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GLAC 2018
Global Space Applications Conference

FINAL PROGRAMME

21- 23 May 2018 | Montevideo, Uruguay

GLOBAL SPACE APPLICATIONS CONFERENCE (GLAC 2018)

www.glac2018.org

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ENERGIA

CONTENTS

1 WELCOME MESSAGES

1.1 Welcome Message from IAF

Dear Delegates,

It is with great delight that we welcome you to GLAC 2018 here in beautiful Montevideo, Uruguay. This is the first time ever that IAF takes one of its Global Conferences to South America and also the first time that the IAF organizes an event in Uruguay! GLAC 2018 is co-organized together with our colleagues from the Centro de Investigacion y Difuson Aeronautico-Espacial (CIDA-E), a member of the IAF since 1985 and one of nine IAF members from South America.

This conference will be a follow up on the previous GLAC 2014 which took place in Paris four years ago. A rich, comprehensive programme has been prepared for these three days, including several interesting plenaries and keynotes, a SGAC/IAF Seminar and many social events. Space applications have a very wide usage in today's world and in the coming days we will examine closer what impact space applications have on agriculture, climate change and natural resources. Further discussions will address the use of space data and how space applications thrive socioeconomic growth and advance risk management.

We will examine how space technologies are currently being used and also present an outlook to the future of space applications on a global scale, with a specific focus on emerging space nations and Latin America.

A big thanks to everyone who has been part of developing this Global Conference. We are confident that you will find the coming days to be both enriching and fruitful. Thank you for your participation and enjoy it to the fullest!

Jean-Yves Le Gall

President
International Astronautical Federation (IAF)

Pascale Ehrenfreund

Vice President for Communications, Publications and Global Conferences
International Astronautical Federation (IAF)

1.2 Welcome Message from CIDA-E

Dear Delegates and Participants,

The Global Space Applications Conference (GLAC 2018), co-organized by the International Astronautical Federation (IAF) and the Centro de Investigación y Difusión Aeronáutico-Espacial (CIDA-E), will be held in Montevideo, Uruguay, from 21 to 23 of May 2018.

Taking into account that this is the first Global Conference that will take place in Latin America and considering that Uruguay is mainly an agricultural country –a fact reflected on the topics to be dealt with- the Uruguayan Government has declared the event of National Interest.

The topic of Space Applications has already been considered in GLAC 2014, so GLAC 2018 will be the follow-up to the Paris conference.

Six Keynotes and Panels will take place. They will discuss about: 1) High level Panel on Space Applications for Economic Growth; 2) Space for More Effective Agriculture and Maritime; 3) Space for Integrated Risk Management; 4) Space Technologies for the Detection and Study of Climate Change; 5) The Preservation of Natural Resources Through Space; 6) Democratizing Space Data. Prior to the GLAC 2018, the SGAC/IAF Seminar, devoted to young students and professionals, will take place.

The programme is complemented by a Welcome Reception and a Gala Dinner.

The fact that this Conference is held in Montevideo will also allow local scientists, technicians, experts, young students and professionals, to learn about new developments in the area of space technology. As well, they will have the privilege to interact with leading international representatives from space agencies, industry and academy, who will find in this region opportunities to exchange experiences and explore the possibility of starting or deepening cooperative relationships.

We are confident that GLAC 2018 will be a unique opportunity to strengthen the links between Latin America and the rest of the world in the field of space applications.

We look forward to meeting you all in Montevideo at GLAC 2018!

Marta Gaggero

Chief Counsel
Centro de Investigación y Difusión
Aeronáutico-Espacial (CIDA-E)

1.3 Welcome Message from the IPC Co-Chairs

Dear Colleagues,

We welcome you to the 2nd Global Space Applications Conference – GLAC 2018 in Montevideo, Uruguay.

GLAC 2018 is a follow up of GLAC 2014 which was organised in Paris, France. In the last 4 years, a major event was the launch and operation of the Copernicus Constellation that has made available, almost every day, and for the entire globe, a huge amount of data, allowing services which were not possible before and drastically improving the performance of services which were already available. Another big change has been the advent of new players (e.g. Satellogic, Planet, OneWeb), which have heavily invested in the development and operation of megaconstellations. Such technology has increased the portfolio of space applications.

GLAC 2018 is taking place on May 21 – 23 and shall gather representatives of space agencies, industry, academia, and other stakeholders from all over the world making it a great instance to network and find collaboration opportunities. The topic is extremely relevant since space companies, ranging from startups to big corporations, are providing services for various sectors, including agriculture, farming, mining, fishing, transport, and energy.

Space based data have the enormous advantage of enabling services where a wide coverage and a frequent revisit time of the area of interest is needed. Such features are particularly relevant for certain areas of application, which are particularly important in Uruguay, like for example: agriculture and fishing, mitigation actions for natural disaster, and related post-disaster damage assessment. The other beauty of space applications is that are particularly suitable for industries (including micro and small enterprises) which are willing to explore new sectors with innovative technologies with a limited investment and in a relatively short time (very different from traditional space manufacturing business that requires huge investment and several years for design and project implementation).

The IAF Global Conference is an important opportunity for a country like Uruguay to show, at international level, its commitment to support the development of space applications. Hosting an event such as IAF Global Conference testifies that Uruguay is not alone in this mission but it is supported by other space agencies, such as the European one. The result of this type of collaboration is a mutual exchange of experience, expertise and network.

GLAC 2018 provides a platform to make countries aware of the benefits of space applications for their industries. The community will have the unique opportunity to be informed on the latest developments, at international level, in the space application domain. Moreover, the program of the conference has been built in such a way to offer enough time to network and exchange ideas. We hope you enjoy the conference!

Roberta Mugellesi-Dow

Chair of the Committee on Integrated Applications,
International Astronautical Federation (IAF),
Integrated Applications Manager,
European Space Agency (ESA)

GLAC 2018 IPC Co-Chair

Victoria Alonsopérez

Special Advisor to IAF President (Next Generation),
International Astronautical Federation (IAF),
Digital Innovation Lead,
Airbus Defense and Space

GLAC 2018 IPC Co-Chair

2 ORGANIZERS INFORMATION

2.1 The International Astronautical Federation (IAF)

Founded in 1951, the International Astronautical Federation is the world's leading space advocacy body with more than 340 members, 68 countries on six continents, including all leading agencies, space companies, societies, associations and institutes worldwide.

Following its theme "A space-faring world cooperating for the benefit of humanity", the Federation advances knowledge about space and fosters the development and application of space assets by advancing global cooperation.

As the organizer of the annual International Astronautical Congress (IAC), and other meetings on specific space-related topics, the IAF actively encourages the development of astronautics for peaceful purposes and supports the dissemination of scientific and technical information related to space.

International Astronautical Federation (IAF)

3 rue Mario Nikis
75015 Paris
France

Phone: +33 1 45 67 42 60
Fax: +33 1 42 73 21 20

Email: info@iafastro.org
Website: www.iafastro.org

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2.2 Centro de Investigación y Difusión Aeronáutico-Espacial (CIDA-E)

CIDA-E was created in 1975, as a state organization with the following objectives:

- to study and to promote the study of aeronautic and space issues;
- to disseminate the results of its researches and studies;
- to advice and collaborate with the Uruguayan Air Force, the Civil Aviation Authority and other public and private organizations linked with aerospace issues.

In addition the Center has promoted the approval and ratification of several aeronautic and space treaties:

- it has set up Uruguay´s position in these areas in many international organizations (COPUOS, CEA, ITU, ICAO, etc.) and under its auspices, Uruguay became a Member of COPUOS;
- it has published more than a hundred articles and it issues an annual review of worldwide circulation containing aeronautic and space articles written by national and foreign experts;

– it organizes regularly academic activities and participates in several national and international meetings (ICAO, IAF, IISL, LACAC, ALADA, etc.);
– it is member of IAF and IISL and it keeps cooperation relationships with many other institutes and organizations (INDAE, ALADA, Instituto Iberoamericano de Derecho Aeronáutico y Espacial y de la Aviación Comercial, etc.).

Centro de Investigación y Difusión Aeronáutico-Espacial (CIDA-E)
Colonia 959
C.P. 11.100 MONTEVIDEO URUGUAY

Email: itumail@itu.int Website: www.dinacia.gub.uy

3 PARTNER ORGANIZATION INFORMATION

3.1 Space Generation Advisory Council (SGAC)

The Space Generation Advisory Council in Support of the United Nations Programme on Space Applications (SGAC) is a global non-governmental, non-profit organization and network which aims to represent university students and young space professionals ages 18-35 to the United Nations, space agencies, industry, and academia.

Headquartered in Vienna, Austria, the SGAC network of members, volunteers and alumni has grown to more than 13 000 members representing more than 150 countries.

SGAC was conceived at UNISPACE III in 1999, whereby states resolved, as part of the Vienna Declaration, “To create a council to support the United Nations Committee on the Peaceful Uses of Outer Space, through raising awareness and exchange of fresh ideas by youth. The vision is to employ the creativity and vigour of youth in advancing humanity through the peaceful uses of space”.

Space Generation Advisory Council (SGAC)
c/o ESPI, Schwarzenbergplatz 6
1030 Vienna
Austria

Email: info@spacegeneration.org Website: http://spacegeneration.org

4 INTERNATIONAL PROGRAMME COMMITTEE

4.1 International Programme Committee Co-Chairs

Roberta Mugellesi-Dow
Chair of the Committee on Integrated Applications, International Astronautical Federation (IAF),
Integrated Applications Manager,
European Space Agency (ESA)

Victoria Alonsopérez
Special Advisor to IAF President (Next Generation),
International Astronautical Federation (IAF),
Digital Innovation Lead,
Airbus Defense and Space

4.2 International Programme Committee Members

Khaled Al Hashmi
UAE Space Agency, United Arab Emirates

Salem Al Marri
Mohammed Bin Rashid Space Centre (MBRSC), United Arab Emirates

Rodrigo Alonso Suarez
Solar Energy Laboratory CENUR Litoral Norte, Universidad de la República, Uruguay

Gabriella Arrigo
Italian Space Agency (ASI), Italy

Beatrice Barresi
European Space Agency (ESA), United Kingdom

Avi Blasberger
Israel Space Agency (ISA), Israel

Kammy Brun
China HEAD Aerospace Technology Group, China

Manuel Caldas
National Directorate of Telecommunications and Audiovisual Services (DINATEL), Ministry of Industry, Energy and Mines, Uruguay

Gilberto Camara
National Institute for Space Research (INPE), Brazil

Rosario Casanova
Faculty of Engineering, University of the Republic, Uruguay

Julio Cesar Castillo
Mexican Space Agency (AEM), Mexico

Simonetta Cheli
European Space Agency (ESA), France

Pablo de Leon
Department of Space Studies, University of North Dakota, United States

Felipe Duarte Santos
Physics and Environmental Sciences Department, University of Lisbon, Portugal

Driss El Hadani
Centre Royal de Télédétection Spatiale (CRTS), Morocco

Carmen Felix
Space Generation Advisory Council (SGAC), Mexico

Marco Ferrazzani
European Space Agency (ESA), France

D. Gowrisankar
Indian Space Research Organization (ISRO), India

James Graf
Jet Propulsion Laboratory (JPL), United States

Henry Hertzfeld
Space Policy Institute, John Washington University, United States

Jeanne Holm
University of California, United States

Rhoda S. Hornstein
National Aeronautics and Space Administration (NASA), United States

Geir Hovmork
Norwegian Space Centre, Norway

John Kimani
Kenya Space Agency, Kenya

Otto Koudelka
Graz University of Technology, Austria

Jean-Pascal Le Franc
Centre National d’Etudes Spatiales (CNES), France

Steven Lett
COSPAS-SARSAT, Canada

Denis Lyskov
Glavkosmos, Russian Federation

Stuart Martin
Satellite Applications Catapult, United Kingdom

Tanja Masson-Zwaan
Leiden University, The Netherlands

Attila Matas
International Telecommunication Union (ITU), Switzerland

Francisco Javier Mendieta
Mexican Space Agency (AEM), Mexico

Felix Menicocci
Comisión Nacional de Actividades Espaciales (CONAE), Argentina

S.O. Mohammed
National Space Research and Development Agency (NASRDA), Nigeria

Val Munsami
South African National Space Agency (SANSA), South Africa

Ronnie Nader
Ecuadorian Civilian Space Agency (EXA), Ecuador

Masami Onoda
Japan Aerospace Exploration Agency (JAXA), Japan

Anh Tuan Pham
Vietnam National Satellite Center (VNSC), Vietnam

Barbara Ryan
GEO Secretariat, Switzerland

Gunter Schreier
German Aerospace Centre (DLR), Germany

Kai-Uwe Schrogl
International Institute of Space Law (IISL), France

Brent Smith
National Oceanic and Atmospheric Administration (NOAA), United States

Anond Snidvongs
Geo-Informatics and Space Technology Development Agency (GISTDA), Thailand

Rafael Sotelo
National Directorate of Telecommunications and Audiovisual Services (DINATEL), Ministry of Industry, Energy and Mines, Uruguay

Luc St-Pierre
United Nations Office for Outer Space Affairs (UNOOSA), Austria

Petteri Taalas
World Meteorological Organization (WMO), Switzerland

Gonzalo Tancredi
Faculty of Sciences, Universidad del Uruguay, Uruguay

Guadalupe Tiscornia
GRAS Unit (Agro-climate and Information Systems Unit), National Institute of Agricultural Research (INIA Uruguay), Uruguay

Stephanie Wan
I.M Systems Group, United States

Yiran Wang
Chinese Society of Astronautics (CSA), China

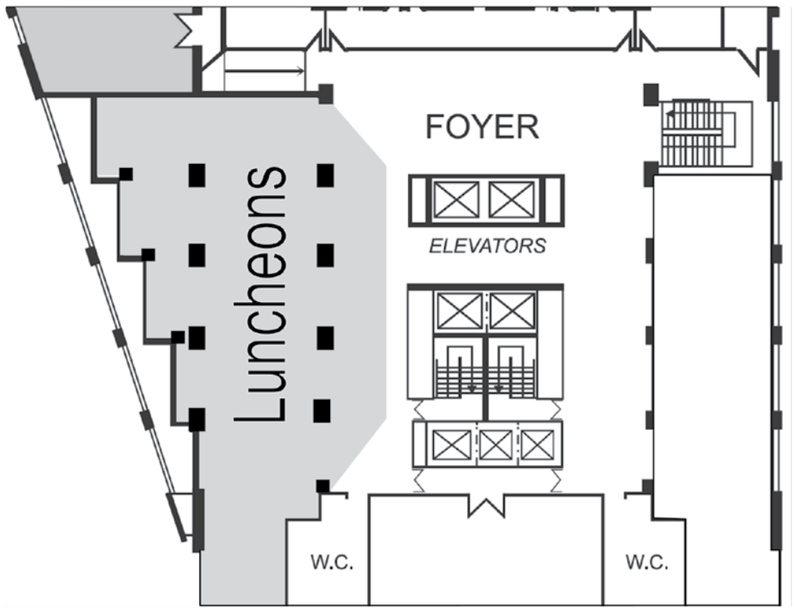
Charles Wooldridge
National Oceanic and Atmospheric Administration (NOAA), United States

5 PRACTICAL INFORMATION

5.1 Floor Plans

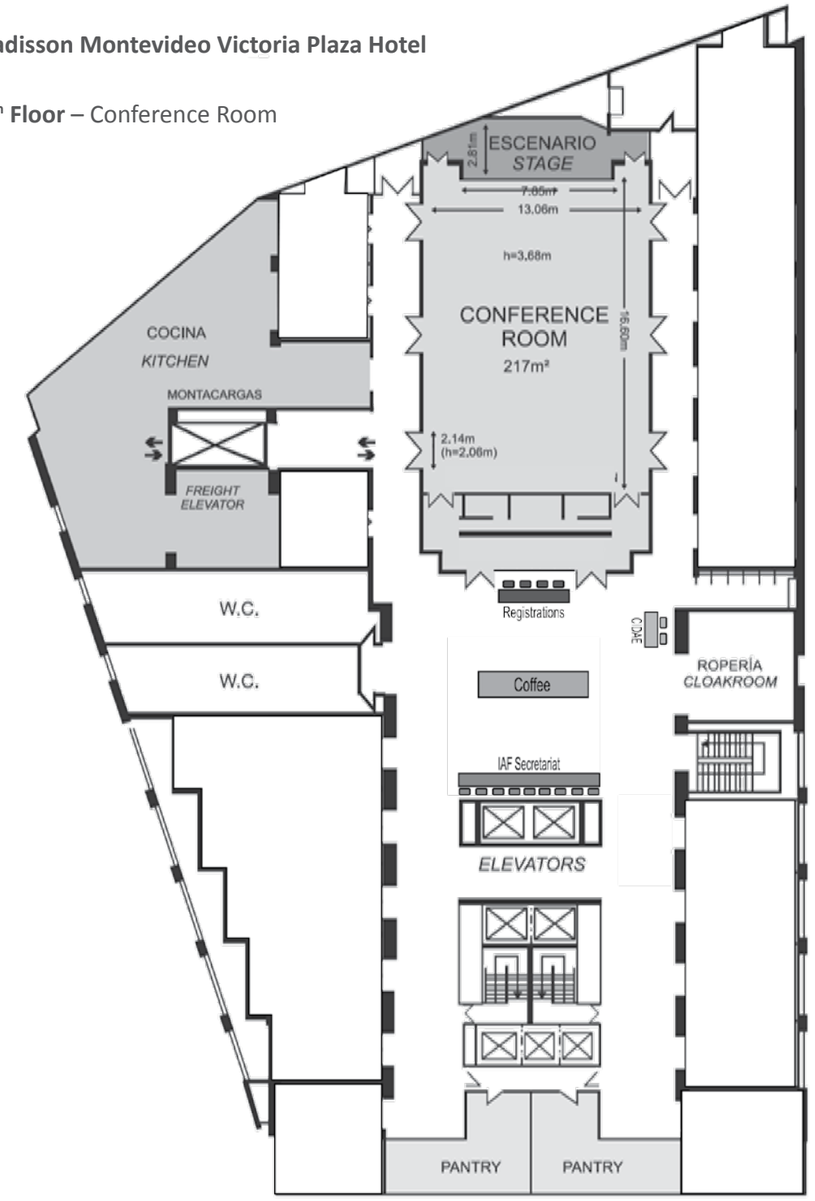
Radisson Montevideo Victoria Plaza Hotel

3rd Floor – Luncheons



Radisson Montevideo Victoria Plaza Hotel

4th Floor – Conference Room



5.2 Registration Location and Opening Hours

Registration

Location: 4th Floor Radisson Montevideo Victoria Plaza Hotel

Sunday 20 May, 14:00 - 17:00

Monday 21 May, 08:00 - 17:00

Tuesday 22 May, 08:00 - 17:00

Wednesday 23 May, 08:00 - 13:00

5.3 Useful information

About Uruguay

Uruguay is a captivating and charming country, located in the Southern Cone of the Americas. Officially referred to as the Eastern Republic of Uruguay, it is virtually bordered by rivers, and its name derives from its geographical location with respect to one of these. It occupies a land area of 176,215 km2, between Argentina and Brazil being the second smallest country in South America. A size that belies its great natural beauty and agricultural wealth. It boasts 650 kilometers of coastline stretching south from the River Plate to the Atlantic Ocean. These waters of beautiful biodiversity form coves and open beaches that happen to be some of the most famous and exclusive seaside resorts in Latin America. It is a country with a gently rolling landscape, with no major natural features which makes the omnipresence of nature even greater and the perfect balance with its infrastructure that allows you to travel across the country and enjoy it. It has a very pleasant climate, in the whole scope of the word, with a warm spring and summer and a gentle winter, characteristics which are also distinctive of its people, friendly, approachable and welcoming. Uruguay's genuineness surprises, its harmonious and entrepreneurial spirit, its ongoing commitment to a philosophy of life that seeks human balance, strengthening its path towards development always remaining people-centered.

How to get to Uruguay

By Air

The world's main airlines reach the country's international airports, with regional flights from and to Buenos Aires, Porto Alegre, Sao Paulo, Rio de Janeiro, Asuncion, Panama City, Santiago de Chile and Lima. In addition, international flights connect us with the United States and Europe. The main airports include the Carrasco International Airport (18 kilometers from downtown Montevideo). It was inaugurated in 2009 and is considered one of the most modern and attractive in the world. From there you have easy access with direct buses to Montevideo. It is also possible to hire a transfer, take a taxi or rent a car at some of the rental companies at the airport.

By River

Frequent ships and ferries connect Buenos Aires with Colonia, Carmelo and Montevideo, enabling the transit of both people and cars, while numerous marinas provide access to private vessels. The companies Buquebus and Colonia Express arrive at the port of Colonia from Buenos Aires and offer packages with a bus transfer to Montevideo or Punta del Este. The former (Buquebus) also travels to Montevideo directly from Buenos Aires. The company Cacciola connects Tigre (Argentina) and Carmelo (Uruguay), and also combines packages that complete the Buenos Aires-Montevideo trip by land.

Weather and language

Weather

Climate in Uruguay is temperate and humid (average in May 14 °C), with warm summers and quite even rainfalls throughout the year. Owing to the country's latitude (between 30ºS and 35ºS), there are four clearly cut seasons. However, there is a clear difference between the north and the south of the territory. The country's furthest northwest region (Artigas, Salto, Rivera) is considerably warmer, with average temperatures ranging between 18-19°C and an average annual rainfall of about 1400 mm (the northernmost area has a typical "temperate subtropical"behavior). Instead, the South and East (Montevideo, Maldonado, Rocha, Lavalleja) are cooler, with an average temperature of around 16° C and annual rainfalls around 1000 mm (these areas have more characteristics in common with the "temperate maritime").

Language

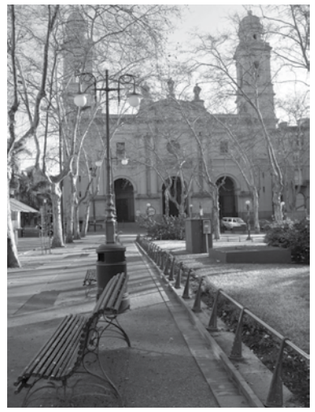
The language spoken in Uruguay is Spanish; on the borders, local people may be heard speaking Portuñol - a mixture of Spanish and Portuguese.

What papers do I need to travel to Uruguay?

Foreign travelers do not need to go through any special immigration procedures; they can enter the country just with a valid passport. Citizens of neighboring countries are only required to present their national identity cards. The papers of minors traveling on their own will be specifically checked to ensure compliance with the emigration rules of the country of origin, which usually include the written permission signed by both parents. To be on the safe side, you are recommended to check it at the country's diplomatic representations.

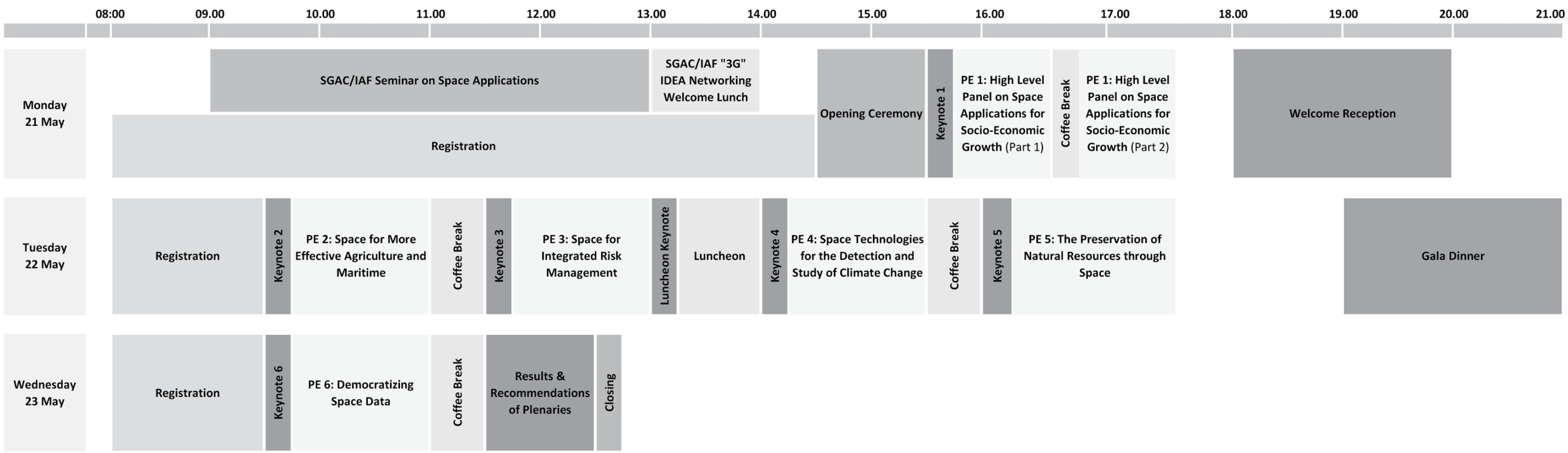
Do I need any vaccines to enter the country?

The country's sanitary conditions are very good. Being there no epidemics or endemic diseases, no special vaccines are needed or required to enter the country.



6 CONFERENCE PROGRAMME

6.1 Conference at a Glance



6.2 **Day-by-day** (Plenaries & Side Events)

Monday, 21 May

08:00 - 13:00 SGAC/IAF SEMINAR: Space Applications

Location: Conference Room, 4th Floor Radisson Montevideo Victoria Plaza Hotel

The inaugural SGAC/IAF Seminar: Space Applications is a half-day event for university students and young professionals in the South-American region. The aim of the event is to engage with the Uruguay and South American students and young professionals and provide an opportunity for capacity building and policy input on space applications.

Organized by: SPACE GENERATION ADVISORY COUNCIL; INTERNATIONAL ASTRONAUTICAL FEDERATION

PROGRAMME

08:00 - 08:30	Registration		
08:30 - 08:45	Introduction		***Victoria Alonsopérez*** *Digital Innovation Lead* Airbus Defense and Space Uruguay
	Welcome Remarks		***Jean-Yves Le Gall*** *President* International Astronautical Federation (IAF) France
08:45 - 09:00	Keynote 1 on Space Applications		***Gunter Schreier*** *Head Business Development – Deputy Director* German Remote Sensing Data Center (DFD) German Aerospace Center (DLR) Germany
09:00 - 09:15	Keynote 2 on Space Applications		***Christina Giannopapa*** *Head of Political Affairs Office* European Space Agency (ESA) France
09:15 - 09:30	Keynote 3 on Space Applications		***John Horack*** *Professor and Neil Armstrong Chair* The Ohio State University – College of Engineering Unites States
09:30 - 09:45	Keynote 4 on Space Applications		***Pascale Ehrenfreund*** *Chair of Executive Board* German Aerospace Center (DLR) Germany
09:45 - 10:00	Group Work Introduction		
10:00 - 12:30	Group 1: IoT and Space Applications		***Victoria Alonsopérez*** *Digital Innovation Lead* Airbus Defense and Space Uruguay
	Group 2: Legal and Policy Challenges of Space Applications		***Krystal Wilson*** *Director of Space Applications Programs* Secure World Foundation United States
	Group 3: Technology Development and Space Applications		***Beatrice Barresi*** *Applications Engineer* European Space Agency (ESA) United Kingdom
	Group 4: Regional Collaboration in Space Applications		***Nicolas Peter*** *Head of International Relations* German Aerospace Center (DLR) Germany
12:30 - 12:50	Recap of Group Work		One representative per working group
12:50 - 13:00	Closing Remarks		***Victoria Alonsopérez*** *Digital Innovation Lead* Airbus Defense and Space Uruguay

13:00 - 14:00 SGAC/IAF "3G" IDEA NETWORKING LUNCH

Location: 3rd Floor, Radisson Montevideo Victoria Plaza Hotel

The SGAC/IAF Seminar: Space Applications will be followed by a joint SGAC/IAF "3G" IDEA Networking Lunch.

Speakers:

Sergey Krikalev
Executive Director of Piloted Spaceflights
ROSCOSMOS
Russia

Krystal Wilson
Director of Space Applications Programs
Secure World Foundation
United States

14:30 - 15:30 OPENING CEREMONY

Location: Conference Room, 4th Floor Radisson Montevideo Victoria Plaza Hotel

The GLAC 2018 Opening Ceremony will see the participation of many prominent figures coming from the Uruguayan Ministries and the global Space sector.

The two co-organizing organizations will welcome the delegation thanks to Marta Gaggero, Chief Counsel of the Centro de Investigacion y Difusion Aeronautico-Espacial, and Jean-Yves Le Gall, President of the International Astronautical Federation.

Give the importance of the event, also the Uruguayan Ministry of the Defense, Jorge Menéndez, as well as representative from the Ministry of Livestock Agriculture and Fisheries will take the stand together with Pascale Ehrenfreund, head of the German Space Agency (DLR), also IAF Vice President of the IAF for Global Conferences.

IAF Executive Director, Christian Feichtinger, will be the Master of Ceremony for the whole event.

Speakers:

Amalia Álvarez
Director of Promotion of Agricultural Information Systems
Ministry of Livestock, Agriculture and Fisheries
Uruguay

Pascale Ehrenfreund
Vice President for Global Conferences
International Astronautical Federation (IAF)
Germany

Marta Gaggero
Chief Counsel
Centro de Investigacion y Difusion Aeronautico-Espacial (CIDA-E)
Uruguay

Jean-Yves Le Gall
President
International Astronautical Federation (IAF)
France

Jorge Menéndez
Minister of Defense
Uruguay

Master of Ceremonies: Christian Feichtinger
Executive Director
International Astronautical Federation (IAF)
France

15:30 - 15:45 KEYNOTE 1: Strategic Partnerships for Socio-Economic Growth

Location: Conference Room, 4th Floor Radisson Montevideo Victoria Plaza Hotel

Open innovation: challenges and opportunities in Uruguay

Innovation has an important role fostering sustainable and inclusive economic growth. Innovation policies are key elements promoting productive transformations, catching-up processes and structural change. Following an historical perspective, the presentation will stress the evolution, scope and effects that innovation activities have in contemporary societies and will present different innovation types. In addition, it will analyse the importance of strategic partnerships as key instruments to support economic growth. In this regard, Open Innovation plays a fundamental role in disseminating knowledge, in creating new sources for innovative opportunities as well as additional cooperation possibilities. The presentation will address the importance of Open Innovation, its core framework conditions and Uruguay´s main innovation highlights.

Speaker:

Fernando Brum
President
National Research and Innovation Agency (ANII)
Uruguay

15:45- 17:30 PLENARY 1: High Level Panel on Space Applications for Socio-Economic Growth

Location: Conference Room, 4th Floor Radisson Montevideo Victoria Plaza Hotel

Since the opening of the space frontier, with the launch of Sputnik in 1957, Space has become a utility in our daily lives. Like that initial Sputnik launch, Neil Armstrong's walk on the Moon, and Hubble Space Telescope Pictures, Space still brings great wonder and inspiration, incredible technical and human achievements, and tantalizes our imaginations. However, and perhaps more importantly, space has also become an essential and foundational ingredient for civilization. In short, space applications are fundamental contributors to stable societies, and to the growth of these societies, their economies, and the well-being of their citizens. Whether through telecommunications, remote sensing, GPS navigation, or other space applications, we simply cannot imagine today's world without these and many other space applications. The distribution of space applications and their impacts, however, are unequal - as is the distribution of economic, social, educational, and quality-of-life opportunities around the world - creating both challenges and opportunities for economic and sisal growth around the world. This two-part panel discussion will address some of the key drivers of space applications in today's developed and emerging economies, and articulate how space is being used around the world for socio-economic growth today, and in the future. We particularly focus particularly on the application of space for positive outcomes in Central and South America, and cultivate discussion on innovative partnerships and collaborations to help further the benefits of space applications for socio-economic growth of all people everywhere.

Moderator:

John Horack
Professor and Neil Armstrong Chair
The Ohio State University – College of Engineering
United States

Speakers:

PART 1 15:45 - 16:30

Roberto Battiston
President
Italian Space Agency (ASI)
Italy

Raul Kulichevsky
Deputy Executive and Technical Director
Comisión Nacional de Actividades Espaciales (CONAE)
Argentina

Jean-Yves Le Gall
President
Centre National d'Etudes Spatiales (CNES)
France

Fernanda Lima

Space Applications Officer
Brazilian Space Agency
(AEB)
Brazil

Francisco Javier Mendieta Jiménez

General Director
Mexican Space Agency
(AEM)
Mexico

16:30 - 16:45 COFFEE BREAK

Location: Foyer, 4th Floor Radisson Montevideo Victoria Plaza Hotel

PART2 16:45 - 17:30

Pascale Ehrenfreund

Chair of Executive Board
German Aerospace Center
(DLR)
Germany

Sergey Krikalev

Executive Director of Piloted Spaceflights
ROSCOSMOS
Russia

Valanathan Munsami

Chief Executive Officer
South African National
Space Agency (SANSA)
South Africa

Guillermo Salvatierra

CEO & CTO
FRONTEC S.A
Argentina

Kai-Uwe Schrogl

Chief Strategy Officer
European Space Agency
(ESA)
France

18:00 - 20:00 WELCOME RECEPTION

Location: 3rd Floor, Radisson Montevideo Victoria Plaza Hotel

Sponsored by:

CHIVAS
WIN THE RIGHT WAY

UruguayNatural

Tuesday, 22 May

09:30 - 09:45 KEYNOTE 2: Space for More Effective Agriculture and Maritime

Location: Conference Room, 4th Floor Radisson Montevideo Victoria Plaza Hotel

With more than 7 billion people in our World since 2011, increasing by 1 billion every 12 years, it's impossible to ignore the question: How are we going to produce food and energy for so many people? Today we can start to see an answer: Smarter use of natural resources of all kinds. In our industry we believe satellites, located at a vantage observation point, are an excellent source of information for taking more accurate decisions. Soon Satellogic will be contributing close to 100 TB of imagery daily, and together with other participants in the industry, we'll be remapping the World more than daily. Now the question has escalated one or two steps: How are we going to handle so much information and what are we going to do with it? In this presentation I'm going to show you a bit of the framework we built to work with all this information, and more interesting, some concrete cases where we've been working close to some of our customer to solve real problems using both our multispectral and our hyperspectral imagery, sometimes fused with data from other sensors.

Speaker:

Gerardo Richarte

Co-founder and CTO
Satellogic
Argentina

09:45 - 11:00 PLENARY 2: Space for More Effective Agriculture and Maritime

Location: Conference Room, 4th Floor Radisson Montevideo Victoria Plaza Hotel

How can many different types of advanced technology be successfully employed to generate more productive and more environmentally conscious returns in the farming and maritime arenas? Given the world's growing population and concomitant demands for more food, how can we use space based assets to contribute to a viable, cost-effective and socially responsible solutions set?

Over the past ten years, high resolution imagery has gone from a specialized product used primarily by governments to a commodity. Advances in the imagery field benefit both farmers and fishermen. For example, data extracted from an image of an agriculture field can be used to increase the harvest while minimizing environmental concerns, such as nitrogen and phosphorus run-off.

Advances in technology together with the boom of Internet of Things have also made ground sensors more accessible. Can we create hybrid technology solutions that combine sensors, ground based networks and satellite constellations to monitor agriculture, farming, and maritime?

Moderator:

Victoria Alonsopérez
Digital Innovation Lead
Airbus Defense and Space
Uruguay

Speakers:

Jairo Becerra
Director of the Socio-legal Research Centre
Catholic University of Colombia
Colombia

Gustavo Crespi
Lead Specialist, Competitiveness and Innovation Division
Inter-American Development Bank
Argentina

Christina Giannopapa
Head of Political Affairs Office
European Space Agency (ESA)
France

John Njoroge Kimani
Lead Scientist/National Coordinator
Kenya Space Agency
Kenya

Guadalupe Tiscornia
Researcher
National Institute of Agriculture Research (INIA)
Uruguay

11:00 - 11:30 COFFEE BREAK

Location: Foyer, 4th Floor Radisson Montevideo Victoria Plaza Hotel

11:30 - 11:45 KEYNOTE 3: Space for Integrated Risk Management

Location: Conference Room, 4th Floor Radisson Montevideo Victoria Plaza Hotel

The Mexican Space Agency is one of the most recent space agencies established in the world. Created in 2010 by Presidential Decree, started operations in 2012. However, a relevant budget and authorization for hiring staff was released until 2013.

The involvement of the Mexican Space Agency in the risk management sector within the country, has been a big challenge for AEM in terms of its contribution to the national security.

The aim of my presentation is to demonstrate how Mexico is getting involved and experiencing significant growth in the space sector, including the use of space technology for the integrated risk management being a recently stablished agency, and considering all the shortcomings that are involved in such situation. This could be an example for other emerging space agencies or for countries planning to create their own space agency.

Speaker:

Julio Castillo
Director of Space Security
Mexican Space Agency (AEM)
Mexico

11:45 - 13:00 PLENARY 3: Space for Integrated Risk Management

Location: Conference Room, 4th Floor Radisson Montevideo Victoria Plaza Hotel

Space technologies can contribute to a range of services as risk analysis, modelling and risk mitigation strategies in many areas helping companies in their decision making. Earth Observation satellite can provide images that can be used for example to detect impact of flooding events or any major disaster; GNSS can be used for tracking the position of people or vehicles that are equipped with a receiver; satellite communication can assist data exchange when terrestrial communication is not available. The session will offer several examples covering a variety of aspects, such as risk scenarios, security, legal, CBRNe threats, etc. Identifying and mitigating low-probability yet high-impact events can save lives, resources and environmental disruption.

Moderator:

Roberta Mugellesi-Dow
Integrated Applications Manager
European Space Agency (ESA)
United Kingdom

Speakers:

Beatrice Barresi
Applications Engineer
European Space Agency (ESA)
United Kingdom

María de las Mercedes Esquivel de Cocca
Professor of Aeronautic and Space Law
University of Salvador
Argentina

John Horack
Professor and Neil Armstrong Chair
The Ohio State University – College of Engineering
United States

Vance Y. Hum
Chief Executive Officer
I.M. System Group, Inc. (IMSG)
United States

Oleg Ventskovsky
Director, European Representation
Yuzhnoye SDO
Ukraine

13:00 - 13:15 LUNCH KEYNOTE: Living Under The South Atlantic Magnetic Anomaly

Location: Conference Room, 4th Floor Radisson Montevideo Victoria Plaza Hotel

The Earth's magnetic field can be approximated as an intense magnetic dipole, located in the center of the Earth and rotated 10deg with respect to the axis of rotation. However, there are two other effects: i) the dipole is displaced towards Southeast Asia; ii) the field has a quadrupole component.

The map of the terrestrial field presents three peaks of high intensity located in: North of Canada, Antarctica and Siberia. And a minimum of intensity in the region known as the South Atlantic Magnetic Anomaly (SAMA or SAA), located close to the triple border between Argentina, Brazil and Paraguay.

The low intensity of the magnetic field in the SAMA region causes the Van Allen belts to approach the Earth's surface at a lower altitude than in the rest of the planet; producing an intense flow of atomic particles at heights of a few hundred kilometers. This affects the electronics of artificial satellites when they pass through this region. The consequences of this phenomenon for the living beings that inhabit the SAMA region, still requires a deeper study.

Speaker:

Gonzalo Tancredi
Professor
University of Uruguay
Uruguay

13:15 - 14:00 LUNCH

Location: 3rd Floor, Radisson Montevideo Victoria Plaza Hotel

14:00 - 14:15 KEYNOTE 4: Space Technologies for the Detection and Study of Climate Change

Location: Conference Room, 4th Floor Radisson Montevideo Victoria Plaza Hotel

The UAE Space Programme and its growing activities in imagery and climate change detection keynote will focus on the development of the overall National Space Programme at the Mohammed Bin Rashid Space Centre, and then will focus on applications for environment and climate change detection of the DubaiSat-2 imaging satellite currently in orbit, the government efforts in the UAE to promote space data to support decision makers and the soon to be launched KhalifaSat and DMsat satellites which will continue the UAE's efforts to provide useful data for climate change detection.

Speaker:

Salem Al Marri
Assistant Director General for Scientific and Technical Affairs
Mohammed Bin Rashid Space Centre (MBRSC)
United Arab Emirates

14:15 - 15:30 PLENARY 4: Space Technologies for the Detection and Study of Climate Change

Location: Conference Room, 4th Floor Radisson Montevideo Victoria Plaza Hotel

Satellites are vital tools to help understand the mechanisms of climate change, in order to mitigate its effects and help societies devise coping strategies. Thanks to their global observations and the continuity of their measurements, they provide time series of extremely valuable data, which are the basis for several international climate-related programmes. Out of the 50 essential climate variables or ECVs defined by the Global Climate Observing System (GCOS), 26 can only be measured from space.

Tackling climate change and its impacts is a top priority as it was underlined during the One Planet Summit that brought together in Paris last December a great number of decision-makers from around the world with a view to thinking about how we can innovate to sustain and step up the pace of our efforts to tackle climate change and its impacts. It was proposed to work towards the creation of a Space Climate Observatory (SCO) as a response to climate change and its societal impacts. International cooperation is obviously a fundamental element of this endeavour. This panel discussion will address some key examples on how space technologies are useful to tackle the impacts of climate change both from institutional, academic and private actors. Il will focus on the role of international cooperation to address this challenge.

Moderator:

Jean-Pascal Le Franc
Director of Planning, International Relations and Quality
Centre National d'Etudes Spatiales (CNES)
France

Speakers:

Salem Al Marri
Assistant Director General for Scientific and Technical Affairs
Mohammed Bin Rashid Space Centre (MBRSC)
United Arab Emirates

Maria del Lujan Flores
Legal Advisor
Ministry of Foreign Affairs
Uruguay

Otto Koudelka
Head of Institute of Communication Networks and Satellite Communications
Graz University of Technology (TU Graz)
Austria

Sias Mostert
Chief Executive Officer
SCS Aerospace Group
South Africa

Gustavo Necco
Professor
Institute of Mechanics of Fluids and Environmental Engineering – University of the Republic
Uruguay

Javier Preciozzi
Associate Professor
University of the Republic
Uruguay

15:30 - 16:00 COFFEE BREAK

Location: Foyer, 4th Floor Radisson Montevideo Victoria Plaza Hotel

16:00 - 16:15 KEYNOTE 5: The Preservation of Natural Resources through Space

Location: Conference Room, 4th Floor Radisson Montevideo Victoria Plaza Hotel

The exploitation of non-renewable and renewable resources imposes threats and challenges to the environment and our society. The global sustainable development goals (SDG) provide a framework on how resources shall be exploited and how we can use observation technologies for monitoring the environment and the interactions of mankind with nature. Resources need also to be secured from being damaged by natural disasters. Hence, monitoring and mapping of disasters on a global scale and with regional partners (e.g. South America) is likewise of importance. Earth observation data, giving information on the exploitation, transport and use of these resources should therefore be available on a full, open and free basis, as implemented by large Earth Observation Programs such as Copernicus. New approaches in big data analysis now allow making benefit from this avalanche of new and free Earth observation data, also for resource mapping.

Speaker:

Gunter Schreier

Head Business Development – Deputy Director
German Remote Sensing Data Center (DFD)
German Aerospace Center (DLR)
Germany

16:15 - 17:30 PLENARY 5: The Preservation of Natural Resources through Space

Location: Conference Room, 4th Floor Radisson Montevideo Victoria Plaza Hotel

The session will focus on the added-value of space-based data to support a sustainable use and management of natural resources. The definition of natural resources is maintained broad as it includes: hydrocarbons but also water bodies, soil, atmosphere etc. The session will offer practical examples of projects where space is pivotal for monitoring, exploiting and preserving natural resources. These examples can cover a variety of domains, such as safety, energy, environment, transportation, health, etc. The objective of each project has been tailored according to real needs of the user communities.

Moderator:

Beatrice Barresi

Applications Engineer
European Space Agency (ESA)
United Kingdom

Speakers:

Adnan Alrais

Director of Remote Sensing
Mohammed Bin Rashid Space Centre (MBRSC)
United Arab Emirates

Alejandro de Fuentes Talice

Professor of Aeronautic and Space Law
Aeronautic Military School (EMA)
Uruguay

Andy Lucas

Managing Director
Property Assure
United Kingdom

Isao Kotani

Deputy Director
Japan Aerospace Exploration Agency (JAXA) (Washington Office)
United States

19:00 - 21:00 GALA DINNER

Location: Restaurant Arcadia, 24th floor of the Radisson Montevideo Victoria Plaza Hotel.

Wednesday, 23 May

09:30 - 09:45 KEYNOTE 6: Democratizing Space Data

Location: Conference Room, 4th Floor Radisson Montevideo Victoria Plaza Hotel

The keynote focuses on the historical milestones that have lead to wider availability of space data, with particular focus on satellite Earth observation data, and highlights from other areas where access to data is seen as particularly important - government and research data generally. Alongside various activities and initiatives undertaken by space actors and beyond, it presents an overview of regulatory steps that were and are being made by the international community and individual countries to provide a legal basis for free and unrestricted access to and use of space data. It provides an insight as to the meaning and interpretation of free and open access and use of data as opposed to restricted frameworks in place. In addition, challenges related to wide availability of large amounts of data are highlighted and discussed.

Speaker:

Catherine Doldirina
Independent Consultant
International Institute of Space Law (IISL)
Italy

09:45 - 11:00 PLENARY 6: Democratizing Space Data

Location: Conference Room, 4th Floor Radisson Montevideo Victoria Plaza Hotel

Today's space systems provide enormous volumes of data. Data sets have become so large or complex that traditional data processing applications are inadequate. Particularly Earth Observation with the most recent high-resolution satellites and constellations of small remote sensing satellites are key elements of Big Data. ESA's Earth Observation download volume by 2022 is estimated to reach 50 Petabytes.

Space systems are the only ones that can offer communications anywhere and any time - for the Internet of Things, Industry 4.0 and Machine to Machine Communications. The integration of 5G and satellite communication systems is a prerequisite for autonomous driving. Data availability, privacy and security become hence extremely important.

The collection and processing of data in large quantities raises issues of the protection of privacy. International human rights documents, such as the UN Covenant on Civil and Political Rights and the European Convention on Human Rights provide for the respect for everyone's private and family life, home and correspondence.

Free access to Space data is vital in particular for developing nations. More recently, discussions have been arising with respect to free data access on the one hand and business models taking profit of Space data funded by the public.

The panel will discuss Space applications, Big Data issues and the associated challenges both in the legal framework and from the technical point of view.

Moderator:

Otto Koudelka
Head of Institute of Communication Networks and Satellite Communications
Graz University of Technology (TU Graz)
Austria

Speakers:

Pablo Brenner
Founder
Collokia
Uruguay

Roger Hsu
Head of Satellite Application Development
HEAD Aerospace Technology Co.
Netherlands

Martin Rodriguez de los Santos
Data Center Pre-sales Consultant
Antel
Uruguay

Krystal Wilson
Director of Space Applications Programs
Secure World Foundation
United States

11:00 - 11:30 COFFEE BREAK

Location: Foyer, 4th Floor Radisson Montevideo Victoria Plaza Hotel

11:30 – 12:30 RESULTS AND RECOMMENDATIONS OF PLENARIES

Location: Conference Room, 4th Floor Radisson Montevideo Victoria Plaza Hotel

The moderators of the different panels will come together to participate in this final phase of GLAC 2018 by reporting what discussed in the previous panels. Not only they will illustrate the outcome of the panels, but they will also outline what we could expect in the sector of Space Application in the next few years, giving the public their precious insight on the evolution of such an interesting field.

Speakers:

John Horack
Professor and Neil Armstrong Chair
The Ohio State University – College of Engineering
United States

Victoria Alonsopérez
Digital Innovation Lead
Airbus Defense and Space
Uruguay

Roberta Mugellesi-Dow
Integrated Applications Manager
European Space Agency (ESA)
United Kingdom

Jean-Pascal Le Franc

Director of Planning, International Relations and Quality
Centre National d'Etudes Spatiales (CNES)
France

Beatrice Barresi

Applications Engineer
European Space Agency (ESA)
United Kingdom

Otto Koudelka

Head of Institute of Communication Networks and Satellite Communications
Graz University of Technology (TU Graz)
Austria

12:30 - 12:45 CLOSING REMARKS

Location: Conference Room, 4th Floor Radisson Montevideo Victoria Plaza Hotel

The Closing Remarks will mark the end of the three days conference, and will comprise a final intervention by Marta Gaggero, Chief Counsel of the Centro de Investigacion y Difusion Aeronautico-Espacial and Otto Koudelka, IAF Vice President for Technical Activities, who will introduce to the public the theme and location of the next IAF Global Conference.

Speakers:

Marta Gaggero

Chief Counsel
Centro de Investigacion y Difusion Aeronautico-Espacial (CIDA-E)
Uruguay

Otto Koudelka

Vice President for Technical Activities
International Astronautical Federation (IAF)
Austria

7 GALA DINNER

Tuesday, 22 May

The Gala Dinner will take place on at the Restaurant Arcadia situated on the 24th floor of the Radisson Montevideo Victoria Plaza Hotel.

The ticket price (including VAT) is € 80,00.

Location:
Plaza Independencia 759
11100 Montevideo
Uruguay

Notes

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