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

AGENCIA ESPACIAL MEXICANA

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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

K. Higuchi  
President, International Astronautical Federation (IAF)

F.J. Mendieta Jiménez  
Director General, Mexican Space Agency (AEM)

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. Castiño  
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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

09:00 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 Remote sensing payload development for CubeSats
Julio Rolon
Instituto Politécnico Nacional
CITEDI Research Center
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
Samara State Aerospace University
Austria

11:35 UN/IAF Workshop Objectives and Programme
Werner Balogh
United Nations Office for Outer Space Affairs

12:00 Announcements and Practical Arrangements for the Workshop
Rafael Torres
Local Organizing Committee
Mexican Space Agency

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*

14:00  Space Contributions to Implementing the 2030 Agenda for Sustainable Development

**Jose Eduardo De La Torre Barcena**
*National Institute of Statistics and Geography (INEGI)*  
*Mexico*

14:15  Sustainable Development: Challenges and Opportunities for Space in Listening to the Field

**Stefano Ferretti**
*European Space Policy Institute (ESPI)*  
*Austria*

14:30  ESA Programmes Supporting Global Challenges

**Isabelle Duvaux-Béchon**
*European Space Agency (ESA)*

14:45  DLR Contributions to Face Global Challenges

**Christiane Lechtenboerger**
*German Aerospace Center (DLR)*

15:00  Making Space for Earth: NASA Earth Science Applications and Capacity Building for Development

**Danielle Wood**
*National Aeronautics and Space Administration (NASA)*  
*United States of America*

15:15  Cooperation in Space Activities in Latin America: a Need for Sustainable Development

**Camilo Guzman Gomez**
*University Sergio Arboleda*  
*Colombia*

15:30  The Space Policy as a Factor to Strengthen the Scientific and Technological Development in Developing Countries

**Nickité Basurto**
*Mexican Space Agency*  
*Mexico*

15:45  Industry Participation in India’s Space Programme: Current Trends & Perspectives for Developing Countries

**Narayan Nagendra**
*Friedrich-Alexander-Universität Erlangen-Nürnberg/Dhruva Space*  
*India*

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


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 Garcia, 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
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<th>Time</th>
<th>Session Title</th>
<th>Speaker</th>
<th>Institution/Location</th>
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<tbody>
<tr>
<td>11:45</td>
<td>Regional Coordination for Transboundary Hazards</td>
<td>Julio Castillo</td>
<td>Mexican Space Agency</td>
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<tr>
<td>12:00</td>
<td>Innovative Approach in Early Warning Systems - Tsunami Early Warning Using GPS Data</td>
<td>Gerald Bawden</td>
<td>National Aeronautics and Space Administration (NASA) United States of America</td>
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<tr>
<td>12:15</td>
<td>FATMAP - Knowledge Management for Preparedness</td>
<td>Misha Gopaul</td>
<td>FATMAP United Kingdom</td>
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<tr>
<td>12:30</td>
<td>Use of GIS Technology on Measuring Impacts of Flooding on People's Livelihood</td>
<td>Shantosh Karki</td>
<td>UNOCHA</td>
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<tr>
<td>12:45</td>
<td>Disaster Management of Remote Areas by Constellation of CubeSats</td>
<td>Giancarlo Santilli</td>
<td>University of Brasilia Brazil</td>
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<td>13:00</td>
<td>Lunch</td>
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<td>14:00</td>
<td><strong>Session 4: Space for Global Health and Education</strong></td>
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<td></td>
<td><strong>Chairperson:</strong> Chiaki Mukai, Japan Aerospace Exploration Agency (JAXA)</td>
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<td><strong>Rapporteur:</strong> Suresh Bhattarai, Space Generation Advisory Council/Nepal Astronomical Society, Nepal</td>
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<td>14:00</td>
<td>Space and Global Health</td>
<td>Ramesh Krishnamurthy</td>
<td>World Health Organization (WHO)</td>
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<td>14:15</td>
<td>NASA Education: Challenging Students to Become Our Future Innovators</td>
<td>Donald James</td>
<td>National Aeronautics and Space Administration (NASA) United States of America</td>
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<tr>
<td>14:30</td>
<td>Mexican Space Agency Approach to Space Medicine Development</td>
<td>David Muñoz</td>
<td>Mexican Space Agency</td>
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<td>15:00</td>
<td><strong>Session 5: Space Solutions for Managing Growing Cities and Populations</strong></td>
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<td></td>
<td><strong>Chairperson:</strong> Sanath Panawennage, Arthur C Clarke Institute for Modern Technologies, Sri Lanka</td>
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<td></td>
<td><strong>Rapporteur:</strong> Camilo Guzman Gomez, University Sergio Arboleda, Colombia</td>
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<tr>
<td>15:00</td>
<td>Creating a Resilient City Using Space Data</td>
<td>Jeanne Holm</td>
<td>City of Los Angeles United States of America</td>
</tr>
<tr>
<td>15:15</td>
<td>Intelligent City Management - Based on Land Cover Feature Changes</td>
<td>Wei Sun</td>
<td>Twenty First Century Aerospace Technology Co. Ltd. China</td>
</tr>
</tbody>
</table>
15:30 Precision Agriculture in Mexico
   Gustavo Arriaga
   Mexican Space Agency

15:45 Coffee/Tea Break

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: Gustavo Medina (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

18:00 Adjourn

18:30 Cocktail Reception at the Solarium, Hilton Hotel

Sunday, 25 September 2016

Morning
08:30 Arrival, Registration

9:00 Session 6: Environment and Biodiversity
   Chairperson: Christiane Lechtenboerger, DLR, Germany
   Rapporteur: Rogel Mari Sese, Regulus SpaceTech/National Space Development Program, Philippines

9:00 Group on Earth Observations
   Barbara Ryan
   Group on Earth Observations

   Remi Chandran
   National Institute for Environmental Studies (NIES), Japan

9:30 The IPSP Mexico Project: Earth Observation Products to Address Environmental Problems in the Bacalar Area
   Pasquale Iervolino
   University of Surrey, Surrey Space Centre
   United Kingdom

9:45 The China-Brazil Earth Resources Satellites Program Revisited
   Olavo de O. Bittencourt Neto
   Catholic University of Santos/IISL
   Brazil

10:00 Architecture for Monitoring Water Basins, Water Pollution and Illegal Deforestation in Guatemala
   Juan Esteban Gramajo Gonzalez
   International Space University
   France
10:15  
*Coffee/Tea Break*

**10:45  Session 7: Connectivity for Reducing Social Divide**  
Chairperson: Attila Matas, International Telecommunication Union (ITU)  
Rapporteur: Milan Mijovic, Union University Belgrade, Serbia

- **10:45**  
  ITU’s Contributions for Reducing Social Divide  
  **Attila Matas**  
  ITU

- **11:00**  
  Mexican Regulation for Small Satellites  
  **Estephania Flores**  
  Mexico

- **11:15**  
  Present and Future of HUMSAT Programme: from Demonstration to Application  
  **Fernando Aguado Agelet**  
  University of Vigo  
  Spain

- **11:30**  
  Space Technology Development at UNAM  
  **Gustavo Medina**  
  UNAM  
  Mexico

- **11:45**  
  Coordination of Mexico Conectado Program  
  **Carmen Rodriguez**  
  University of Guadalajara  
  Mexico

- **12:00**  
  Connectivity from Research Institutions in Mexico  
  **Jorge Preciado**  
  Center for Scientific Research and Higher Education at Ensenada (CICESE)  
  Mexico

**12:15  Special Presentations on KiboCube Programme**  
Chairperson: Werner Balogh, 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  
- Javier Mendieta, AEM  
- Chiaki Mukai, JAXA  
- Johann-Dietrich Woerner, ESA

15:00  
**Discussion and Finalization of Workshop**  
Observations and Recommendations and the Way Forward

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

16:00  
**Closing Remarks**  
- David Muñoz, AEM, Mexico  
- Christiane Lechtenboerger, 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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<tr>
<th>No.</th>
<th>First Name</th>
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<th>Institution</th>
<th>Country</th>
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<tbody>
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<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-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 of the Space Missions</td>
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<tr>
<td>UN-04</td>
<td>Camilo</td>
<td>Reyes Mantilla</td>
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<td>Colombia</td>
<td>Collaboration and Policy for Environmental Security in the Latin American and Caribbean Region from the Space Perspective</td>
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<tr>
<td>UN-05</td>
<td>Ronny</td>
<td>Antoine 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 Ongoing Case Study of the Philippines</td>
</tr>
<tr>
<td>UN-07</td>
<td>Natalia Indira</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>
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<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>
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<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>
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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 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>
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<tr>
<td>UN-13</td>
<td>Ganiyu</td>
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<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>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>
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<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>
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<td>UN-19</td>
<td>Akagi</td>
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<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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