



UNITED NATIONS
Office for Outer Space Affairs



**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



Co-sponsored by



**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. Lechtenboerger	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)
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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

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

*Nickté 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*
- 9:15 Capacity Building in Space Technology Development – The United Nations/Japan Long-term Fellowship Programme *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
IEIGO
Dominican Republic*

11:45	Regional Coordination for Trans-boundary Hazards	<i>Julio Castillo Mexican Space Agency</i>
12:00	Innovative Approach in Early Warning Systems - Tsunami Early Warning Using GPS Data	<i>Gerald Bawden National Aeronautics and Space Administration (NASA) United States of America</i>
12:15	FATMAP - Knowledge Management for Preparedness	<i>Misha Gopaul FATMAP United Kingdom</i>
12:30	Use of GIS Technology on Measuring Impacts of Flooding on People's Livelihood	<i>Shantosh Karki UNOCHA</i>
12:45	Disaster Management of Remote Areas by Constellation of CubeSats	<i>Giancarlo Santilli University of Brasilia Brazil</i>
13:00	<i>Lunch</i>	
<i>Afternoon</i>		
14:00	<u>Session 4: Space for Global Health and Education</u> <i>Chairperson: Chiaki Mukai, Japan Aerospace Exploration Agency (JAXA)</i> <i>Rapporteur: Suresh Bhattarai, Space Generation Advisory Council/Nepal Astronomical Society, Nepal</i>	
14:00	NASA Education: Challenging Students to Become Our Future Innovators	<i>Donald James National Aeronautics and Space Administration (NASA) United States of America</i>
14:15	Space and Global Health	<i>Ramesha Krishnamurthy World Health Organization (WHO)</i>
14:30	The Experience of CONAE on Early Warning and Response Space Applications - Operative tools on Health and Disasters	<i>Camilo Rotela CONAE Argentina</i>
14:45	Mexican Space Agency Approach to Space Medicine Development	<i>Hugo Moreno Mexican Space Agency</i>
15:00	Use of Cubesats to Develop Space Biological Experiment Capacities	<i>Angelica Meneses Autonomous University of Morelos or José Luis García CINVESTAV, Monterey Mexico</i>

- 15:15** **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
- 15:15 Creating a Resilient City Using Space Data *Jeanne Holm*
City of Los Angeles
United States of America
- 15:30 Intelligent City Management - Based on Land Cover Feature Changes *Wei Sun*
Twenty First Century Aerospace Technology Co. Ltd.
China
- 15:45 Precision Agriculture in Mexico *Gustavo Arriaga*
Mexican Space Agency
- 16:00 *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: 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*
- 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: Gunter Schreier, 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

9:15	Report on the United Nations/Kenya Conference on Space Technology and Applications for Wildlife Management and Protecting Biodiversity	<i>Remi Chandran National Institute for Environmental Studies (NIES), Japan</i>
9:30	The IPSP Mexico Project: Earth Observation Products to Address Environmental Problems in the Bacalar Area	<i>Pasquale Iervolino University of Surrey, Surrey Space Centre United Kingdom</i>
9:45	The China-Brazil Earth Resources Satellites Program Revisited	<i>Olavo de O. Bittencourt Neto Catholic University of Santos/IISL Brazil</i>
10:00	Remote Sensing Payload Developments for Cubesats	<i>Julio Rolon Garrido Instituto Politecnico Nacional CITEDI Research Center Mexico</i>
10:15	Architecture for Monitoring Water Basins, Water Pollution and Illegal Deforestation in Guatemala	<i>Juan Esteban Gramajo Gonzalez International Space University France</i>
10:30	<i>Coffee/Tea Break</i>	
11:00	<u>Session 7: Connectivity for Reducing Social Divide</u> <i>Chairperson: Attila Matas, International Telecommunication Union (ITU)</i> <i>Rapporteur: Milan Mijovic, Union University Belgrade, Serbia</i>	
11:00	ITU's Contributions for Reducing Social Divide	<i>Attila Matas ITU</i>
11:15	Present and Future of HUMSAT Programme: from Demonstration to Application	<i>Fernando Aguado Agelet University of Vigo Spain</i>
11:30	Mexican Regulation for Small Satellites	<i>Estephania Flores Instituto Federal de Telecomunicaciones (IFT) Mexico</i>
11:45	Connectivity from Research Institutions in Mexico	<i>Jorge Preciado Center for Scientific Research and Higher Education at Ensenada (CICESE) Mexico</i>
12:00	Coordination of Mexico Conectado Program	<i>Carmen Rodriguez (Invited) University of Guadalajara Mexico</i>

12:15	<u>Special Presentations on KiboCube Programme</u> <i>Chairperson: Office for Outer Space Affairs</i> <i>Rapporteur: Fernando Aguado Agelet, University of Vigo, Spain</i>	
12:15	KiboCUBE – Supporting Space Technology Capacity Building in Developing Countries	<i>Koichi Wakata</i> <i>Japan Aerospace Exploration Agency</i> <i>(JAXA)</i>
12:30	1st Kenyan University Nano Satellite Precursor Flight (1KUNS-PF)	<i>Mwangia Mbutia</i> <i>University of Nairobi</i> <i>Kenya</i>
12:45	<i>Lunch</i>	
<i>Afternoon</i>		
13:30	<u>Session 8: Observations and Recommendations and the Way Forward</u> <i>Chairperson and Moderator: Simonetta Di Pippo, Office for Outer Space Affairs</i> <i>Rapporteur: Narayan Nagendra, Dhruva Space, India</i>	
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.	<i>Moderator:</i> ○ <i>Simonetta Di Pippo, Office for Outer Space Affairs</i> <i>Participants</i> ○ <i>Pascale Ehrenfreund, DLR</i> ○ <i>David Kendall, Chairman COPUOS</i> ○ <i>Ramesha Krishnamurthy, WHO</i> ○ <i>Javier Mendieta, AEM</i> ○ <i>Chiaki Mukai, JAXA</i> ○ <i>Johann-Dietrich Woerner, ESA</i>
15:00	Discussion and Finalization of Workshop Observations and Recommendations and the Way Forward	<i>Office for Outer Space Affairs</i>
16:00	<u>Closing Session</u> <i>Master of Ceremony: Arturo Serrano, CICESE, and Office for Outer Space Affairs</i>	
16:00	Closing Remarks	○ <i>David Muñoz, AEM, Mexico</i> ○ <i>Christina Giannopapa, International Astronautical Federation</i> ○ <i>Simonetta Di Pippo, United Nations Office for Outer Space Affairs</i>
16:30	<i>Adjourn</i>	

Poster Session Presentations

Chairperson: TBD

No.	First Name	Last Name	Institution	Country	Poster Title
UN-01	Reuben	Umunna	Kyushu Institute of Technology	Japan	Data Application Driven Satellite Technology Development In Technology-disadvantaged Space Emerging Nations
UN-02	Avid	Roman Gonzalez	Universidad de Ciencias y Humanidades (UCH)	Peru	The Importance of the Aerospace Technology in Peruvian Society
UN-03	Antonio	Cassiano Julio Filho	National Institute for Space Research (INPE)	Brazil	An Architecture for Dynamic Management of the SLE Services to Reduction the Cost of the Space Missions
UN-04	Camilo	Reyes Mantilla	Space Generation Advisory Council	Colombia	Collaboration and Policy for Environmental Security in the Latin American and Caribbean Region from the Space Perspective
UN-05	Ronny Antoine	Nader	Ecuadorian Space Agency	Ecuador	Deployable Multi Panel Solar Array for Low Cost 1U Cubesat Missions
UN-06	Rogel Mari	Sese	Regulus SpaceTech/National Space Development Program	Philippines	Crafting a National Space Policy and Space Program for Developing Countries: An Ongoing Case Study of the Philippines
UN-07	Natalia Indira	Vargas-Cuentas	Universidad de Ciencias y Humanidades - UCH	Bolivia	The Importance of the Aerospace Technology in Bolivia
UN-08	Fernando	Stancato	Embraer	Brazil	Space application in Brazil: a tool for social-economic sustainable development
UN-09	Preethi	Panawennage	Arthur C Clarke Institute for Modern Technologies	Sri Lanka	Space Technology as an important Enabler of Sustainable Development: Perspectives of a Developing Nation - Sri Lanka
UN-10	Suresh	Bhattarai	Nepal Astronomical Society	Nepal	Space Science Outreach, Education and Research Practices: Impacts and Challenges in Nepal
UN-11	Rushi	Ghadawala	Aryavarta Space Organization	India/Canada	Integrated Space Applications for Socio-Economical Analysis and resource planning (Pilot study - Gujarat, India)

No.	First Name	Last Name	Institution	Country	Poster Title
UN-12	Milan	Mijovic	Law school, Union University Belgrade	Serbia	Establishment of Space agency in developing countries: reasons, challenges and justification (example of Serbia)
UN-13	Ganiyu	Agbaje	African Regional Centre for Space Science & Technology Education	Nigeria	UN-OOSA Regional Centres for Space Science and Technology Education as Vehicles for Strengthening Regional Cooperation in integrated Space Technologies and Applications
UN-14	Luis	Alfaro	El Salvador Aerospace Institute (ESAI)	El Salvador	The Necessity of Public-private Partnership Projects and Cooperation Development Framework to Execute Aerospace Initiatives in Central America
UN-15	Ramirez	Sandra	Universidad Autonoma del Estado de Morelos	Mexico	Adaptation Strategies from Halophilic Bacteria help to Understand Habitability Aspects of the Solar System
UN-16	Oswaldo	Garcia	Skysset	Mexico	Atmospheric Microorganism Sampling Probe
UN-17	Sam	Harrison	International Space University	United Kingdom	Laws Relating to Space Resources to Ensure the Benefit for all Nations as well as Commercial Viability
UN-18	LeRoy	Larry	University of Costa Rica	Costa Rica	Successful Outreach Results of the National Workshop on Astronomy for Teachers: a Global Outreach Template for our Global Community
UN-19	Akagi	Hiroki	JAXA	Japan	Small Satellite Deployment Mission by using the Unique Capability of Kibo Exposed Facility