25th UN/IAF Workshop on
Space Technology for Socio-Economic Benefits
“Integrated Space Technologies and Applications for a Better Society”
in conjunction
with the 67th International Astronautical Congress

Programme

Hosted By

AEM

Co-sponsored by

eesa

Hilton Guadalajara, Room Oceania
Ave. de la Rosas 2933, Guadalajara, Jalisco, 44530, Mexico

23 – 25 September 2016
Honorary Committee (in alphabetical order):

S. Di Pippo  Director, Office for Outer Space Affairs, United Nations
F.J. Mendieta Jiménez  Director General, Mexican Space Agency (AEM)
K. Higuchi  President, International Astronautical Federation (IAF)
J.D. Woerner  Director General, European Space Agency (ESA)

Programme Committee (in alphabetical order):

W. Balogh  Office for Outer Space Affairs, United Nations
J.-C. Bigot  European Space Agency (ESA)
M. Cho  Kyushu Institute of Technology, Japan
K. Conole  National Aeronautics and Space Administration (NASA), United States of America
C. Feichtinger  International Astronautical Federation (IAF)
J.-L. Fellous  Committee on Space Research (COSPAR)
C. Giannopapa  ESA/IAF- Committee for Liaison with International Organisations and Developing Nations (CLIODN)
A. Ginati  ESA/International Academy of Astronautics (IAA)
C. Lechtenboecker  German Aerospace Center (DLR)/IAF-CLIODN
T. Masson-Zwaan  International Institute of Space Law (IISL)
J. Ortner  EURISY
E. Pacheco  Mexican Space Agency (AEM)
S. Saveliev  International Astronautical Federation/ROSCOSMOS
L. St-Pierre  Office for Outer Space Affairs, United Nations
C. Welch  IAF/International Space University (ISU)

Local Organizing Committee:

E. Pacheco  Mexican Space Agency (AEM)
D. Muñoz  Mexican Space Agency (AEM)
R. Ramírez de Arellano  Mexican Space Agency (AEM)
R. Torres  Mexican Space Agency (AEM)
H. Moreno  Mexican Space Agency (AEM)
J. Castillo  Mexican Space Agency (AEM)

Focal Point UNOOSA:

Office for Outer Space Affairs
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P.O. Box 500
A-1400 Vienna, Austria

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Kurian Maniyanipurathu  Email: kurian.maniyanipurathu@unoosa.org

Focal Point Local Organizer:

Mexican Space Agency
Av. Insurgentes Sur 1685, 2nd, 3rd and 13th Floor
Col. Guadalupe Inn, Deleg. Alvaro Obregon
Mexico, D.F. C.P. 01020

Enrique Pacheco  Email: IAC2016@aem.gob.mx

Focal Point International Astronautical Federation:

International Astronautical Federation
3 Rue Mario Nikis
75015 Paris, France

Christian Feichtinger  Email: christian.feichtinger@iafastro.org
Myriam Morabet  Email: myriam.morabet@iafastro.org
Friday, 23 September 2016

Morning
08:00 Arrival, Registration

09:00 Opening Ceremony

Master of Ceremony: Marcela Torres, BTC-PCO

9:00 Welcome / Opening Remarks

○ Francisco Javier Mendieta Jiménez, Mexican Space Agency
○ Kiyoshi Higuchi, International Astronautical Federation
○ Christina Giannopapa, European Space Agency
○ Simonetta Di Pippo, United Nations Office for Outer Space Affairs

09:30 Keynote Addresses and Workshop Introduction
Chairperson: Karl Doetsch, Past President IAF, Canada
Rapporteur: Rei Kawashima, UNISEC, Japan

09:30 Keynote I

Gustavo Medina (Invited)
National Autonomous University of Mexico (UNAM)
Mexico

10:00 Space in Support of Addressing Global Challenges

Simonetta Di Pippo
United Nations Office for Outer Space Affairs

10:30-11:15 Group Photo

All participants

Coffee/Tea Break

11:15 25 Years of UN/IAF Workshops – A Review

Sergey Chernikov
Austria

11:35 Workshop Background and Objectives and Linkages to the Work of the United Nations

Werner Balogh
United Nations Office for Outer Space Affairs

12:00 Announcements and Practical Arrangements for the Workshop

Mexico
Local Organizing Committee

12:15 Lunch
Set-up of Poster Presentations
### Afternoon

**14:00  Session 1: Space and Sustainable Development**  
*Chairperson: Julio Castillo, Mexican Space Agency  
Rapporteur: Teresa Castillo, Mexican Space Agency*

<table>
<thead>
<tr>
<th>Time</th>
<th>Topic</th>
<th>Speaker</th>
<th>Institution/Location</th>
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<tbody>
<tr>
<td>14:00</td>
<td>Space Contributions to Implementing the 2030 Agenda for Sustainable Development</td>
<td>Jose Eduardo De La Torre Barcena</td>
<td>National Institute of Statistics and Geography (INEGI) Mexico</td>
</tr>
<tr>
<td>14:15</td>
<td>Sustainable Development: Challenges and Opportunities for Space in Listening to the Field</td>
<td>Stefano Ferretti</td>
<td>European Space Policy Institute (ESPI) Austria</td>
</tr>
<tr>
<td>14:30</td>
<td>ESA Programmes Supporting Global Challenges</td>
<td>Isabelle Duvaux-Béchon</td>
<td>European Space Agency (ESA)</td>
</tr>
<tr>
<td>14:45</td>
<td>DLR Contributions to Face Global Challenges</td>
<td>Christiane Lechtenboerger</td>
<td>German Aerospace Center (DLR)</td>
</tr>
<tr>
<td>15:00</td>
<td>Making Space for Earth: NASA Earth Science Applications and Capacity Building for Development</td>
<td>Danielle Wood</td>
<td>National Aeronautics and Space Administration (NASA) United States of America</td>
</tr>
<tr>
<td>15:15</td>
<td>Cooperation in Space Activities in Latin America: a Need for Sustainable Development</td>
<td>Camilo Guzman Gomez</td>
<td>University Sergio Arboleda Colombia</td>
</tr>
<tr>
<td>15:30</td>
<td>The Space Policy as a Factor to Strengthen the Scientific and Technological Development in Developing Countries</td>
<td>Nickté Basurto</td>
<td>Mexican Space Agency Mexico</td>
</tr>
<tr>
<td>15:45</td>
<td>Industry Participation in India’s Space Programme: Current Trends &amp; Perspectives for Developing Countries</td>
<td>Narayan Nagendra</td>
<td>Friedrich-Alexander-Universität Erlangen-Nürnberg/Dhruva Space India</td>
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</table>

**16:00  Poster Session**

*Coffee/Tea will be provided during the Poster Session*

**18:00  Adjourn**

**18:30  Departure to the UN/IAF Workshop Gala Dinner at Centro Cultural Refugio - Tlaquepaque**  
*Buses will be outside Hilton Hotel*
Saturday, 24 September 2016

Morning
08:30  Arrival, Registration

9:00  Session 2: Space Technology Capacity Building
Chairperson: Chris Welch, IAF/International Space University
Rapporteur: Rodrigo Dibildox, Mexican Space Agency

9:00  Capacity Building at the Regional Centre for Space Science and Technology Education for Latin America and the Caribbean (CRECTEALC)  
Sergio Camacho  
CRECTEALC  
Mexico

Mengu Cho  
Kyushu Institute of Technology  
Japan

9:30  International Satellite Program in Research and Education (INSPIRE): A new international academic program for collaborative small satellite development  
Amal Chandran  
University of Colorado at Boulder  
United States of America

9:45  Space Capacity Building in Mexico  
Rafael Torres  
Mexican Space Agency  
Mexico

10:00  University Space Engineering Consortium (UNISEC)-Global  
Rei Kawashima  
UNISEC-GLOBAL Secretariat  
Japan

10:15  Capacity Building in Human Space Technology – Utilising the Chinese Manned Space Station  
Luc St-Pierre  
United Nations Office for Outer Space Affairs

10:30  Capacity Building in Human Space Technology – Spaceflight Opportunities Using Dreamchaser  
Luciano Saccani  
Sierra Nevada Corporation  
United States of America

10:45  Coffee/Tea Break

11:15  Session 3: Disaster Management and Early Warning
Chairperson: Luc St-Pierre, United Nations Office for Outer Space Affairs
Rapporteur: Lourdes García, Mexican Space Agency

11:15  OOSA’s Work in Disaster Management/Emergency Response, UN-SPIDER-10  
Luc St-Pierre  
United Nations Office for Outer Space Affairs

11:30  Impacts of OOSA’s Technical Assistance Missions  
Xavier Rodriguez  
EIEGO  
Dominican Republic
11:45 Regional Coordination for Trans-boundary Hazards
Julio Castillo
Mexican Space Agency

12:00 Innovative Approach in Early Warning Systems - Tsunami Early Warning Using GPS Data
Gerald Bawden
National Aeronautics and Space Administration (NASA)
United States of America

12:15 FATMAP - Knowledge Management for Preparedness
Misha Gopaul
FATMAP
United Kingdom

12:30 Use of GIS Technology on Measuring Impacts of Flooding on People's Livelihood
Shantosh Karki
UNOCHA

12:45 Disaster Management of Remote Areas by Constellation of CubeSats
Giancarlo Santilli
University of Brasilia
Brazil

13:00 Lunch

Afternoon
14:00 Session 4: Space for Global Health and Education
Chairperson: Chiaki Mukai, Japan Aerospace Exploration Agency (JAXA)

14:00 NASA Education: Challenging Students to Become Our Future Innovators
Donald James
National Aeronautics and Space Administration (NASA)
United States of America

14:15 Space and Global Health
Ramesha Krishnamurthy
World Health Organization (WHO)

14:30 The Experience of CONAE on Early Warning and Response Space Applications - Operative tools on Health and Disasters
Camilo Rotela
CONAE
Argentina

14:45 Mexican Space Agency Approach to Space Medicine Development
Hugo Moreno
Mexican Space Agency

15:00 Use of Cubesats to Develop Space Biological Experiment Capacities
Angelica Meneses
Autonomous University of Morelos or
José Luis García
CINVESTAV, Monterey
Mexico
### Session 5: Space Solutions for Managing Growing Cities and Populations

**Chairperson:** Sanath Panawennage, Arthur C Clarke Institute for Modern Technologies, Sri Lanka  
**Rapporteur:** Camilo Guzman Gomez, University Sergio Arboleda, Colombia

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<th>Time</th>
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<th>Institution</th>
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<tbody>
<tr>
<td>15:15</td>
<td>Creating a Resilient City Using Space Data</td>
<td>Jeanne Holm</td>
<td>City of Los Angeles</td>
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<td></td>
<td></td>
<td></td>
<td>United States of America</td>
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<tr>
<td>15:30</td>
<td>Intelligent City Management - Based on Land Cover Feature Changes</td>
<td>Wei Sun</td>
<td>Twenty First Century Aerospace Technology Co. Ltd.</td>
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<td>China</td>
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<td>15:45</td>
<td>Precision Agriculture in Mexico</td>
<td>Gustavo Arriaga</td>
<td>Mexican Space Agency</td>
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<tr>
<td>16:00</td>
<td>Coffee/Tea Break</td>
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**16:30**  
Panel Discussion  
Building Capacity for Space Science, Technology and its Applications to Contribute to Economic, Social and Environmental Sustainable Development

**Panel participants**  
Moderator: Enrique Pacheco (AEM)  
Participants:  
- Sergio Camacho, CRECTEALC, Mexico  
- Mengu Cho, Kyutech, Japan  
- David Muñoz, Mexican Space Agency  
- Fernando Stancato, Embraer, Brazil  
- Luc St-Pierre, United Nations Office for Outer Space Affairs

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<tr>
<td>18:00</td>
<td>Adjourn</td>
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<tr>
<td>18:30</td>
<td>Cocktail Reception at the Solarium, Hilton Hotel</td>
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<tr>
<td>9:30</td>
<td>The IPSP Mexico Project: Earth Observation Products to Address Environmental Problems in the Bacalar Area</td>
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<td>9:45</td>
<td>The China-Brazil Earth Resources Satellites Program Revisited</td>
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<td>10:00</td>
<td>Remote Sensing Payload Developments for Cubesats</td>
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<td>10:15</td>
<td>Architecture for Monitoring Water Basins, Water Pollution and Illegal Deforestation in Guatemala</td>
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<td>10:30</td>
<td>Coffee/Tea Break</td>
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<td>11:00</td>
<td><strong>Session 7: Connectivity for Reducing Social Divide</strong></td>
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<td>11:00</td>
<td>ITU’s Contributions for Reducing Social Divide</td>
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<td>11:15</td>
<td>Present and Future of HUMSAT Programme: from Demonstration to Application</td>
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<td>11:30</td>
<td>Mexican Regulation for Small Satellites</td>
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<td>11:45</td>
<td>Connectivity from Research Institutions in Mexico</td>
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<td>12:00</td>
<td>Coordination of Mexico Conectado Program</td>
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</tbody>
</table>
12:15  **Special Presentations on KiboCube Programme**  
*Chairperson: Office for Outer Space Affairs*  
*Rapporteur: Fernando Aguado Agelet, University of Vigo, Spain*  

12:15  KiboCUBE – Supporting Space Technology Capacity Building in Developing Countries  
*Koichi Wakata*  
*Japan Aerospace Exploration Agency (JAXA)*  

12:30  1st Kenyan University Nano Satellite Precursor Flight (1KUNS-PF)  
*Mwangia Mbuthia*  
*University of Nairobi*  
*Kenya*  

12:45  Lunch  

**Afternoon**  

13:30  **Session 8: Observations and Recommendations and the Way Forward**  
*Chairperson and Moderator: Simonetta Di Pippo, Office for Outer Space Affairs*  
*Rapporteur: Narayan Nagendra, Dhruva Space, India*  

13:30  Round Table Discussion  

The round-table will link the Workshop to the preparations for UNISPACE+50 and how UNISPACE+50 will act as a catalyst to optimizing the future use of space-based solutions to contribute to addressing the World's challenges.  

**Moderator:**  
○ Simonetta Di Pippo, Office for Outer Space Affairs  

**Participants**  
○ Pascale Ehrenfreund, DLR  
○ David Kendall, Chairman COPUOS  
○ Ramesha Krishnamurthy, WHO  
○ Javier Mendieta, AEM  
○ Chiaki Mukai, JAXA  
○ Johann-Dietrich Woerner, ESA  

15:00  Discussion and Finalization of Workshop Observations and Recommendations and the Way Forward  
*Office for Outer Space Affairs*  

16:00  **Closing Session**  
*Master of Ceremony: Arturo Serrano, CICESE, and Office for Outer Space Affairs*  

16:00  Closing Remarks  
○ David Muñoz, AEM, Mexico  
○ Christina Giannopapa, International Astronautical Federation  
○ Simonetta Di Pippo, United Nations Office for Outer Space Affairs  

16:30  Adjourn
# Poster Session Presentations

**Chairperson: TBD**

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<th>Institution</th>
<th>Country</th>
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<tr>
<td>UN-01</td>
<td>Reuben</td>
<td>Umunna</td>
<td>Kyushu Institute of Technology</td>
<td>Japan</td>
<td>Data Application Driven Satellite Technology Development In Technology-</td>
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<td>disadvantaged Space Emerging Nations</td>
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<td>UN-02</td>
<td>Avid</td>
<td>Roman Gonzalez</td>
<td>Universidad de Ciencias y Humanidades (UCH)</td>
<td>Peru</td>
<td>The Importance of the Aerospace Technology in Peruvian Society</td>
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<tr>
<td>UN-03</td>
<td>Antonio</td>
<td>Cassiano Julio Filho</td>
<td>National Institute for Space Research (INPE)</td>
<td>Brazil</td>
<td>An Architecture for Dynamic Management of the SLE Services to Reduction the Cost</td>
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<td>of the Space Missions</td>
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<tr>
<td>UN-04</td>
<td>Camilo</td>
<td>Reyes Mantilla</td>
<td>Space Generation Advisory Council</td>
<td>Colombia</td>
<td>Collaboration and Policy for Environmental Security in the Latin American and</td>
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<td>Caribbean Region from the Space Perspective</td>
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<td>UN-05</td>
<td>Ronny</td>
<td>Nader</td>
<td>Ecuadorian Space Agency</td>
<td>Ecuador</td>
<td>Deployable Multi Panel Solar Array for Low Cost 1U Cubesat Missions</td>
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<tr>
<td>UN-06</td>
<td>Rogel Mari</td>
<td>Sese</td>
<td>Regulus SpaceTech/National Space Development Program</td>
<td>Philippines</td>
<td>Crafting a National Space Policy and Space Program for Developing Countries: An</td>
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<td>Ongoing Case Study of the Philippines</td>
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<td>UN-07</td>
<td>Natalia</td>
<td>Vargas-Cuentas</td>
<td>Universidad de Ciencias y Humanidades - UCH</td>
<td>Bolivia</td>
<td>The Importance of the Aerospace Technology in Bolivia</td>
</tr>
<tr>
<td>UN-08</td>
<td>Fernando</td>
<td>Stancato</td>
<td>Embraer</td>
<td>Brazil</td>
<td>Space application in Brazil: a tool for social-economic sustainable development</td>
</tr>
<tr>
<td>UN-09</td>
<td>Preethi</td>
<td>Panawennage</td>
<td>Arthur C Clarke Institute for Modern Technologies</td>
<td>Sri Lanka</td>
<td>Space Technology as an important Enabler of Sustainable Development: Perspectives of a Developing Nation - Sri Lanka</td>
</tr>
<tr>
<td>UN-10</td>
<td>Suresh</td>
<td>Bhattarai</td>
<td>Nepal Astronomical Society</td>
<td>Nepal</td>
<td>Space Science Outreach, Education and Research Practices: Impacts and</td>
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<td>Challenges in Nepal</td>
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<td>UN-11</td>
<td>Rushi</td>
<td>Ghadawala</td>
<td>Aryavarta Space Organization</td>
<td>India/Canada</td>
<td>Integrated Space Applications for Socio-Economical Analysis and resource</td>
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<td>planning (Pilot study - Gujarat, India)</td>
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<tr>
<td>UN-12</td>
<td>Milan</td>
<td>Mijovic</td>
<td>Law school, Union University Belgrade</td>
<td>Serbia</td>
<td>Establishment of Space agency in developing countries: reasons, challenges and justification (example of Serbia)</td>
</tr>
<tr>
<td>UN-13</td>
<td>Ganiyu</td>
<td>Agbaje</td>
<td>African Regional Centre for Space Science &amp; Technology Education</td>
<td>Nigeria</td>
<td>UN-OOSA Regional Centres for Space Science and Technology Education as Vehicles for Strengthening Regional Cooperation in integrated Space Technologies and Applications</td>
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<tr>
<td>UN-15</td>
<td>Ramirez</td>
<td>Sandra</td>
<td>Universidad Autonoma del Estado de Morelos</td>
<td>Mexico</td>
<td>Adaptation Strategies from Halophilic Bacteria help to Understand Habitability Aspects of the Solar System</td>
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<td>UN-16</td>
<td>Oswaldo</td>
<td>Garcia</td>
<td>Skysset</td>
<td>Mexico</td>
<td>Atmospheric Microorganism Sampling Probe</td>
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<td>UN-17</td>
<td>Sam</td>
<td>Harrison</td>
<td>International Space University</td>
<td>United Kingdom</td>
<td>Laws Relating to Space Resources to Ensure the Benefit for all Nations as well as Commercial Viability</td>
</tr>
<tr>
<td>UN-18</td>
<td>LeRoy</td>
<td>Larry</td>
<td>University of Costa Rica</td>
<td>Costa Rica</td>
<td>Successful Outreach Results of the National Workshop on Astronomy for Teachers: a Global Outreach Template for our Global Community</td>
</tr>
<tr>
<td>UN-19</td>
<td>Akagi</td>
<td>Hiroki</td>
<td>JAXA</td>
<td>Japan</td>
<td>Small Satellite Deployment Mission by using the Unique Capability of Kibo Exposed Facility</td>
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