



**United Nations / Mexico
Symposium on Basic Space Technology
“Making Space Technology Accessible and Affordable”**

Programme

Hosted By



Center for Scientific Research and Higher Education

Co-sponsored by



Mexican Space Agency

Ensenada, Baja California

20 - 23 October 2014

Honorary Committee (in alphabetical order):

E. Cabrero	General Director, National Council of Science and Technology (CONACYT), Mexico
F. Cuamea	Rector, Autonomous University of Baja California (UABC), Mexico
S. Di Pippo	Director, Office for Outer Space Affairs, United Nations
F. Graef	General Director, Center for Scientific Research and Higher Education (CICESE), Mexico
F. Mendieta	General Director, Mexican Space Agency, Mexico
G. Ruiz	Minister of Communications and Transports, Mexico
F. Vega	Governor of Baja California, Mexico

Programme Committee (in alphabetical order):

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W. Balogh	Office for Outer Space Affairs, United Nations
R. Conte	Center for Scientific Research and Higher Education (CICESE), Mexico
C. Kobayashi	Office for Outer Space Affairs, United Nations
A. Matas	International Telecommunication Union
F. Menicocci	Argentina National Space Activities Commission (CONAE), Argentina
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E. Pacheco	Mexican Space Agency, Mexico
J. Puig	California Polytechnic State University, USA
J. Rolón	National Polytechnic Institute, Mexico
S. Santillan	National Autonomous University of Mexico (UNAM), Mexico
M. Sweeting	University of Surrey / Surrey Satellite Technology Ltd., United Kingdom
P. Wolanski	Committee on Space Research, Polish Academy of Sciences, Poland

Local Organizing Committee (in alphabetical order):

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Monday, 20 October 2014

Morning

07:30 *Initiate Transfer to CICESE*

08:00 **Registration**

09:00 **Opening Ceremony**

Master of Ceremony: Arturo Serrano, Center for Scientific Research and Higher Education (CICESE), Mexico

09:00 Welcome / Opening Remarks

- *Omar Charfen, Director of Desentralized Organisms Ministry of Communications and Transports*
- *Federico Graef, General Director of CICESE*
- *Gilberto Hirata, Ensenada's Mayor*
- *Bladimiro Hernández Díaz, Comptroller General of Baja California State Government*
- *Oscar Lopez Bonilla, Vice-Rector of UABC*
- *Javier Mendieta, General Director of AEM*
- *Werner Balogh, United Nations Office for Outer Space Affairs*

10:00-11:00 *Press Conference*

(by invitation)

10:00 **Keynote Addresses**

10:00 Small Satellites – changing the economics of space

*Martin Sweeting
University of Surrey / Surrey Satellite
Technology Ltd., United Kingdom*

10:40 *Coffee/Tea Break*

11:00 Making Space Technology Accessible and Affordable- A Latin American Perspective

*Francisco Javier Mendieta
Mexican Space Agency, Mexico*

11:30 **Symposium Introduction**

11:30 United Nations Basic Space Technology Initiative, Objectives of the 2014 Symposium and Practical Arrangements

*Werner Balogh
United Nations Office for Outer Space Affairs*

12: 30 *Lunch*

Afternoon

14:00 **Session 1: Space Technology Development Activities in Latin America and the Caribbean**

Chairperson: Julio Rolon, National Polytechnic Institute, Mexico

Rapporteur: Maria Victoria Alonsoperez, Space Technology Series, Uruguay

- 14:00 Space Technology Development in Bolivia *Farid Alejandro Velasquez Barron
Agencia Boliviana Espacial ABE
Bolivia*
- 14:20 Libertad 2 Satellite. A new challenge for the
Colombian Space Race *Andrea Guzman Mesa
Universidad Sergio Arboleda
Colombia*
- 14:40 Small Satellites Development at CICESE *Roberto Conte
Center for Scientific Research and Higher
Education, Mexico*
- 15:00 Small Satellites Program in Costa Rica *Carlos Alvarado
ACAE, Costa Rica*
- 15:20 Developing a New Standard on Small Satellites
for Emerging Space Nations *Pablo de León
Argentine Association for Space Technology
Argentina*
- 15:40 *Coffee/Tea Break*
- 16:00** **Panel Discussion** *Panel participants*
Prospects, Plans and Visions for Regional
Cooperation in Space Technology
Development Among Countries in Latin
America and the Caribbean *Moderator: Enrique Pacheco, Mexican Space
Agency, Mexico*
- 17:30 *Adjourn*
- 19:00 *Reception - Welcome cocktail (Hotel Coral y Marina)
Sponsor: Honeywell, United States of America*

Tuesday, 21 October 2014

Morning

08:30 *Transfer to CICESE*

9:00 **Session 2: Capacity Building in Basic Space Technology Development**

Chairperson: Jordi Puig-Suari, California Polytechnic State University, USA

Rapporteur: Daniel Lara-Favela, National Polytechnic Institute, Mexico

- 9:00 Building Aeronautical Engineering and
Technology Capabilities in Mexico *Ricardo Garcia
Honeywell, United States of America*

9:15	Advances in Satellite Engineering and the Impact on Human Capital Development - The Satellite Engineering Academy	<i>Khalid Manjoo Space Advisory Company South Africa</i>
9:30	Implementation of the small satellite training program in the Kent Ridge 1 Mission	<i>Tom Segert Berlin Space Technologies Germany</i>
9:45	Complex International Innovation Partnerships pursuing Capacity Building in Satellite and University Programs	<i>Danielle Wood Johns Hopkins University United States of America</i>
10:00	UNIFORM-1 Satellite - Recent Results and Future Japanese Satellite and Ground Station Internship Programme	<i>Hiroaki Akiyama Wakayama University Japan</i>
10:15	The NanosatC-Br1 cubesat - development, launch, operation, results and lessons learned	<i>Otavio Santeos Durao INPE, Brazil</i>
10:30	<i>Coffee/Tea Break</i>	
11:00	<u>Session 3: Small Satellites for Earth Observation and Disaster Management</u>	
	<i>Chairperson: Brett McMickell, Honeywell, United States of America Rapporteur: Ana Virginia Hanessian, Mexican Space Agency, Mexico</i>	
11:00	Small Satellite Constellations for Disaster Monitoring	<i>Andrew Greenhalgh University of Surrey / Surrey Satellite Technology Ltd., United Kingdom</i>
11:15	Goldilocks and the Three Satellites – A Discussion of Technical, Cost And Reliability Issues in Small Operational Missions	<i>James Barrington-Brown NewSpace Systems South Africa</i>
11:30	Development and Preliminary Validation of Cubesat Compatible Nano-Satellite Bus in a University Environment	<i>Esau Vicente Engineering Institute, National Autonomous University of Mexico, Mexico</i>
11:45	Remote Sensing Data Management for Developing Countries	<i>Mariano Andres Imbert Agencia Bolivariana para Actividades Espaciales (ABAE), Venezuela</i>
12:00	Synthetic Aperture Radar (SAR) for Earth Observation	<i>Octavio Ponce Madrigal DLR, Germany</i>
12:15	Impact of Small Satellite Missions for Technology Development in Third World Countries	<i>Antonio Eduardo Gutierrez Mexican Embassy Germany- Mexican Talent Network, Germany</i>
12:30	<i>Lunch</i>	

Afternoon

14:00 **Session 4: Small Satellite Projects for Engineering Education**

Chairperson: Andres Martinez, NASA Ames, United States of America

Rapporteur: Octavio Ponce, DLR, Germany

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| 14:00 | Education and Students Projects Related to Space Technology at the Warsaw University of Technology | <i>Inna Uwarowa
Warsaw University of Technology
Poland</i> |
| 14:15 | Can High School Students Design and Build a Satellite? | <i>Ariel Yaakov Jaffe
Herzliya Science Center, Israel</i> |
| 14:30 | Small Satellite Project for Engineering Education and "Beyond | <i>Shinichi Nakasuka
University of Tokyo, Japan</i> |
| 14:45 | Introduction to UNISEC-Global | <i>Rei Kawashima
UNISEC, Japan</i> |
| 15:00 | The Role of Small Sats in Workforce Development | <i>Jordi Puig-Suari
California Polytechnic State University
United States of America</i> |
| 15:15 | PIXQUI a platform for testing space systems on stratospheric balloons flights | <i>Gustavo Medina Tanco
Institute for Nuclear Sciences of the National Autonomous University of Mexico</i> |
| 15:30 | <i>Coffee/Tea Break</i> | |
| 16:00 | Panel Discussion
Best Practices to Develop Capacity Building in Basic Space Technology | <i>Panel participants
Moderator: Saul de la Rosa, National Autonomous University of Mexico</i> |
| 17:30 | <i>Adjourn - Transfer to the hotel – Cultural Event</i> | |
| 18:30 | <i>Reception/Dinner Riviera de Ensenada Salon Rojo
Keynote Speaker S. Pete Worden NASA AMES, United States of America</i> | |

Wednesday, 22 October 2014

Morning

08:30 *Transfer to CICESE*

9:00 **Session 5: Education Curriculum on Space Engineering**

Chairperson: Chisato Kobayashi, United Nations Office for Outer Space Affairs (ret.)

Rapporteur: Andrea Jaime Albalat, Space Generation Advisory Council

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| 9:00 | Status of Education Curriculum Development | <i>Chisato Kobayashi
United Nations Office for Outer Space Affairs
(ret.)</i> |
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9:10	Regional Centres for Space Science and Technology Education (affiliated to the United Nations)	<i>Sonia Beharovic United Nations Office for Outer Space Affairs</i>
9:20	Importance of development of joint engineering - aeronautical curricula in developing countries	<i>Sergio Alejandro Minera Rebullá Universidad Del Valle Guatemala</i>
9:35	Nano-Satellite Project-Based Learning for Capacity Building in Basic Space Technology Development	<i>John Polansky Kyusyu Institute of Technology, Japan</i>
9:50	The Perspectives of the Young Professionals and students on the future of small Satellites: Benefits and Risks	<i>Andrea Jaime Albalat Space Generation Advisory Council</i>
10:05	What Really Matters When Starting a Space Education Program	<i>Norman Fitz-Coy University of Florida, United States of America</i>
10:20	Education Curriculum on Space Engineering - Experiences at the University of Tokyo	<i>Shinichi Nakasuka University of Tokyo, Japan</i>
10:35	Academic Activities at INPE in the Space Field	<i>Antonio Fernando Bertachini de Almeida Prado INPE, Brazil</i>
10:50	<i>Coffee/Tea Break</i>	
11:15	Establishment and work of Working Group on Education Curriculum on Space Engineering	<i>International Panel of Experts</i>
12:30	<i>Lunch</i>	
<i>Afternoon</i>		
14:00	<u>Session 6: Regulatory and Legal Issues</u>	
	<i>Chairperson: Arturo Serrano, CICESE, Mexico Rapporteur: Sandra Cabrera Alvarado, Mexican Space Agency, Mexico</i>	
14:00	Regulatory and Legal Issues of Small Satellites	<i>Werner Balogh United Nations Office for Outer Space Affairs</i>
14:15	The role of states in the control and supervision of small satellites to allow access to space technology. Challenges and Prospects	<i>Camilo Guzman Gomez Sergio Arboleda University Colombia</i>
14:30	Authorization of Small Satellites under National Space Legislation	<i>Irmgard Marboe University of Vienna, Austria</i>
14:45	Frequency Registration for Small Satellite Missions – ITU Workshop	<i>Attila Matas International Telecommunication Union (ITU)</i>
16:45	Poster Sessions and Coffee Break	

11:30	CubeSat Mobile Exploration Platform	<i>Mauricio Ramiro Henriquez Schott Universidad Austral de Chile, Chile</i>
11:45	Egyptian Space Programme	<i>Mohamed El Koosy National Authority for Remote Sensing and Space Science, Egypt</i>
12:00	Building Basic Space Capacity Based on Micro/Nano Satellite Programme	<i>Xinsheng Wang School of Astronautics Beihang University, China</i>
12:15	Cubesat for Telemedicine Purposes	<i>Lilia Edit Aparicio Pico Distrital University Francisco José de Caldas Colombia</i>
12:30	<i>Lunch</i>	
<i>Afternoon</i>		
14:00	<u>Session 9: Way Forward</u>	
14:00	Symposium Review and discussion of forthcoming future activities under the Basic Space Technology Initiative and on the observations and recommendations to be included in the report to the United Nations Committee on the Peaceful Uses of Outer Space	All Symposium Participants
15:00	<u>Closing Session</u>	
	<i>Master of Ceremony: Enrique Pacheco, Mexican Space Agency</i>	
15:00	Closing Remarks	<ul style="list-style-type: none"> ○ Co-Sponsors ○ United Nations Office for Outer Space Affairs
15:30	<i>Adjourn - Transfer to the Vineyard and end of the Symposium</i>	
17:00	Vineyard Dinner	
20:00	Transfer to the Hotel	