Institute of Technology as Assistant Dean of the School of Systems & Enterprises, and Program Director of Space Systems Engineering. Contributing to International space efforts by creating an integrated set of 20 published books on space system engineering, detailing “how to” design, develop, launch and operate space systems.
Continues to work with NASA, European Space Agency, French Space Agency, German Space Agency and over 10 national and international corporations as an educator, mentor, and consultant. Certified as a major program manager within the Department of Defense. Active member of the International Academy of Astronautics (IAA).

Panel Discussion

Panel Discussion1: 9:40 - 10:40 11th Oct.

Theme: **"How to keep good quality without increasing cost and time for development"**

Cost and time for satellite development are one of major concerns for every satellite developer. The strength of small/micro/nano-satellites come from the tremendous reduction of cost and development time from the conventional mid or large sized satellites. However, if the performance and reliability of such satellites are below the level required for practical applications or business, no customers will purchase them though such satellites are still acceptable for educational purposes. So if we consider practical-application-level products of satellite, the key issue will be how to keep good quality without increasing cost and time for development. The satellite developers who have successful on-orbit and business record probably have their own strategies and technologies to solve this problem.
In the panel discussion, each paneler will first show their ideas and thought about this problem from their own experiences. The related areas will include satellite architecture, component technologies, reliability concept, project management, vendor control, supply chain network, and so on. Then we will discuss, including audience, the way to achieve it from various points of view.

Coordinator: Prof. Shinichi Nakasuka, the University of Tokyo

Panelist: (in alphabetical order)

Mr. Freddy Pranajaya, Toronto University
Prof. Seiko Shirasaka, Keio University
Prof. Herman Steyn, Stellenbosch University
Prof. Sir Martin Sweeting, Surrey Space Center

Panel Discussion 2: 17:45 - 18:30 11th Oct.

Theme: **"International Space Education using Nano-Satellites"**

There is increasing interest in building nano-satellites in universities worldwide. From an educational viewpoint, nano-satellites are regarded as a good educational tool since they enable students to be able to gain comprehensive experience from design, fabrication, test, launch, operation to data analysis. In Japan, the University Space Engineering Consortium (UNISEC) has supported such practical space projects at university level since 2002, and now there is emerging movement to establish university associations like UNISEC in each country. In universities, resources are limited. Establishing and maintaining an organization takes energy. For realizing effective, sustainable space education using nano-satellite with limited resources, it would be important to consider what should be focused and what should be avoided.

In this panel discussion, each panelist would share their experiences on space education using nano-satellite, and then pros and cons of forming university association would be discussed.

Coordinator: Rei Kawashima, University Space Engineering Consortium (UNISEC)

Panelist: (in alphabetical order)

Mr. Arno Barnard, Stellenbosch University
Prof. Mohamed Khalil Ibrahim, Cairo University
Prof. Yasuyuki Miyazaki, Nihon University
Prof. Jordi Puig-Suari, California Polytechnic State University
Prof. Sir Martin Sweeting, Surrey Space Center

Panel Discussion 3: 11:25 - 12:15 12th Oct.

Theme: **"Small Satellites and Space Debris"**

The accumulation of space debris in earth orbit has reached a level that may pose a danger to sustained space activities in future. Small satellites are often said to become debris soon after their orbital operation, since generally they are short lived, without orbit maneuver capability, and launched in clusters. What is the actual relevance of small satellites with space debris? Space debris mitigation guidelines established in national and international levels are effective in reducing creation of space debris and many small satellites do observe these technical guidelines utilizing whatever available within their limited resource of mass and power.

The panel will first discuss the present environment situation and international practices to cope with space debris. Then policy and practice of small satellite designer/operator in response to debris mitigation will be then presented. Finally, if possible, effectiveness and lessons learned will be discussed among panelists and audience.

Coordinator: Tetsuo Yasaka, Prof. Emeritus, Kyushu University

Panelist: (in alphabetical order)

Dr. Yasushi Horikawa, Chair, the United Nations Committee on the Peaceful Uses of Outer Space (COPUOS)
Dr. Toshinori Kuwahara, Tohoku University
Prof. Rainer Sandau, International Academy of Astronautics (IAA)
Prof. Herman Styen, Stellenbosch University
Prof. Sir Martin Sweeting, Surrey Space Center

10th, October

UN/Japan Nano-Satellite Symposium Opening Session (9:30 - 12:00 @2-3F WINC AICHI)

9:30 - 10:30	Shinichi Nakasuka, University of Tokyo Yasushi Horikawa, The United Nations Committee on the Peaceful Uses of Outer Space (UNCOPUOS) Satoru Otake, Ministry of Education, Culture, Sports, Science and Technology (MEXT) Werner Balogh, United Nations Office for Outer Space Affairs			
11:10 - 11:30 Break				
2nd Mission Idea Contest Oral Presenstation (11:30 - 16:50 @2-3F WINC AICHI)				
11:30 - 12:00	Mission Idea Contest Opening Remarks			
◆Category 2 Mission Idea and Business Model				
12:00-12:20	Thermal Infrared Remote Sensing Using Nano-Satellites for Multiple Environmental Applications	Edgardo Macatulad	University of the Philippines	Philippines
12:20-12:40	Underground and surface water detection and monitoring using a microsatellite.	Morné Roman	Cape Peninsula University of Technology	South Africa
12:40-13:00	Global Tracking System	Ragy Ismail and Mohamed Alrefaie	Institute of Aviation Engineering and Technology and Al-Azhar University	Egypt
13:00 - 14:30 Lunch				
◆Category 1 Mission Idea and Satellite Design				
14:30-14:50	Nano-satellite constellation collecting global pre-earthquake signals for space-borne early earthquake detection	Charlie Soon and Vu Bui	Nanyang Technological University	Singapore
14:50-15:10	AlbertaSat-1: Greenhouse Gas Monitoring for Industrial and Environmental Improvement	Jordan Backs	University of Alberta	Canada
15:10-15:30	ADR Mission with small satellite	Marcello Valdatta、Niccolò Bellini and Davide Rastelli	University of Bologna - Second Faculty of Engineering - Space Robotic Laboratory	Italy
15:30-15:50	SOLARA/SARA: Solar Observing Low-frequency Array for Radio Astronomy/Separated Antennas Reconfigurable Array	Mary Knapp	Massachusetts Institute of Technology	USA
15:50-16:10	Project of Micro-Satellite Constellation for Earthquake Precursor Study	Masashi Kamogawa, Kohei Tanaka and Kiichiro Deluca	Tokyo Gakugei University and Keio University	Japan
16:10-16:30	The OuterNet: A novel satellite communication relay constellation	Mike-Alec Kearney and Willem Jordaan	University of Stellenbosch	South Africa
16:30-16:50	SWIMS - Short Wave Infrared Maritime Surveillance	Nil Angli	Surrey Satellite Technology Ltd	UK
Mission Idea Contest Poster Presenstation (16:50 - 18:00 @8F WINC AICHI)				
16:50-18:00	IDEA: In-situ Debris Environmental Awareness	Akira Doi, Hideaki Hinagawa and Hiroaki Hamada	Space Systems Dynamics Laboratory, Kyushu	Japan
	Commercializing Weather Prediction	Bhagyashri Telsang	Manipal Institute of Technology	India
	SofiaUniversitySAT (Small Communication Satellite Mission for Enhancement of Antarctic Investigations)	Kaloyan Zlatkov	Sofia University "St. Kliment Ohridski"	Bulgaria
	Satellite real time monitoring of water flood and quality in Tunisia	Kamel Besbes	University of Monastir	Tunisia
	Integrated Rescue Service Satellite (IRS-Sat)	Mohamed Mahmoud Ibrahim and Batsuren Amgalanbat	Kyushu Institute of Technology	Japan
	Laser-Assisted Rain Control Constellation	Ravit Sachasiri, Pirada Techavijit and Nicha Pittayapongsakorn	Geo-Informatics and Space Technology Development Agency	Thailand
	Droplet Stream Orbital Debris Remediation	Thomas Joslyn and David Besson	United States Air Force Academy	USA
	LEON, a leap forward for a cleaner, safer, and more sustainable space	Pauline Faure	Kyushu Institute of Technology	Japan
Mission Idea Award Ceremony (18:00 - 18:30 @2-3F WINC AICHI)				
18:00-18:30	MIC Award Ceremony			

11th, October

Special Lecture (9:00 - 9:40 @2-3F WINC AICHI)

9:00 - 9:20	Special Lecture1: Pushing the capabilities of small satellites Prof. Sir Martin Sweeting, Executive Chairman - Surrey Satellite Technology Ltd (SSTL) Director - Surrey Space Centre (SSC) Distinguished Professor, University of Surrey)			
9:20 - 9:40	Special Lecture2: The Art and Science of Space Systems Engineering Dr. Wiley J. Larson, Distinguished Service Professor, School of Systems and Enterprises, Stevens Institute of Technology			

Panel Discussion 1 (9:40 - 10:40 @2-3F WINC AICHI)

9:40 - 10:40	Panel Discussion1: "How to keep good quality without increasing cost and time for development." Coordinator: Prof. Shinichi Nakasuka, the University of Tokyo Panelist (in alphabetical order): Mr. Freddy Pranajaya, Toronto University, Prof. Seiko Shirasaka, Keio University, Prof. Herman Steyn, Stellenbosch University, Prof. Sir Martin Sweeting, Surrey Space Center			

10:40 - 11:00 Coffee Break

Session 1 : Satellite Architecture and Technologies (11:00 - 13:15 @2-3F WINC AICHI) Chair: Shinichi Kimura, Herman Steyn

◆ New Architecture

11:00 - 11:15	Software Development System for On-board Computers of Small Satellites	Sotaro Kobayashi	Tokyo University of Science	Japan
11:15 - 11:30	OpenCube-α: A Plug&Play Nanosatellite Demonstrator	Merlin Barschke	The OpenCube Initiative	Germany
11:30 -11:45	Efficient Software Verification Process along with Newly Designed Software Architecture	Shusaku Yamaura	Wakayama University	Japan
11:45 - 12:00	Innovative look-up table operating system and applications in the sounding rocket payload	Shyh-Biau Jiang	National Central University (Taiwan)	Taiwan

◆ Element Technologies & Mission

12:00 - 12:15	HiMARC – High-speed, Multispectral, Adaptive-Resolution CubeSat Imaging Constellation	Ved Chirayath	Stanford University	USA
12:15 - 12:30	Development of Piezo Reaction Equipment for Cubesat Type Satellites	Domantas Brucas	Space Science and Technology Institute	Lithuania
12:30 - 12:45	The QB50 Project: A network of 50 CubeSats	Julien Hennequin	ISIS	Netherlands
12:45 - 13:00	Advanced Ionospheric Probe onboard the FORMOSAT-5 Satellite	Chi-Kuang Chao	National Central University	Taiwan
13:00 - 13:15	Development of a precise attitude determination and control system for the 35 kg astrometry satellite “Nano-JASMINE”	Satoshi Ikari	University of Tokyo	Japan

13:15 - 14:45 Lunch

Poster Session (14:45 - 15:45 @8F WINC AICHI)

14:45 - 15:45	Poster Session

Session 2 : Innovation in Satellite Development Process (15:45 - 17:45 @2-3F WINC AICHI) Chair: Seiko Shirasaka, Alim Rüstem Aslan

◆ Process Design and Analysis

15:45 - 16:00	Software Model for Estimating Nano-Satellite Projects Cost, Schedule and Reliability Based on DSM Technique and Monte	Mohamed Ibrahim	Kyushu Institute of Technology	Japan
16:00 - 16:15	An Integrated System-Operations Approach to the Optimal Design of Small-Scale Satellites	Eirini Komninou	University of Strathclyde	Scotland
16:15 - 16:30	Design Automation of Passive Thermal Control for Cube Sats using Age-Layered Population Structures (ALPS)	Emanuel Escobar	Chilean Air Force	Chile
16:30 - 16:45	Structural reliability for Nano-satellites	Aneesh Bhardwaj	Manipal Institute of Technology	INDIA
16:45 - 17:00	Strategic Satellite System Assurance using Assurance Case	Kohei TANAKA	Keio University	Japan
17:00 - 17:15	CubeSat: An Example of Constraint Driven Innovation	Jordi Puig-Suari	California Polytechnic State University	U.S.A

◆ Space Environment & Ground Test

17:15 - 17:30	On-Orbit Thermal Analysis of High Voltage Technology Demonstration Satellite, HORYU-2	Yuki Seri	Kyushu Institute of Technology	Japan

Panel Discussion 2 (17:30 - 18:30 @2-3F WINC AICHI)

17:30- 18:30	Panel Discussion2: "Internationl Space Education using Nano-Satellite" Coordinator: Rei Kawashima, University Space Engineering Consortium (UNISEC) Panelist (in alphabetical order) : Mr. Arno Barnard, Stellenbosch University, Prof. Mohamed Khalil Ibrahim, Cairo University, Prof. Yasuyuki Miyazaki, Nihon University, Prof. Jordi Puig-Suari, California Polytechnic State University, Prof. Sir Martin Sweeting, Surrey Space Center

12th, October

Session 3 : Utilization/Applications of Micro- and Nano-Satellites (9:20 - 11:05 @3F Port Messe Nagoya) Chair: Hiroaki Akiyama, Rainer Sandau

◆ General Applications

9:20 - 9:35	A Cubesat Network for Aerosol Monitoring	Sayandeep Khan	University of Bonn	Germany
9:35 - 9:50	Development Status of microsatellite RISESAT	Toshinori Kuwahara	Tohoku University	Japan
9:50 - 10:05	Mission Creation using demonstrate satellite hodoyoshi 3&4	T.B.D	University of Tokyo	Japan

◆ Disaster Environmentatl monitoring

10:05 - 10:20	Smart and Cost effective applications of Micro/Nano Satellites in the Developing Countries	Muhammad Khan	Babu Banarasi Das National Institute of Technology and Management,Lucknow	India
10:20 - 10:35	Early Warning System for Floods in Namibia Paper for UN/Japan Nano-Satellite Symposium	Samora Ndakukamo	University of Tokyo	Japan
10:35 - 10:50	Research and Application about the Rapid Fusion of Images from Chinese Micro-Satellites	Xiaorong Xue	Anyang Normal University	China
10:50 - 11:05	HUMSAT/DEMO – The first CubeSat for the HUMSAT constellation	Esau Vicente Vivas	UNAM	Mexico

11:05 - 11:25 Coffee Break

Panel Discussion3 (11:25 - 12:15 @3F Port Messe Nagoya)

11:25- 12:15	Panel Discussion3: "Space Debris" Coordinator: Tetsuo Yasaka, Prof. Emeritus, Kyushu University Panelist (in alphabetical order): Dr. Yasushi Horikawa, Chair, the United Nations Committee on the Peaceful Uses of Outer Space (COPUOS), Dr. Toshinori Kuwahara, Tohoku University, Prof. Rainer Sandau, International Academy of Astronautics (IAA), Prof. Herman Styen, Stellenbosch University, Prof. Sir Martin Sweeting, Surrey Space Center

12:15 - 13:30 Lunch

Session 4 : Standardization and Regulatory Issues (13:30 - 15:30 @3F Port Messe Nagoya) Chair: Mengu Cho, Jordi Puigu-Swari

13:30 - 13:45	Radio Frequency Spectra and Satellites: Technical, Economic, & Political Implications of Regulations Regarding Access and Use	Maria Alonsoperez	Space Generation Advisory Council	Uruguay
13:45 - 14:00	Electrical Reliability Improvement For University Built Nano-Satellites	Siddharth Mayya	Manipal Institute Of Technology	India
14:00 - 14:15	A Cubesat Network for Aerosol Monitoring	Karin Remeikis	SpaceBenefit (TBD)	Germany
14:15 - 14:30	Status of Micro/Nano satellite Environmental Tests Standardization Project: Test Campaign and Standard Draft	MENGU CHO	Kyushu Institute of Technology	Japan
14:30 - 14:45	Study of Micro/Nanosatellite operation model for building operation network	Naomi Kurahara	University of Tokyo	Japan
14:45 - 15:10	ITU RADIO REGULATORY FRAMEWORK FOR SMALL SATELLITE DESIGN AND OPERATION	Attila Matas	ITU	Switzerland
15:10 - 15:30	The Small Satellite Dilemma	David Finkleman	Center for Space Standards and Innovation	U.S.A

15:30 - 15:50 Coffee Break

Session 5 : Strategies for Capacity Building (15:50 - 17:50 @3F Port Messe Nagoya) Chair: Werner Balogh, Yasuyuki Miyazaki

15:50 - 16:05	Space industry workforce enhancement: a continuous capacity building scheme based on bilateral supports from the Space Krenovation Park and the government of Thailand	Nicha Pittayapongsakorn	GISTDA	Thailand
16:05 - 16:20	ASEAN cooperation for the development of Earth Observation Satellite	Pirada Techavijit	Geo-Informatics and Space Technology Development Agency (GISTDA)	Thailand
16:20 -16:35	UNIFORM Project	Hiroaki Akiyama	Wakayama University	Japan
16:35 - 16:50	Lessons Learned from a Canadian University Nano-satellite Design Competition	Lawrence Reeves	Canadian Satellite Design Challenge Management	Canada
16:50 - 17:05	CanSat Leader Training Program (CLTP) Report	Emiko Ando	UNISEC	Japan
17:05 - 17:20	Research and Application Based Space Education	Alim Rüstem Aslan	Istanbul Technical University	Turkey
17:20 - 17:35	Lessons Learned in Systems Engineering Education for Students' CanSat Projects	Takahiro Ito	Osaka Prefecture University/ UNISEC	Japan
17:35 - 17:50	Indonesian Capacity Building in Space Technology	Ery Fitrianingsih	Indonesian National Institute of Aeronautics and Space (LAPAN)	Indonesia

13th, October

UN Space Education Curriculum Session (9:20 - 11:20 @3F Port Messe Nagoya)

Since 1988 the United Nations, through its Programme on Space Applications, has supported the establishment of Regional Centres for Space Science and Technology Education, affiliated to the United Nations, in Africa, Asia and the Pacific, Latin America and the Caribbean, and Western Asia. To ensure an acceptable common standard of teaching, education curricula have been developed in various core disciplines taught at the Centres. Under the Basic Space Technology Initiative (BSTI) of the Programme on Space Applications, the Office for Outer Space Affairs intends to develop an Education Curriculum on Space Technology and Engineering. This session will kick-off the education curriculum development activities.

9:20 - 11:20	UN Space Education Curriculum Session
11:20 - 11:40 Coffee Break	
11:40 - 12:40	UN Space Education Curriculum Session

Closing Session (12:40 - 13:40 @3F Port Messe Nagoya)

12:40 - 13:40	Closing Session

10th and 11th, Octoer

Poster Session

1	Redundant On-board Computer Design for Cube Satellites	Shengchang LAN	Aalto university	Finland
2	Development of the Cubesat FITSAT-1	Kenta Tanaka	Fukuoka Institute of Technology	Japan
3	Observation of the LED signal from FITSAT-1	Yuka Mizoguchi	Fukuoka Institute of Technology	Japan
4	Implementation of Attitude Determination and Control System into PACE Nano-satellite	Hoang The Huynh	National Cheng Kung University	Taiwan
5	Performance comparison of tracking algorithms for low-cost ground stations	Marco Schmidt	University of Wuerzburg	Germany
6	A HIGH-PERFORMANCE, COMPACT, ON-BOARD COMPUTER FOR SMALL SATELLITES USING COTS DEVICES	Shinji Takano	Tokyo University of Science	Japan
7	Nano Satellite Channel Coding and System Power Saving	Alaa Eldin Hassan	NARSS	Egypt
8	BEESAT-3: Passive Attitude Control for Directed Radio Transmission on a Single-Unit CubeSat	Merlin Barschke	TU Berlin	Germany
9	Streamlining Electrical Ground Support and Ground Station Operation Using Software-Defined Radio: CKUTEX Experience	Yun-Peng Tsai	National Cheng Kung University	Taiwan
10	A new approach on unloading control law using MTQs for jitter reduction of a reaction wheel for small satellites	Phongsatorn Saisutjarit	King Mongkut's University of Technology North Bangkok	Thailand
11	Implementation and Evaluation of Low Cost Fault Tolerant Techniques for Nano/Pico-Satellite Applications	Pieter Botma	Universiteit Stellenbosch University	South Africa
12	Leveraging miniaturization and innovative designs to achieve advanced micro satellite mission capabilities	DINESH YADAVENDRA	HQIDS, GOVT OF INDIA, NEW DELHI	INDIA
13	Development of Miniature 4 Wheels Reaction Wheel Assembly for CubeSat	Yunju Na	Korea Advanced Institute of Science and Technology	Republic of Korea
14	Engineering Model Development of a Miniature Ion Propulsion System	Hiroyuki Koizumi	The University of Tokyo	Japan
15	International Orbit Determination Network System for Micro and Nano Satellites	Yuji Sakamoto	Tohoku University	Japan
16	Attitude Determination and Control System of STUDSAT-2A/2B for Inter-satellite link	SAROJ KUMAR	Team STUDSAT	India
17	System Engineering & Implementation of On Board Command & Data Handling - STUDSAT 2	Vishwas .S	Team STUDSAT - Sri Siddhartha Institute of Technology	India
18	Application of magnetic planar actuators to control of extensible structures in small satellite missions	Inamori Takaya	University of Tokyo	Japan
19	The Updated Guidebook on Small Satellite Programs	Maria Alonsoperez	Space Generation Advisory Council	Uruguay
20	Electric Propulsion Approach for Commercial Telecom Satellites in Geo	MOSHOOD KAREEM	NIGERIAN COMMUNICATIONS SATELLITE	NIGERIAN
21	Space Technology Education through University Programs for UN/Japan Nano-Satellite Symposium	SOHA BADRY	Bibliotheca Alexandrina	Egypt
22	Simple and Low-Cost Attitude Control and Determination System for Micro/Nano Satellite Focusing on Survivability	Kikuko Miyata	Next generation Space system Technology Research Association	Japan
23	STUDSAT-2 (Student Satellite - 2) India's First Twin Satellite Mission to prove Inter Satellite Communication – Technology Demonstration Project	Bheema Rajulu	Nitte Meenakshi Institute of Technology	India
24	On-orbit Demonstration Satellite 'HORYU-II' A High Voltage Technology Mission	Akitoshi Takahashi	Kyushu Institute of Technology	Japan
25	Path finder radiation test suitable for micro/nano satellites	yuta okumura	Kyushu Institute of Technology	Japan

26	Ground software architecture of RASAT	Muammer Eroglu	TUBITAK Space Technologies Research Institute	Turkey
27	The Lessons Learned from the Commissioning and Operation Phases of RASAT: An AODCS Perspective	Farid Gulmammadov	TUBITAK Space Technologies Research Institute (TUBITAK-	Turkey
28	Development and construction of the SENSAT: a NanoSatellite platform based on the CubeSat standard	Miguel Alonso	Centro de Investigacin Cientfica y de Educaci;n Superior de Ensenada	Mexico
29	Spinning Solar Sail Satellite in an Earth-Centred Orbit	Hendrik Jordaan	University of Stellenbosch	South Africa
30	DESIGN OF PASSIVE THERMAL PROTECTION SYSTEM FOR A NANO SATELLITE IN LOW INCLINATION ORBIT	Vishal Latha Balakumar	SRM University	India
31	Spacecraft Health and Environmental Monitoring from a CubeSat Platform	Ross Burgon	The Open University	United Kingdom
32	System Description and Result of Ground Test for Cubesat "RAIKO"	Hitoshi Yagisawa	Tohoku University	Japan
33	A cube/nanosat program based on national and international cooperation	Otavio Durao	INPE - Brazilian Institute for Space Research	Brazil
34	Monitoring Satellite Health Using Satellite Anomaly Information System (SIAS)	Neflia	National Institute of Aeronautics and Spacee (LAPAN)	Indonesia
35	Investigation on the effect of deployment velocity on massive CubeSat deployment event	Ji Hyun Park	Seoul National Unviersity	Korea
36	Nanosatellite clusters for multi-spectral, bi-directional reflectance distribution function estimations	Sreeja Nag	Massachusetts Institute of Technology	U.S.A
37	DEVELOPMENT OF CHUBUSAT-1 SMALL SATELLITE	Yasutaka Narusawa	Nagoya University	Japan
38	CubeSat activities in South Africa	Francois Visser	Cape Peninsula University of Technology	South Africa
39	Lifetime estimation of a small satellite in LEO using inertial sensors and TLE	Vanessa Gamero	National University of Engineering	Peru
40	Thermal Analyses and Guideline for Thermal Design of Nano and Micro Satellites on Sun-synchronous Orbits	Ryota Inoue	Hokkaido University	Japan
41	Environment Test Campaign of Micro/Nano-Satellite Power Control Unit	Kazuya Okada	Kyushu Institute of Technology	Japan
42	Environment Test Campaign of Micro/Nano-Satellite Radio Frequency Components	Kenta Tomida	Kyushu Institute of Technology	Japan
43	Lessons Learned on Structural Design of 50kg Micro-satellites based on Three Real-life Micro-satellite Projects	Yoshihiro Tomioka	Tohoku University	Japan
44	Measurement of vibration acceleration distribution within micro/nano satellites for environment test standardization	Amgalanbat Batsuren	Kyushu Institute of Technology	Japan
45	Payloads for Humsat-Mexico Mission Generated and Validated with SATEDU Satellite Development System	Esau Vicente-Vivas	Universidad Nacional Autonoma de Mexico	Mexico
46	Strengthening Space Technology Applications at Future University Sudan	Carlos Pascual	Future University	Sudan
47	ALIGNING SPACE SCIENCE AND TECHNOLOGY (SST) CURRICULUM IN UNIVERSITIES WITH THE NATIONAL AGENDA IN KENYA	Faith Karanja	University of Nairobi	Kenya
48	Adaptive Capacity Building & Training Approach Proposed for The Regional Centre for Space Science and Technology Education for Western Asia in Amman	Saleh Al Shidhani	Sultan Qaboos University	Oman
49	Indonesian Cansat Training Program	Agfianto Putra	Universitas Gadjah Mada	Indonesia
50	National Capacity Building for Mexico using small satellites: The Mexican Space Agency Vision	Enrique Pacheco	Mexican Space Agency (AEM)	Mexico
51	The Advanced Instrumentation and Technology Centre: A Multi-sector Facility for Developing Australia's Space Capability	Naomi Mathers	Victorian Space Science Education Centre	Australia
52	Starting a Commercial (non-profit) Space Company	Peter Platzer	ArduSat LLC	Austria
53	IDEA: In-situ Debris Environmental Awareness	Akira Doi, Hideaki Hinagawa and Hiroaki Hamada	Space Systems Dynamics Laboratory, Kyushu University	Japan
54	Commercializing Weather Prediction	Bhagyashri Telsang	Manipal Institute of Technology	India
55	SofiaUniversitySAT (Small Communication Satellite Mission for Enhancement of Antarctic Investigations)	Kaloyan Zlatkov	Sofia University "St. Kliment Ohridski"	Bulgaria
56	Satellite real time monitoring of water flood and quality in Tunisia	Kamel Besbes	University of Monastir	Tunisia
57	Integrated Rescue Service Satellite (IRS-Sat)	Mohamed Mahmoud Ibrahim and Batsuren Amgalanbat	Kyushu Institute of Technology	Japan
58	Laser-Assisted Rain Control Constellation	Ravit Sachasiri, Pirada Techavijit and Nicha Pittayapongsakorn	Geo-Informatics and Space Technology Development Agency	Thailand
59	Droplet Stream Orbital Debris Remediation	Thomas Joslyn and David Besson	United States Air Force Academy	USA
60	LEON, a leap forward for a cleaner, safer, and more sustainable space	Pauline Faure	Kyushu Institute of Technology	Japan
61	REDCYTE CONACYT NETWORK MEXICO	Saul Daniel Santillan Gutierrez	CONACYT NETWORK FOR SPATIAL RESEARCH AND DEVELOPMENT	Mexico

Date	Venue	Symposium Schedule										Social Program
Day 1 **October 10 (Wed)**	Winc Aichi Main Hal 2-3F	8:30 – Regis-tration	9:30 – 11:10 **Opening Session** (100 min)	Photo session 11:10 – 11:30 Break @Foyer (20 min.)	11:30 – 12:00 **MIC Opening Remarks** (30 min)	12:00 – 13:00 **MIC Finalist-2** Presentations of Business Model (20min.x 3 teams) (1 hour)	13:00 – 14:30 Lunch @Castle Plaza Hotel (1.5 hours)	14:30 – 16:50 **MIC Finalist-1** Presentation of Satellite Design (20min.x 7 teams) (140 min)	16:50 – 18:00 MIC Review (Closed Room) @ RM 905 and 906 (9F) (70 min)	18:00 – 18:30 **MIC Award Ceremony** (30 min)		**19:00 – 21:00** **Symposium Reception** @Castle Plaza Hotel
	Winc Aichi 8F	9:00 – 13:00 Preparation for Poster Session at Exhibition Hall (8F: 805 room)					13:00 – 18:00 ***Posters:*** On display in the Exhibition Hall (8F: 805)		16:50 – 18:00 Poster Session (8F) Served with Coffee/Tea			
Day 2 **October 11 (Thu)**	Winc Aichi Main Hall 2-3F	8:30 – Regis-tration	9:00 – 9:40 **Special Lectures:** (20min.x 2 Experts) (40 min)	9:40 – 10:40 **Panel Discussion 1:** **How to keep good quality without increasing cost and time for development** (1 hour)	Photo session 10:40 – 11:00 Break @Foyer (20 min.)	11:00 – 13:15 **Session 1:** **Satellite Architecture and Technologies** (15min x 9 Selected Speakers) (135 min)	13:15 – 14:45 **UNISEC Meeting** (Closed Session @9F 906) (1.5 hour) 13:15 – 14:45 Lunch@Castle Plaza Hotel (1.5 hours)		15:45 – 17:30 **Session 2:** **Innovation in Satellite Development Process** (15min x 7 Selected Speakers) (105 min)	17:30 – 18:30 **Panel Discussion 2:** **International Space Education using Nano-Satellite** (1 hour)		**19:00 – 21:00** **UNISEC Gathering** @Brasserie Paul Bocuse (JR Central Towers 12F)
	Winc Aichi 8F			9:00 – 16:00 ***Posters***: On display in the Exhibition Hall (8F: 805)				14:45 – 15:45 Poster Session Served with Coffee/Tea (1 hour)				
Day 3 **October 12 (Fri)**	Port Messe Nagoya Koryu Center (Communication Center) Meeting Hall 3F	9:00– Regis-tration	9:20 – 11:05 **Session 3:** **Utilization/Applications of Micro- and Nano-Satellites** (15min x 7 Selected Speakers) (105 min)	11:05 – 11:25 Coffee Break @Meeting Hall (20 min.)	11:25 – 12:15 **Panel Discussion 3:** **Small Satellites and Space Debris** (50 min.)	12:15 – 13:30 Lunch@Port Messe (75 min)	13:30 – 15:30 **Session 4:** **Standardization and Regulatory Issues** (15min x 5, 20min x 2 Selected Speakers) (2 hours)	15:30 – 15:50 Coffee Break @Meeting Hall (20 min.)	15:50 – 17:50 **Session 5:** **Strategies for Capacity Building** (15min x 8 Selected Speakers) (2 hours)		18:20 Transfer to Restaurant By Chartered Bus	**19:30– 21:30** **GALA Dinner** @Kawabun Nagoya
Day 4 **October 13 (Sat)**		9:00– Regis-tration	9:20 – 11:20 **UN Space Education Curriculum Session** (2 hours)	11:20 – 11:40 Coffee Break @Meeting Hall (20 min.)	11:40 – 12:40 **UN Space Education Curriculum Session** (1 hour)	12:40 – 13:40 **Closing Session** (1 hour) 12:30 – 13:00: ・Summary of the Workshop 13:00 – 13:30: ・Closing Remarks	13:40 – 14:40 Lunch@ Port Messe (1 hour)	14:40 – 18:00 **・Closed Meeting** **・JA2012 visit**			18:00- Transfer to Nagoya Station By Chartered Bus	

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