



**24<sup>th</sup> UN/IAF Workshop on**  
**“Space Technology for Socio-Economic Benefits”**  
*with focus on global health and maritime applications*

**26 - 28 September 2014, Toronto, Canada**  
**in conjunction with the 65<sup>th</sup> International Astronautical Congress**

**Organized in cooperation with European Space Agency (ESA),  
International Academy of Astronautics (IAA), Committee on Space  
Research (COSPAR) and International Institute of Space Law (IISL)**

# **Programme**

**Venue of the Workshop:**      **Meeting Room 714A**  
**South Building**  
**Metro Toronto Convention Centre (MTCC)**  
**222 Bremner Boulevard, Toronto,**  
**Ontario, Canada M5V 3L9**

**Programme Committee of the Workshop (in alphabetical order):**

**J-C. Bigot (ESA)**

**S. Chernikov (UNOOSA)**

**T. Doi (UNOOSA)**

**C. Feichtinger (IAF)**

**J.-L. Fellous (COSPAR)**

**A. Ginati (ESA/IAA)**

**D. Kendall (CSA, Canada)**

**C. Lechtenbörger (DLR, Germany)**

**T. Masson-Zwaan (IISL)**

**P. Michel (PHA, Canada)**

**K-U. Schrogl (ESA/IAF-CLIODN)**

## Day 1, 26 September 2014

**Registration - 08:30 – 09:00**  
**Inaugural Session - 09:00 – 10:10**

09:00 – 09:30

**Welcome statements:**

- *Dr. David Kendall*, Canadian Space Agency, Canada
- *Mr. Kiyoshi Higuchi*, President, International Astronautical Federation (IAF)
- *Dr. Takao Doi*, Head of the UN Programme on Space Applications, United Nations Office for Outer Space Affairs (UN-OOSA)
- *Prof. Amnon Ginati*, Head of Department, European Space Agency (ESA)
- *Dr. Jean-Michel Contant*, Secretary General, International Academy of Astronautics (IAA)
- *Prof. Setsuko Aoki*, Member of the Board, International Institute of Space Law (IISL)

09:30 – 09:50

*Keynote Address I: Space Technology for Socio-Economic Benefits in the Canadian Context*

*Dr. David Kendall*,  
Canadian Space Agency,

09:50 – 10:10

*Keynote Address II: The Socio-Economic Impact of Integrated Space Applications*

*Prof. Amnon Ginati*  
ESA/IAA

**Coffee break -**

**10:10 – 10:40**

**Technical Session 1 -**

**10:40 – 13:00**

**Space technology for global health**

**Co-chairs: Dr. Pascal Michel, Public Health Agency, Canada and TBA**

**Rapporteur: TBA**

10:40 – 11:00

Global health and space - experiences in the framework of the UNISPACE III Action Team 6

*Dr. Pascal Michel*,  
Public Health Agency, Canada

11:00 – 11:20

The socio-economic benefits of space assets for eHealth in Africa

*Mr. Yuval Brodsky*,  
tinTree, South Africa

11:20 – 11:40

Humanitarian telemedicine - Potential Telemedicine Applications to Assist Developing Countries in Primary and Secondary Care

*Ms. Alexandra M. Bonnefoy*,  
European Space Policy  
Institute (ESPI), Austria

11:40 – 12:00

Indian Demography and Health Delivery System: Space Technology Usage and e-Health Initiatives

*Dr. Balbir Singh*,  
Manipal Institute of  
Technology, India

12:00 – 12:20

The IAA virtual Institute of Space Life Sciences: :envihab as the first institutional member

*Dr. Rupert Gerzer*,  
Institute of Aerospace  
Medicine, Germany

12:20 – 12:40

Telemedicine in Malaysia

*Dr. Mazlan Othman*,  
Academy of Sciences,  
Malaysia

12:40 – 13:00

Workshop discussion

**Lunch -**

**13:00 – 14:00**

**Technical Session 2 -**

**14:00 – 18:00**

**Space applications for tele-epidemiology (landscape epidemiology)**

**Co-chairs: Dr. Chiaki Mukai, JAXA, Japan and Ms. Stephanie Brazeau, Public Health Agency, Canada**

**Rapporteur: TBA**

14:00 – 14:20

Tele-epidemiology applications to public health in Canada

*Ms. Stephanie Brazeau*,  
Public Health Agency, Canada

14:20 – 14:40	CNES support to space-based services for public health: last issues in tele-epidemiology	<i>Ms. Murielle Lafaye,</i> CNES, France
14:40 – 15:00	Space medicine and satellite technology for public health	<i>Dr. Chiaki Mukai,</i> JAXA, Japan
15:00 – 15:20	NASA Earth Observation Systems and Applications for Health: Moving from Research to Operational End Users	<i>Mr. John Haynes,</i> NASA, USA
15:20 – 15:40	Telemedicine and International Law: international space law as a linchpin	<i>Prof. Setsuko Aoki</i> IISL/Keio University, Japan
<b>Coffee break - 15:40 – 16:10</b>		
16:10 – 16:30	Tele-epidemiology applied for Dengue operative system	<i>Dr. Camilo Hugo Rotela,</i> CONAE, Argentina
16:30 – 16:50	Innovative Approaches in Utilizing Space Assets for Disaster Management and Public Health	<i>Dr. Farhan M. Asrar</i> Canada
16:50 – 17:10	TBA	
17:10 – 17:30	TBA	
17:30 – 18:00	Workshop discussion	

## Day 2, 27 September 2014

### **Technical Session 3 – 09:00 – 13:00** **Space technology for maritime safety, communication and navigation**

**Co-chairs: Prof. Amnon Ginati, ESA/IAA and Mr. Peter Mabson, exactEarth, Canada**

**Rapporteur: TBA**

09:00 – 09:20	Space Technology for Maritime Applications	<i>Prof. Amnon Ginati,</i> IAA/ESA
09:20 – 09:40	European Maritime Safety Agency Programme (EMSA)	<i>Dr. Lendert Bal,</i> EMSA
09:40 – 10:00	Global Maritime Safety - needs and space-based solutions	<i>Mr. Boris Penné,</i> OHB-System, Germany
10:00 – 10:20	Operational Satellite AIS Programme	<i>Mr. C. Tobehn, S. Lascar and</i> <i>Mr. A. Schoenberg,</i> ESA
10:20 – 10:40	Satellite AIS - an important new tool for the Maritime Economy	<i>Mr. Peter Mabson,</i> exactEarth, Canada

**Coffee break - 10:40 – 11:10**

11:10 – 11:30	Satellite Navigation Technology: An Answer to Building Resilient Sea Ports and Maximizing Socioeconomic Benefits	<i>Mr. Faisal Khan,</i> SUPARCO, Pakistan
11:30 – 11:50	Improving Maritime Safety and Security through combined space- and ground based multi-mode surveillance capabilities	<i>Mr. Holger Klindt and Mr. Rolf Mueller,</i> Atlas Elektronik GmbH, Germany
11:50 – 12:10	Reflectometry for sea state monitoring	<i>Mr. Alex Da Silva Curiel</i> Surrey Satellite Technology Ltd, UK
12:10 – 12:30	Maritime Communications, evolution from connectivity to enablement	<i>Mr. Guy Sear,</i> INMARSAT
12:30 – 13:00	Workshop discussion	

**Lunch - 13:00 – 14:00**

### **Technical Session 4 - 14:00 – 18:00** **Space for ocean resources monitoring and management**

**Co-chairs: Dr. Guoqi Han, COSPAR/Fisheries and Oceans, Canada and Mr. Holger Klindt, Atlas Elektronik GmbH, Germany**

**Rapporteur: TBA**

14:00 – 14:20	<i>COSPAR solicited presentation</i> - Using satellite altimetry to observe storm surges	<b>Dr. Guoqi Han,</b> COSPAR/Fisheries and Oceans Canada
14:20 – 14:40	A multi-sensor and multi-information approach for future maritime domain awareness: Solutions towards a better marine environmental protection and maritime security improvement in coastal areas	<b>Mr. Peter Poete,</b> DLR, Germany
14:40 – 15:00	<i>COSPAR solicited presentation</i> - Sea ice, iceberg and oil spill tracking	<b>Dr. Leah Braithwaite,</b> COSPAR/Canadian Ice Service
15:00 – 15:20	Remote sensing & GIS combination approach to mapping sources of oil pollution in Vietnam Sea and East Sea	<b>Ms. Giang Thi Huong Tran,</b> HUMG, Viet Nam
15:20 – 15:40	Jurisdiction and control at sea: the case of evidence from satellites	<b>Dr. Marco Ferrazzani,</b> IISL/ESA
<b>Coffee break - 15:40 – 16:10</b>		
16:10 – 16:30	<i>COSPAR solicited presentation</i> - Using moderate resolution chlorophyll time series to study ecosystem functioning: A story of seabirds and green seas	<b>Dr. Gary Borstad,</b> COSPAR/ASL Environmental Sciences Inc., Canada
16:30 – 16:50	<i>COSPAR solicited presentation</i> - Monitoring of coastal crust motion	<b>Dr. Michael Craymer,</b> COSPAR/Natural Resources Canada
16:50 – 17:10	Near Real Time Applications for Maritime Situation Awareness Using Synthetic Aperture Radar in Open Ocean Areas	<b>Mr. Egbert Schwarz,</b> DLR, Germany
17:10 – 17:30	Spaceborne Synthetic Aperture Radar Remote Sensing - Capacity Building for Benefits of the Developing Countries	<b>Dr. Mohammed Dabboor,</b> Environment Canada
16:30 – 17:00	Workshop discussion	

**Day 3, 28 September 2014**

**Working Groups Meeting – 10:00 – 16:00**

Two Working Groups will be established to prepare for the Round Table discussion in addressing questions on critical issues/focal themes identified at the technical sessions

10:00 – 10:30	Introduction to the WG meeting and formation of Working Groups: - <b>WG1 “Space for Gbal Health”</b> Chaired by Dr. Mazlan Othman, Malaysia - <b>WG2 “Maritime Applications of Space Technology”</b> Chaired by Dr. Karl Doetsch, Canada (TBC)	UN-OOSA
10:30 – 16:00	Working Groups Meeting	In parallel

**Coffee break - 16:00 – 16:30**

**Round Table Discussion - 16:30 – 18:00**

**Moderator: Dr. Kai-Uwe Schrogl, Chairman of the Legal Subcommittee of COPUOS and Chairman of IAF-CLIODN**

A concluding Round Table discussion will be organized with participation of heads/top managers of space agencies and other relevant national/regional/international institutions and organizations from both space faring and non-space faring countries in order to establish a direct dialogue with the

Workshop participants on how space technologies and policies can contribute into sustainable economic development programmes in developing countries. The round table will also discuss issues and problems in participants' countries as well as will open an exchange of pragmatic ideas between panelists and participants of the Workshop.

**Round Table Panellists** (in alphabetical order): **Dr. Simonetta Di Pippo**, Director, United Nations Office for Outer Space Affairs (UNOOSA); **Prof. Amnon Ginati**, Head of Department, European Space Agency (ESA); **Dr. David Kendall**, Senior Executive Advisor to the President, Canadian Space Agency (CSA); **Dr. Pascal Michel**, Head of Division, Public Health Agency, Canada; **Dr. Chiaki Mukai**, JAXA, Japan; **Prof. Johann-Dietrich Wörner**, Chairman of the Executive Board, DLR, Germany.

**Concluding Session – 18:00 – 18:30**

**Co-chairs: Mr. Sergei Chernikov, UNOOSA and Dr. Kai-Uwe Schrogl, ESA and IAF/CLIODN**

18:00 – 18:20	Closing remarks	LOC, ESA, IAF, UN-OOSA, IAA
18:20 – 18:30	Briefing on the 2015 event	2015 LOC – Israel

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**Presentations scheduled for poster sessions,  
26 – 28 September 2014:**

<b>26 September, afternoon</b>	A Geospatial Technology Approach to Malaria Epidemiology in Federal Capital Territory, Abuja, Nigeria	<b>Mr. Abdul-Rahman Adegbite</b> , African Regional Centre for Space Science and Technology Education - English, Nigeria
<b>26 September, afternoon</b>	Space Application for Global Health: a Case Study of Telemedicine Project in Kenya	<b>Ms. Ogongo Joan Aoko</b> , Egerton University, Kenya
<b>26 September, afternoon</b>	GIS-based prediction of malaria risk in Jordan	<b>Dr. Mutaz Al-Alawi</b> , Ministry of Environment, Jordan
<b>26 September, afternoon</b>	How to prevent and control Chikungunya and Dengue in Mauritius	<b>Mr. Rajivisng Jheetoo</b> , Ministry of Health and Quality of Life, Mauritius
<b>26 September, afternoon</b>	Better Life for Rural Nigeria: the Nigerian Telemedicine Project	<b>Ms. Lami Ali-Fadiora</b> , ARCSSTE-E, Nigeria
<b>27 September, morning</b>	Geographies of health and climate change	<b>Mr. Abiola Kayode Olanrewaju</b> , University of Ibadan, Nigeria
<b>27 September, morning</b>	Primary Care Practice Development: A Relationship-Centered Approach	<b>Mr. Serifudeen Akinwale Wahab</b> , Osun State Management Hospital's Board, Nigeria
<b>27 September, morning</b>	Overview of legal issues pertinent to successful development and use of applications based on space technologies	<b>Dr. Catherine Doldirina</b> , IISL
<b>27 September, morning</b>	Satellite-based water control tags, for quality real-time monitoring, in human health, safety and welfare applications	<b>Prof. Kamal Besbes</b> , University of Monastir, Tunisia
<b>27 September, morning</b>	Citizen Astronomy	<b>Mr. Michael Paolucci</b> , Slooh LLC, USA

<b>27 September, afternoon</b>	The significance of efficient maritime applications for oil spills monitoring	<b>Ms. Agi Awa Kaira,</b> National Environment Agency, Gambia
<b>27 September, afternoon</b>	Follow the Degradation of the coastal Environment using Remote Sensing Techniques and Geographic Information Systems (GIS) for the western coastal region of Libya	<b>Mr. Mahmud Fitri,</b> Libyan Center For Remote Sensing & Space Science, Libya
<b>27 September, afternoon</b>	Fishing into Future: Satellite Technology based Monitoring, Control and Surveillance System for Pakistan Marine Sector	<b>Mr. Iftikhar Khan,</b> SUPARCO, Pakistan
<b>27 September, afternoon</b>	Socio-Economy and global health	<b>Mr. Ibrahim Khalil,</b> Maforke Youth Organisation, Sierra Leone
<b>27 September, afternoon</b>	Monitoring the Migration and Food Chains of Northern Communities in the Arctic with Space Assets	<b>Ms. Andrew Chee Hau Lee,</b> MEASAT Satellite Systems, Malaysia
<b>28 September, morning</b>	The sustainability of the Economies of Space	<b>Mr. Ndohmunhang Nickson Mbimbui and Mr. Terence Yusimbom,</b> GLOCECOHADIM Africa, Cameroon
<b>28 September, morning</b>	Open Innovation Platform	<b>Mr. Nithin Prabhakaran,</b> India
<b>28 September, morning</b>	National space program of Mongolia	<b>Ms. Oyuntsetseg Baasanjav,</b> Information Technology, Post and Telecommunications Authority, Mongolia
<b>28 September, morning</b>	Mapping and monitoring of urban conditions: a case study of Owerri, Imo State Southern Nigeria.	<b>Mr. Kingsley Ogochukwu Ukaegbu,</b> University of Technology Owerri, Nigeria
<b>28 September, morning</b>	Use of space technology in a disaster by volunteers	<b>Prof. YeanJoo Augustine Chong,</b> National University of Singapore, Singapore