United Nations / United Arab Emirates
Symposium on Basic Space Technology
“Small Satellite Missions for Developing Space Nations”

Programme

Hosted by

Emirates Institution for Advanced Science and Technology (EIAST)
on behalf of the Government of the United Arab Emirates

Zayed University Conference Center
Dubai Academic City

20 - 23 October 2013
Honorary Committee (in alphabetical order):

H. Al Mansoori  Emirates Institution for Advanced Science and Technology, UAE
M. Othman  United Nations Office for Outer Space Affairs
Y. Al Shaibani  Emirates Institution for Advanced Science and Technology, UAE

Programme Committee (in alphabetical order):

S. Al Marri  Emirates Institution for Advanced Science and Technology, UAE
A. Alsayegh  Emirates Institution for Advanced Science and Technology, UAE
W. Balogh  United Nations Office for Outer Space Affairs
M. Cho  Kyushu Institute of Technology, Japan
J.-C. Bigot  European Space Agency
R. Kawashima  UNISEC, Japan
O. Koudelka  Joanneum Research and Graz University of Technology, Austria
M. Cho  Kyushu Institute of Technology, Japan
J.-C. Bigot  European Space Agency
R. Kawashima  UNISEC, Japan
O. Koudelka  Joanneum Research and Graz University of Technology, Austria
P. Martinez  South African Astronomical Observatory, South Africa
A. Matas  International Telecommunication Union
J. Muyllaert  Von Karman Institute, Belgium
S. Nakasuka  University of Tokyo, Japan
E. Pacheco  Agencia Espacial Mexicana, Mexico
F. Romero  Ministry of Foreign Affairs, Mexico
R. Sandau  International Academy of Astronautics
O. Sharaf  Emirates Institution for Advanced Science and Technology, UAE

Local Organizing Committee (in alphabetical order):

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Email:  ghariba@eiast.ae
Sunday, 20 October 2013

Morning
08:30 Registration

09:30 Opening Ceremony
Master of Ceremony: Abdulla Al Qemzi, EIAST, United Arab Emirates

09:30 National Anthem / Welcome / Opening Remarks
○ H.E. Yousuf Al Shaibani, Director General of Emirates Institution for Advanced Science and Technology
○ United Nations Office for Outer Space Affairs

10:00 Keynote Addresses
10:00 Space Science, Technology and its Applications for Western Asia
Salem Al Marri
EIAST
United Arab Emirates

10:30 Small Satellite Missions - Prospects and Challenges for Developing Space Nations
Rainer Sandau
International Academy of Astronautics

11:00 Coffee/Tea Break

11:30 Capacity Building in Space Technology Development and the International Space Station
Soichi Noguchi
Astronaut, JAXA
Japan

12:00 United Nations Basic Space Technology Initiative and Objectives of the 2013 Symposium and practical arrangements for the Symposium
Werner Balogh
United Nations
Office for Outer Space Affairs

12:30 Lunch

Afternoon
13:30 Session 1: Capacity Building in Basic Space Technology Development
Chairperson: Shinichi Nakasuka, The University of Tokyo, Japan
Rapporteur: Danielle Wood, Johns Hopkins University, USA

13:30 Strategic Decision Making for Small Satellite Programmes
Danielle Wood
Johns Hopkins University
Whiting School of Engineering, USA

13:50 Capacity building in space technology through low cost programme initiatives
Irfan Aslam
Satellite Research & Development Center SUPARCO, Pakistan
14:10  Case Studies in Capacity Building for Space, Telecom and IT; Lessons Learned and Requirements for Success  
Bruce D. Kraselsky  
Space Partnership International  
USA

14:30  Space Engineering Education through Nanosatellite Development and Testing for Capacity Building in Basic Space Technology Development  
John Polansky, Mohamed Ibrahim  
Kyushu Institute of Technology, Japan

15:10  Coffee/Tea Break

15:40  International Cooperation Potential in Pico-satellite Networks - for Interesting Earth Observation and Telecommunication Applications  
Klaus Schilling  
University of Würzburg  
Germany

16:00  Status of QB 50 – An International Network of Cubesats  
Jean Muylaert  
von Karman Institute, Belgium

16:20  HUMSAT-D: First satellite of HUMSAT constellation  
Fernando Aguado-Agelet  
University of Vigo, Spain

16:40  Panel Discussion: Requirements and Conditions for Enabling and Sustaining Space Technology Development Activities in Support of National and Regional Development Priorities  
Panel Members

18:00  Reception/Dinner on the Venue

20:30  Transfer to the hotel

Monday, 21 October 2013

Morning

09:00  Session 2: Infrastructures for Basic Space Technology Development
Chairperson: Mohammed Al Harmi, EIAST  
Rapporteur: Fernando Aguado-Agelet, University of Vigo, Spain

09:00  CubeSat: Entry Level to Space Development - Basic Infrastructure Requirements for Space Technology Development  
Jordi Puig-Suari  
California Polytechnic State University  
USA

09:20  Supporting Customer for testing and the development of AIT-Centre for the benefit of small satellites programmes  
François Royer  
INTESPACE  
France

09:40  Micro/Nano/Pico-satellite Activities in Japan - University Challenge towards New Space Education and Utilization  
Shinichi Nakasuka  
Graduate School of Engineering, The University of Tokyo, Japan
10:00 What is the Infrastructure required for Basic Space Technology Development? James Barrington Brown
NewSpace Systems
South Africa

10:20 Standardization Project of Environmental Tests of Small-scale Satellites Seeking Low-cost and Fast-delivery; Introduction of Standard Draft Mengu Cho
Kyushu Institute of Technology
Japan

10:40 Coffee/Tea Break

11:10 Panel Discussion: Best practices for establishing infrastructures for basic space technology development Panel Members

12:30 Lunch

Afternoon

13:30 Session 3: Launch Opportunities for Small Satellite Missions
Chairperson: Jordi Puig-Suari, California Polytechnic State University, USA
Rapporteur: Fernando Stancato, EMBRAER, Brazil

13:30 LauncherOne: Revolutionary Orbital Transport for Small Satellites Stephen Attenborough
Virgin Galactic, USA

13:50 S3: Enabling Affordable and Recurrent Access to Space Richard Joye
Swiss Space Systems, Switzerland

14:10 Economic Development of Commercial Spaceports Christopher Shove
Montana Business Assistance Connection, USA

14:30 Launch Opportunities and Separation Mechanisms for Satellites in 1-50kg Range Stanislaw Ostoja-Starzewski
NovaNano S.A.S., France

14:50 Coffee/Tea Break

15:30 Session 4: Small Satellite Platforms for Earth Observations
Chairperson: Rainer Sandau, International Academy of Astronautics
Rapporteur: Rei Kawashima, UNISEC, Japan

15:30 DubaiSat-1/-2: Experiences with Development and Operational Use Abdulla Harmoul
EIAST
United Arab Emirates

15:50 Disaster Monitoring Constellation Evolution and Development Simon Jeremy Crouch
Surrey Satellite Technology Ltd, UK

16:10 The FIREBIRD Constellation Stephan Roemer
Astro- u. Feinwerktechnik Adlershof GmbH
Berlin, Germany

16:30 Departure for Technical Tour
Tuesday, 22 October 2013

Morning
9:00  **Session 5: Regulatory and Legal Issues**
Chairperson: Norman Fitz-Coy, University of Florida, USA
Rapporteur: Olusoji Nester John, National Space Research and Development Agency, Nigeria

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<tr>
<th>Time</th>
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<tr>
<td>9:00</td>
<td>Regulatory and Legal Issues of Small Satellites</td>
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<td>9:20</td>
<td>Long-term Sustainability of Outer Space Activities</td>
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<td>9:40</td>
<td>Frequency Registration for Small Satellite Missions – ITU Workshop</td>
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<td>10:30</td>
<td>Coffee/Tea Break</td>
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<tr>
<td>11:00</td>
<td>Continuation of ITU Workshop and Discussion</td>
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<td>12:30</td>
<td>Lunch</td>
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Afternoon
13:30 **Session 6: Space Technology Development Activities in Western Asia**
Chairperson: Ayman El-Sherbiny, UN-ESCWA
Rapporteur: Mohamed Ibrahim, KIT, Egypt/Japan

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<tr>
<td>13:30</td>
<td>International activities of UNISEC and Proposal of UNISEC-Global</td>
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<td>14:00</td>
<td>Prospects for Turkish UNISEC and International Cooperation</td>
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<td>14:10</td>
<td>Building a University Consortium in Space Technology in Tunisia</td>
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<td>14:20</td>
<td>Improving Aerospace Students Learning at Cairo University using CanSat Related Teaching Modules</td>
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<td>14:30</td>
<td>Arab Countries and Space Technology - Requirements and applications</td>
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<td>14:50</td>
<td>Prospects of capacity building in Space Technology Program, Egypt</td>
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<td>15:10</td>
<td>Arab Small Satellites Programmes for Capacity Building and Sustainable Development</td>
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<td>15:30</td>
<td>Coffee/Tea Break</td>
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<td>16:00</td>
<td>A Synopsis of Small Satellite Activities in India</td>
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<td>16:20</td>
<td>Turkish Satellite Capabilities</td>
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<td>16:40</td>
<td>Panel Discussion: Prospects for Space Technology Development Activities and Regional and International Cooperation in Western Asia</td>
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<td>18:00</td>
<td>End of Symposium Day and Free Time</td>
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**Wednesday, 23 October 2013**

**Morning**

**9:00 Session 7: Working Groups - Education Curriculum on Space Engineering and Basic Space Technology Initiative**

*Chairperson: Mengu Cho, Kyushu Institute of Technology, Japan*

*Rapporteur: United Nations Office for Outer Space Affairs*

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<th>Time</th>
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<th>Presenter(s)</th>
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<tr>
<td>9:00</td>
<td>Horyu-V: The Space Environment Explorer</td>
<td>Mohamed Ibrahim&lt;br&gt;Kyushu Institute of Technology, Japan</td>
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<tr>
<td>9:20</td>
<td>Educate Utilizing CubeSat Experience: Systematic Approach to Deliver STEM Content</td>
<td>Norman Fitz-Coy&lt;br&gt;University of Florida, USA</td>
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<td>9:40</td>
<td>Status of Education Curriculum Development</td>
<td>Chisato Kobayashi&lt;br&gt;United Nations Office for Outer Space Affairs</td>
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<td>9:50</td>
<td>Building Space Capabilities in Venezuela Based on Satellite Technology</td>
<td>Gustavo González&lt;br&gt;Bolivarian Agency for Space Activities</td>
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<td>10:05</td>
<td>Nano Satellite Development Issues in Developing Countries - Case Study Sudan</td>
<td>Amal Elsamani Ahmed Taha&lt;br&gt;University of Khartoum</td>
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<td>10:20</td>
<td>Space Technology Capacity Development in Southern Africa – Case Study: South Africa/Namibia collaboration</td>
<td>Smita Anil Francis&lt;br&gt;Namibian Institute of Space Technology, and Robert van Zy&lt;br&gt;French South African Institute of Technology</td>
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<td>10:30</td>
<td>Poster Sessions / small group discussion for future collaboration</td>
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12:30  *Lunch*

**Afternoon**

**13:30  Session 8: Way Forward**  
*Chairperson: Werner Balogh, United Nations Office for Outer Space Affairs*

13:30  Symposium Review, 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*

14:45  UN/Mexico Symposium on Basic Space Technology 2014  
*Enrique Pacheco Cabrera*  
*Mexican Space Agency (AEM)*  
*Mexico*

15:00  *Coffee/Tea Break*

**15:30  Closing Session**

15:30  Closing Remarks  
- *EIAST*
- *United Nations Office for Outer Space Affairs*

16:30  *Transfer to the Hotel and End of the Symposium*