



International
Astronautical
Federation

News



Connecting @ll Space People

3/2018 (September 2018)

President's Welcome

Dear Colleagues,

Welcome to the autumn edition of our newsletter. This edition highlights the latest news on the upcoming 69th IAC to be held in Bremen, Germany, from 1-5 October.

The Congress is going to feature a rich programme of plenaries, highlight lectures, special sessions, global networking forum, interactive presentations, keynote lectures, press conferences, announcements, technical sessions and also cocktail receptions, late-breaking news breakfasts and delicious lunches. Likewise, the IAC places strong emphasis on youth development, for which we have the Emerging Space Leaders grants programme to support young talent to attend the Congress. Also, as per the IAF Spring Meetings in Paris last March, this year's IAC will have a Diversity Day on Wednesday 3rd to celebrate the Space Community 3Gs: Gender, Generation, and Geography. The IAC will also be recognizing individuals who have made an outstanding contribution to advancing astronautics during its annual Awards Ceremony. Furthermore, you will find some helpful logistical information in the pages that follow. The newsletter also gives you the latest on IAF activities and a selection of members' news in the Members' Corner. Our members are crucially important to us and I encourage all of you to consider submitting short items for future newsletters, to share your news with the wider IAF community.

Last but not least, I would like to express my sincere thanks in advance to all the organizing teams, for what promises to be a successful congress, rich in diversity and international cooperation. I am very much looking forward to welcoming all of you to the Congress and enjoying every moment of it.

See you online #IAC2018

Dr. Jean-Yves Le Gall
IAF President



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IAF NEWS

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MEMBERS' CORNER

OUR LATEST PUBLICATIONS

- IAC 2018 General Programme
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INTERVIEWS WITH:

Marc Avila, Director of the Center of Applied Space Technology and Microgravity (ZARM) and
Raul Kulichevsky, Executive and Technical Director of the National Commission on Space Activities (CONAE)

IMPORTANT DATES:

- IAC 2018 – 1-5 October 2018
- ISF 2018 – 30 October 2018
- IAF Spring Meetings – 26-28 March 2019
- GLEC 2019 – 24-26 April 2019
- IAC 2019 – 21-25 October 2019



Platinum



Gold



Silver



Bronze



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International Astronautical Federation

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TEAM GERMANY SUPPORTS **IAC** 69TH INTERNATIONAL ASTRONAUTICAL CONGRESS BREMEN | 1-5 OCTOBER 2018 #INVOLVING EVERYONE

IAC 2018

It is with great pleasure that the International Astronautical Federation (IAF) invites you to the 69th annual International Astronautical Congress (IAC).

IAC 2018 will involve everyone offering a rich programme of Plenaries, Highlight Lectures, Technical lectures as well as a Global Networking Forum and many social events abundant in networking opportunities.

Download and use the IFASTRO App to organize your IAC 2018!

Dear IAC Friends,

With the IFASTRO App, you can personalize your IAC 2018 schedule, receive the latest updates, see the list of all sessions, plenaries, GNFs, press conferences and social events, contact all app users, check on all the speakers, watch IAC TV, connect on social media, reach out exhibitors, and so much more!

The App name on the "App Store" and on the "Google Play Store" is IFASTRO

Should you have any questions please contact IAF App Manager: [Abed Aldaas abed.aldaas@iafastro.org](mailto:abed.aldaas@iafastro.org)

You can download the App on:

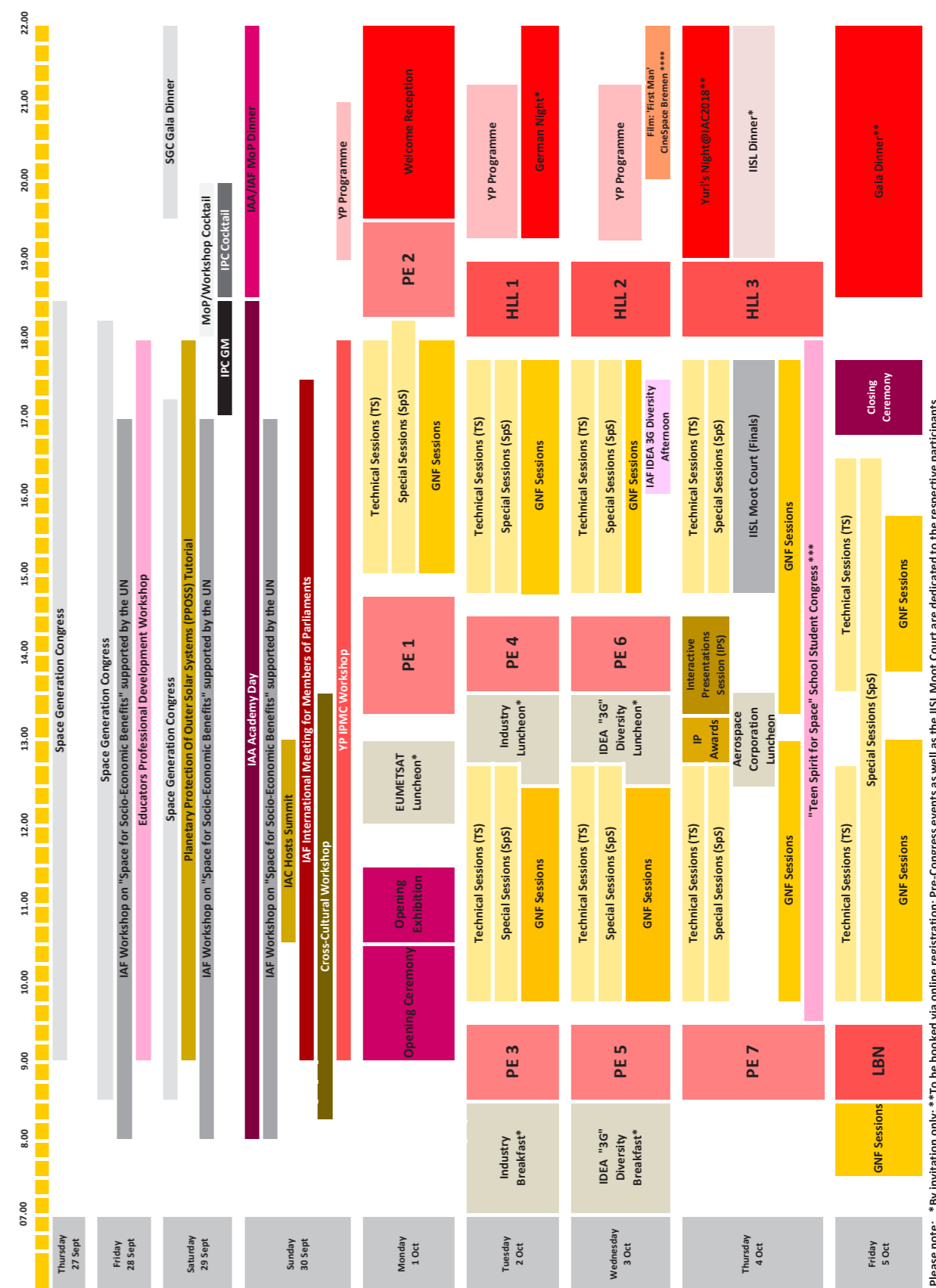
- Google Play store: <https://play.google.com/store/apps/details?id=com.attendify.confbofn3r>
- Apple Store: <https://itunes.apple.com/app/id1328269635>
- IAF Web App: <http://bofn3r.m.attendify.com/app/events>



Or directly with this QR code:



#IAC2018 AT A GLANCE



Please note: **By invitation only; **To be booked via online registration; Pre-Congress events as well as the IISL Moot Court are dedicated to the respective participants
 *** In German language ****admission only with valid Congress badge

IAC2018 Plenaries

The IAC Plenary Programme features an exciting selection of Highlight Lectures, high-level Plenary Sessions, and Late-breaking News events.

Highlight Lectures:

Highlight Lecture 1: [The Growing Role of Artificial Intelligence in Space Exploration](#)

Tuesday 2 October 2018, 18:00 – 19:00

Location: Bremen Exhibition & Conference Center – DLR Hall

Highlight Lecture 2: [Gravitational Wave Detection on Ground and in Space – The New Window to The Universe](#)

Wednesday 3 October 2018, 18:00 – 19:00

Location: Bremen Exhibition & Conference Center – DLR Hall

Highlight Lecture 3: [The Sky is not the Limit – Paving the Way for an Orbital Society](#)

Thursday 4 October 2018, 18:00 – 19:00

Location: Bremen Exhibition & Conference Center – DLR Hall

Plenaries:

Plenary 1: [Heads of Agencies](#)

Monday 1 October 2018, 13:15 – 14:45

Location: Bremen Exhibition & Conference Center – DLR Hall

Plenary 2: [Host Plenary – How to live and work on ISS, Moon and Mars](#)

Monday 1 October 2018, 18:15 – 19:30

Location: Bremen Conference Center – DLR Hall

Plenary 3: [High Tech Entanglement: How the Diverse Global Space Industry and Other High-tech Sectors are Becoming More Entwined and Interdependent](#)

Tuesday 2 October 2018, 08:30 – 09:30

Location: Bremen Exhibition & Conference Center – DLR Hall

Plenary 4: [The Game Changers – for a Joint Future in Space](#)

Tuesday 2 October 2018, 13:30 – 14:30

Location: Bremen Exhibition & Conference Center – DLR Hall

Plenary 5: [The Next Generation Plenary – Small Sats – Involving Everyone through Their Applications](#)

Wednesday 3 October 2018, 08:30 – 09:30

Location: Bremen Exhibition & Conference Center – DLR Hall

Plenary 6: [From Deep Impact to Gravity through Space Weather: Working Together to Protect From Space Hazards, Human-made or Natural](#)

Wednesday 3 October 2018, 13:30 – 14:30

Location: Bremen Exhibition & Conference Center – ÖVB Arena

Plenary 7: [Greenhouse Gas Measurements from Space – Difficult Challenges, Emerging Success, and Plans for the Future](#)

Thursday 4 October 2018, 08:30 – 09:30

Location: Bremen Exhibition & Conference Center – DLR Hall

Technical Programme

<https://iafastro.directory/iac/browse/IAC-18/catalog-technical-programme>



01/10/2018	02/10/2018	03/10/2018	03/10/2018	04/10/2018	04/10/2018	05/10/2018	05/10/2018
15:00-18:00	09:45-12:45	09:45-12:45	14:45-17:45	09:45-12:45	14:45-17:45	09:45-12:45	13:30-16:30
A3.1	A3.2A	A3.3A	A3.3B	A3.4A	A3.5	A3.2C	A3.4B
D2.1	D2.2	D2.3	D2.4	D2.5	D2.6	D2.8/A5.4	D6.2/D2.9
C1.1	C1.2	C1.4	C1.5	C1.6	C1.7/A6.10	C1.8	C1.9
A6.1	A6.2	A6.3	A6.4	A6.5	A6.6	A6.7	A6.8
B4.2	B4.1	B4.4	B4.3	B4.6A	B4.6B	B4.8	B4.7
B1.1	B1.2	B3.4/B6.4	B1.3	B1.5	D5.3	B1.4	D5.4
B3.1	B3.2	C4.3	B3.3	B3.5	B3.6/A5.3	B3.7	B3.8/E7.7
C4.1	C4.2	C2.4	C4.9	C4.5	C4.6	C4.7/C3.5	C4.8/B4.5A
C2.1	C2.2	C2.4	C2.3	C2.6	C2.7	C2.8	C2.9
C3.1	C3.2	E5.3	E5.1	E5.4	E5.5	B6.2	
A1.1	A1.2	A1.4	A1.3	A1.6	C3.4	A1.7	A1.8
E1.6	E1.3	E1.8	E1.4	E1.7	E1.9	E1.1	E1.2
D3.1	D4.1	D4.2	D3.2	D4.3	D3.4	D4.4	D4.5
B5.1	E7.1	E7.3	E7.2	B5.2	B5.3	E7.5	C4.10
B2.1	B2.2	B2.3	A4.1	B2.5	B2.6	B2.7	A4.2
B6.3	E3.1	E3.3	E3.2	E3.5/E7.6	B6.1	E3.6	
A2.1	A2.2	D5.2	D5.1	A2.4	A2.5	A2.6	A2.7
A7.1	E6.1	A7.2	E4.1	E4.2	A7.3	E6.3	E4.3A/E4.3B
D1.1	D1.2	E2.2	D1.3	D1.4A	D1.4B	D1.5	D1.6
E2.3/GTS.4	E2.1	D6.1	B2.8/GTS.3	D6.3	B1.6/GTS.1	E8.1	B4.9/GTS.5

Category E: Space & Society
E1--> E8

Category C: Technology
C1--> C4

Category A: Science & Exploration
A1--> A7

Category D: Infrastructure
D1--> D6

Category B: Applications & Operations
B1--> B6

Interactive Presentations

<http://www.iafastro.org/events/iac/iac-2018/technical-programme/interactive-presentations/>



The 69th IAC continues its tradition of offering Interactive Presentations, a great **opportunity** for presenters to showcase their work, emerging ideas, late-breaking results, experiences, and challenges on space topics. The Interactive Presentations Session is a **dynamic forum** among presenters and the audience and **highly interactive**, and allow authors and participants to engage in **in-depth discussions** about the presented work from which **new collaborations**, ideas, and solutions can emerge.

Interactive Presentations include **multimedia**, such as audio and video, as well as images and animations. Their flexibility helps foster presenters **creativity** and skills, and provides a platform for building **engaging, collaborative, and visually powerful** presentations.

The Interactive Presentations Session will take place on Thursday 4 October, from 13:15 to 14:45.

The **five best** Interactive Presentations of the IAC2018 will be **awarded** during a dedicated ceremony to be held just before the IP Session on Thursday 4 October, from 12:45 to 13:15.

Keynotes

<http://www.iafastro.org/events/iac/iac-2018/technical-programme/keynotes/>

MONDAY 1 OCTOBER

Time: 15:00

- 2018 Activities of the International Committee on Earth Observation Satellites (CEOS) By Marie-Astrid Koch
- Fifty Years of Space Solar By John C. Mankins
- The European Way for Liquid Propulsion – Hydrogen / Methane Family Concept By Gerald Hagemann
- Using Design Competition Projects for a Spacecraft Design Capstone By David B. Spencer

TUESDAY 2 OCTOBER

Time: 14:45

- Fluid Science Experiments Conducted on the ISS By Valentina Shevtsova
- Wireless Power Transportation World Research Center – Purpose and Operation By Guy Pignolet
- Recent Developments in Solid Propulsion By Jean-Francois Guery
- Advance of Scramjet Operating Mode Comprehension based on Shock Tunnel Experiments and Numerical Modelling By Klaus Hannemann
- Experience from Suborbital Reusable Launches By Ariane Cornell
- Space Law and International Organizations By Marco Ferrazzani

WEDNESDAY 3 OCTOBER

Time: 14:45

- Rocket Lab: Liberating the Small Satellite Market By Peter Beck
- How to Sense Gravity? By Eberhard Gill

Time: 09:45

- Santini Lecture, given by Gerben Sinnema: Safety of Spaceflight Structures - The Application of Fracture and Damage Control By GerbenSinnema
- Reflections on the Economic Impact of Profit Policies by Public Procurement Authorities in Space and Defence Programmes By Eric Morel de Westgaver

FRIDAY 5 OCTOBER

Time: 13:30

- Practical Debris Mitigation Manual for Developers of Microsatellites and Smaller By Darren McKnight
- Challenges and Opportunities in Space Propulsion for Small Satellites By Paulo Lozano
- Green Solutions for Space Propulsion By Ulrich Gotzig

Special Sessions

<http://www.iafastro.org/events/iac/iac-2018/technical-programme/special-sessions/>



Monday 1 October

New Challenges for Planetary Protection	15:00-16:30	CCB Focke-Wulf-Saal	Panel Discussion
Open Source Space Workshop	16:45-18:15	CCB Focke-Wulf-Saal	Workshop

Tuesday 2 October

A Global Space Partnership Towards 2030: Addressing the Needs of Member States of the United Nations to Achieve the Sustainable Development Goals	09:45-11:15	CCB Focke-Wulf-Saal	Panel Discussion
Commercial Platforms on the International Space Station - New Low Cost Opportunities for Commercial and Institutional Missions	11:30-13:00	CCB Focke-Wulf-Saal	Panel Discussion
The Nexus of Blockchain and Space (Part I)	14:45-16:15	CCB Focke-Wulf-Saal	Panel Discussion
The Nexus of Blockchain and Space (Part II)	16:30-18:00	ÖVB 6	Workshop
Swarm Systems for Future Space Exploration	16:30-18:00	CCB Focke-Wulf-Saal	Workshop

Wednesday 3 October

Earth Observation and Sustainable Development Goals – Views from a Decade with the Group on Earth Observations. Panel Discussion on Readiness for a Landsat-Copernicus Sentinel 2 Collaboration: Integrated operational land imaging to meet user needs worldwide	09:45-11:15	CCB Focke-Wulf-Saal	Panel Discussion
The Golden Age of the European Earth Observation	11:30-13:00	CCB Gallery	Panel Discussion
Galileo, the European Global Navigation System	16:30-17:30	CCB Gallery	Award Presentation
Challenges, Technologies and Solutions for Exploration of Icy and Ocean Worlds	16:30-18:00	CCB Focke-Wulf-Saal	Panel Discussion
New Approaches to Space for a Better World: Space for Sustainable Development	14:45-16:15	CCB Focke-Wulf-Saal	Workshop

Thursday 4 October

Space Journalism and Outreach Workshop	09:45-11:15	CCB Lilienthal	Workshop
Twenty years of the International Space Station: Shaping the Future of Human Space Exploration	09:45-11:15	CCB Focke-Wulf-Saal	Multiple Panel Discussion
Quantum technologies for Space - Development and Applications	11:30-13:00	CCB Focke-Wulf-Saal	Elevator Pitches & Panel Discussion
Global Space Exploration: Increasing Benefits through International and Commercial Partnerships	14:45-16:15	CCB Focke-Wulf-Saal	Workshop
Quantum Key Distribution – The Future of Cryptography	16:30-18:00	CCB Focke-Wulf-Saal	Panel Discussion

Friday 5 October

#HiddenNoMore: Empowering Young Women in the Space Sector	09:45-10:45	ÖVB 4	Panel Discussion
Commercial Suborbital: Opening the Aperture for Space Utilization	09:45-11:15	CCB Focke-Wulf-Saal	Workshop
Adoption of Space Technologies and Applications in Emerging / NewSpace Actors	11:00-12:00	ÖVB 4	Panel Discussion

Creating Strategic University Partnerships through International Student Projects	11:00-12:00	CCB Bessel	Workshop
A Scientific "Wish List" for Research Facilities on the Moon	11:30-13:00	ÖVB 1	Group Discussion
Innovative Spacecraft Concepts and Servicing	11:30-13:00	CCB Focke-Wulf-Saal	Panel Discussion
Space Chemistry: a Key to Fostering Space Exploration	12:15-13:15	CCB Bessel	Panel Discussion
2018: 10 years Columbus in Space and Delivery of Orion European Service Module	12:15-13:15	ÖVB 4	Panel Discussion
Space Needs Everyone's Ideas! Prizes and Challenges in the Space Sector	13:15-14:45	CCB Bergen	Panel Discussion
RF Spectrum for TT&C - Regulatory Framework vs. Needs of Operators	13:50-14:50	CCB Focke-Wulf-Saal	Panel Discussion
The European Research Council – Funding Opportunities for Bright Minds	15:00-16:30	CCB Franzius	Workshop
The Design Sprint: How to Solve Almost Any Challenge in Less Than a Week	15:00-16:30	CCB Bergen	Workshop
Latin America beyond LEO: Securing Regional Participation in the Moon Village	15:00-16:30	CCB Focke-Wulf-Saal	Group Discussion

Global Networking Forum (GNF)

MONDAY 1 OCTOBER

GNF Opening Day

Room: DLR Hall

- 15:00 – 15:15 GNF Opening
- 15:15 – 15:45 Results from the AMS experiment on the International Space Station
- 15:50 – 16:20 Results of the UN / IAF workshop on Space Technology for Socio-Economic Benefits: "Industry, Innovation and Infrastructure for Development (3Is4D)"
- 16:25 – 17:10 The ISS as a « Launch Pad » for the Future Astronautics: Innovative Technologies, Open Architecture, and International Cooperation for Deep Space Missions.
- 17:15 – 18:00 Human Spaceflight Beyond Low Earth Orbit

TUESDAY 2 OCTOBER

GNF Industry Stream

Room: DLR Hall

- 09:45 – 11:15 Including Everyone in Lunar Exploration
- 11:30 – 12:00 The Australian Space
- 14:45 – 16:15 IAF Start-up Pitch Session
- 16:30 – 16:50 Industry Deep Dives: Lockheed Martin Ventures
- 16:50 – 17:10 Industry Deep Dives: ispace's First Commercial Lunar Missions: Launcher, Lander, and Roadmap
- 17:10 – 17:30 Industry Deep Dives: Earth Observation to the Power of Hundreds – the Story of Planet
- 17:30 – 17:50 Industry Deep Dives: Affordable, Accessible, Accelerated – The MILO Space Science Institute



GNF Society & Education Stream

Room: CCB Hansesaal

- 09:45 – 10:45 Orbits, Arts & Culture
- 11:00 – 12:00 Bridging Space and Society: Strategies of Space Agencies to Foster the Uptake of Satellite-Based Services
- 12:10 – 12:30 Space Sustainability Rating – New Way of Addressing the Orbital Debris Challenge
- 14:45 – 15:45 Aircraft Parabolic Flight Campaigns for Microgravity and Student Experiments
- 15:55 – 16:55 The Role of Education in Support of Emerging Countries
- 17:05 – 17:50 New Space – Rocking Earth Observation

WEDNESDAY 3 OCTOBER

GNF Public Stream

Room: DLR Hall

- 09:40 – 10:40 What Will Shape the Future of European Launchers?
- 10:50 – 11:10 Space Spin-Ins from the Underground – CERN's Aerospace Applications
- 11:20 – 12:20 Reusability: The Key to Reliability and Affordability
- 14:45 – 15:05 In-Flight Call with Alexander Gerst (N.B. Room: ÖVB Arena)
- 15:05 – 16:05 IAF-ASE Astronauts Event (N.B Room: ÖVB Arena)
- 16:30 – 17:30 European Industry Contribution to a Lunar Orbital Platform

GNF Development Stream

Room: CCB Hansesaal

- 09:40 – 10:25 Small Satellite Applications Development Leveraging Socio-Economic Benefits
- 10:35 – 11:05 Introduction of the System and Current Development on Aerospace Components in China
- 11:15 – 12:15 ESA's Jam Session on Space Safety
- 14:40 – 16:10 The Need For a Solid SME Base Within the Industrial Chain on Space and Defence Programmes
- 16:20 – 17:20 Italian Space Economy for the Sustainable Development Goals
- 17:30 – 17:45 The UK Space Agency – Towards 2030

THURSDAY 4 OCTOBER

GNF Future Stream

Room: DLR Hall

- 09:40 – 10:40 Space Station and the Next Generation: Launching the LEO Ecosystem
- 10:50 – 11:50 Space & Mobility
- 12:00 – 13:00 URBAN: Conceiving a Lunar Base Using 3D Printing Technologies
- 13:10 – 14:10 Introduction to Manned Environment and Scientific Experimental Resources of Chinese Space Station
- 14:20 – 15:20 How Will Quantum Technologies Change the Future of Space?
- 15:30 – 16:30 Life in Space: the Science, the Challenges, and the Broad Horizon

GNF Challenges Stream

Room: CCB Hansesaal

- 10:50 – 11:50 Climate Change – How Can Space Based Measurements Be Used to Understand the Changing Human Impact on the Sources and Sinks of Greenhouse Gases and Global Climate Change?
- 12:00 – 13:00 Prospect of China's New Generation Recoverable Satellite Piggyback Service
- 13:45 – 14:45 The Young Generations' Perspective of Space and Security
- 14:55 – 15:55 SGAC SpaceGen Entrepreneurs Forum
- 16:05 – 17:05 Developing Space Workforce – Industry Focus

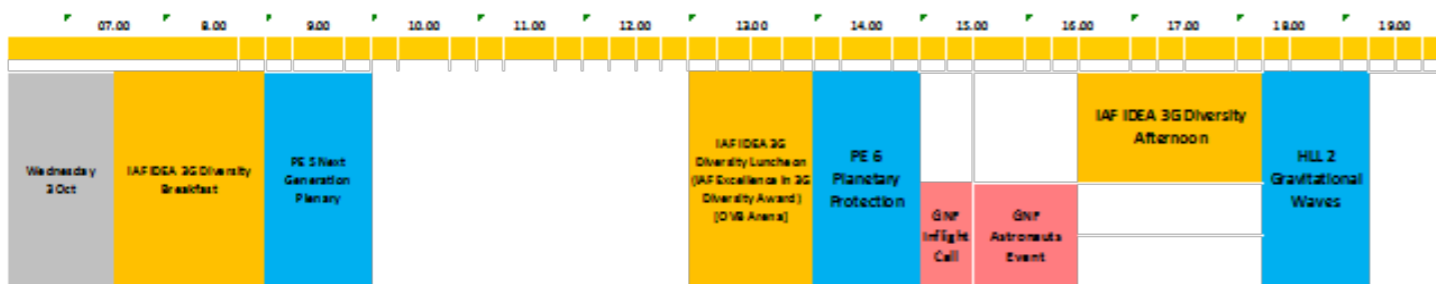
FRIDAY 5 OCTOBER

GNF Exploration Stream

Room: DLR Hall

- 07:30 – 08:30 Ahead of the Curve – How Our Next Steps Fuel the Path to the Moon and Beyond
- 09:40 – 10:40 Monitoring Asteroids: Defending our Planet. Threats or Opportunities?
- 10:50 – 11:50 Igniting International Excitement for Interplanetary Space Travel
- 12:00 – 13:00 EarthMoonMars : Involving Everyone
- 13:45 – 14:45 Digitization in the Space Sector – from Hardware to Software
- 14:55 – 15:40 Creating the Moon Village: First Results from the Drawing Board

IAF IDEA "3G" Diversity Day



Master of Ceremony and Moderator:



Mary Snitch
IAF VP for Diversity Initiatives

Sponsored by: Lockheed Martin

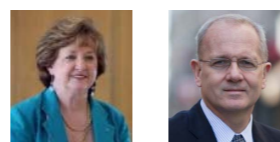


IAF IDEA "3G" Diversity Breakfast

(07:00 – 08:30, ÖVB Arena Olbers)

Programme:

- 07:00 – 07:05 Introduction to IAF IDEA 3G Diversity Day by Moderator, **Mary Snitch**
- 07:05 – 07:10 Welcome by IAF President, **Jean-Yves Le Gall**



- 07:10 – 07:30 An International Asteroid Endeavour – A Splendid Achievement of International Cooperation and Excellent Example of Geographical Diversity

Hayabusa2 is an asteroid sample return mission of the Japanese Space Agency (JAXA); its aim is to learn more about the nature and composition of near Earth asteroids and the origin and evolution of our Solar System. The MASCOT lander (Mobile Asteroid Surface Scout) - developed by the German Aerospace Center DLR and built in close cooperation with the French Space Agency CNES – is on board the Japanese Hayabusa2 spacecraft. In the very early hours of 3 October 2018, it will touch down on the C-type near-Earth asteroid Ryugu. For about 16 hours, four instruments (camera, radiometer, magnetometer, spectrometer) will be operated on the asteroid's surface. In addition, MASCOT is able to 'hop' around on the surface and take measurements in several places. This will be the first time that a lander was especially built to operate on an asteroid surface and the first time that data will be collected at more than one site on an asteroid's surface. The international effort of the asteroid sample return mission Hayabusa2, the MASCOT lander and possibly the confirmation of touchdown will be announced by the following speakers:



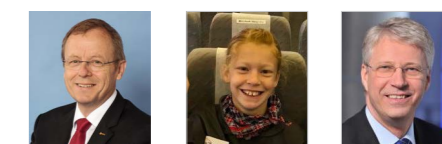
- **Pascale Ehrenfreund**, Chair of the Executive Board of DLR
- **Jean-Yves Le Gall**, President of CNES
- **Hiroshi Yamakawa**, President of the Japan Aerospace Exploration Agency JAXA

07:30 – 08:00 How to Engage the very Young Generation? – ESA's Kid's Weightless Dreams Campaign

In August 2018 ESA helped to provide children with disabilities the opportunity to experience weightlessness and lunar gravity on aircraft flights. Eight children from five ESA member states – UK, France, Germany, Belgium, and Italy – boarded the converted Airbus A310 in Bordeaux, France on 24 August as part of the Kid's Weightless Dreams campaign organized by Novespace and Reves de Gosse. The children also took part in science demonstrations, including lighting a candle, mixing liquids of different densities, playing ping-pong with bubbles of water and working a fidget spinner to demonstrate the effects of microgravity.



Joining the children were ESA astronauts from their corresponding member states: Tim Peake (UK), Frank De Winne (Belgium), Maurizio Cheli (Italy), Thomas Reiter (Germany), Claudie Haigneré (France) and Jean-Francois Clervoy (France) were on board to mentor the children and answer their questions.



Two disabled adults, former athlete and German television personality Samuel Koch, a strong advocate for disabled causes, and Philippe Carrette, a very active Rêve de Gosse volunteer, also took part in the flight.

ESA Director General Jan Woerner joined the Kid's Weightless Dreams flight and will welcome one of them, Paula Monfeld (from Cologne), to talk with her about this exceptional experience. Also joining the event will be ESA astronaut and former ESA Director of Human Spaceflight Thomas Reiter, who had accompanied Paula at this flight experience.

08:00 – 08:15 UNOOSA's "Space for Women" – Project

UNOOSA is looking for partners for the implementation of the activities developed during the "Space for Women" - Expert Meeting held in October 2017 in New York to answer the recurring questions of:

- How to attract more women for space?
- What can women do for space?
- What can space do more for women?
- What do women need from space?



With a special focus on Sustainable Development Goals 4 (Quality Education) and 5 (Gender Equality) this project seeks to promote the critical role of women in the implementation of all the Sustainable Development Goals (SDG) as many targets specifically recognizing women's equality and empowerment as both the objective, and part of the solution.

The "Space for Women" project will facilitate the strengthening of the awareness, capacity and skills of individuals and institutions related to the importance of promoting gender equality in the space sector and its fundamental educational fields.

Simonetta di Pippo, Director of UNOOSA, will give a keynote on the project and its current status focusing on:



- Space for Women
- Importance of inclusion, equality and empowerment
- Networking and importance of role models and the possible established
- champions programme under "Space for Women"
- Some personal experience

08:15 – 8:30 Lockheed Martin Early Career Role Models

Keynote Speech by two Lockheed Martin Early Career Females:

- Danielle Richey, Space Exploration Architect, LMC
- Kat Coderre, Systems Engineer, LMC



Excellence in “3G” Diversity Award Luncheon

(12:30 – 13:30, ÖVB Arena Olbers)

(Participation is by Invitation only!)

The IAF Excellence in “3G” Diversity Award recognizes IAF member organizations (industry, government, academia) worldwide for outstanding contributions to the fostering of “3G” (Geography, Generation, Gender) Diversity within the space sector.

At IAC 2018 this award will be given for the second time. This year’s winner of this award is the Space Generation Advisory Council (SGAC). This Luncheon is dedicated to the award ceremony for the “2018 IAF Excellence in 3G Diversity Award”.

Programme:

12:45 – 12:50 Welcome by **Jean-Yves Le Gall**, IAF President

12:50 – 12:55 Introduction of the IAF 3G Diversity Award
Mary Snitch, IAF VP for Diversity Initiatives

12:55 – 13:00 Award Ceremony and Photo

13:00 – 13:15 Presentation by the Award winner
Space Generation Advisory Council (SGAC)

13:15 – 13:20 Premier Presentation of joint IAF/SGAC video on
“Fostering Generational Diversity”

13:20 – 13:30 Networking



IAF IDEA “3G” Diversity Afternoon

(16:00 – 17:45, ÖVB Arena Olbers)

The IAF IDEA 3G Diversity Afternoon is organized in cooperation with and with participation of Young ESA, SGAC and WIA-Europe.

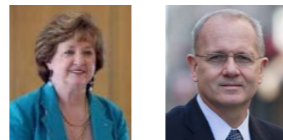


Programme Overview:

Master of Ceremony: IAF VP for Diversity Initiatives, Mary Snitch

16:00 – 16:05 Welcome by IAF President, Jean-Yves Les Gall

16:05 – 16:30 **Young ESA / SGAC Diversity Award**



About the award

This competition was organized for a second year by Young ESA in cooperation with Space Generation Advisory Council (SGAC). Participants were asked to submit a video and an essay on a diversity related topic as well as their CV. The selection was done through an internal committee of ESA representatives lead by the Strategy Department.

About the winners

This years’ first place Katherine Pangalos, 21 years old, of Dutch nationality and MSc in Astronautics and Space Engineering. For the first time, the second and third places are also recognized. This year, these are held by Christopher Ogunlesi and Kwasi Kkansah.

Programme

- Short Welcome by Young ESA Moderator, **Christopher Vasko**
- Welcome by ESA Director General, **Jan Woerner**
- ESA DG, **Jan Woerner** to present winners with their Awards
- Closing remarks by SGAC Executive Director, **Clementine Decoopman**
- Group photo



16:30 – 16:50 WIA-E Update & Awards Ceremony

Passionate about expanding women’s opportunities for leadership and increasing their visibility in the aerospace sector WIA-E is encouraging members of the space community to be part of their ever-growing network of like-minded professionals. Rich with opportunity, their various functions offer something for everyone. WIA-E offers mentoring programmes, awards, grants, training workshops, networking local groups and much more. In addition to this, both regional and central events regularly feature speakers and panel discussions on a wide range of topics of interest to the community, and keep members updated with valuable industry information such as scholarships and conferences.

Awards Background information

WIA-Europe would like to encourage and support upcoming talent – young professionals and students alike – and for this a grants programme was established. The programme provides grants of € 1000 to cover attendance at aerospace workshops and conferences and is intended to support new and young colleagues with their first experiences in presenting a paper in an international context. Applicants were selected based on their papers from all related aerospace disciplines. A grants committee of space pro-fessionals under the lead of **Chris Welch**, Professor at the International Space University, evaluated and decided on the winners. Along with the grant of € 1000 for the conference, they will also win a year-long free membership to WIA-Europe for the following year.

Programme

- Welcome and Keynote by WIA – E President and Interim Chair, **Luisella Giulicchi**
- Introduction to the WIA-E Grant programme by **Chris Welch**
- Short 5 minute presentation by Grant winner(s) about their work
- Congratulation by WIA-E Director of Professional Development, **Christina Giannopapa**
- Group photo



16:50 – 17:45 IAF IDEA Mentoring Session with Young ESA / SGAC / WIA-E & Networking reception

About the Mentoring Session

The IAF, SGAC, Young-ESA and WIA-E have joined forces for the first time to offer a joint Mentoring Session to Young Professionals with top space professionals. This speed mentoring serves as a bridge between the experienced and the incoming generation of actors in the space sector.

Programme

- Welcome by the Moderator, Mary Snitch (5 minutes)
- 5 Speed mentoring sessions of 9 minutes each (45 minutes)
- Summary and closing remarks by Moderators (5 minutes)

Event Structure

There will be 5 tables for 6 participants and 1 mentor each.

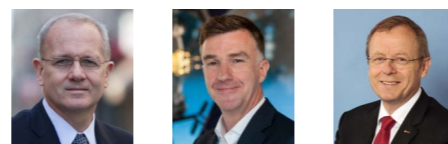
Speed mentoring participants were be selected by:

- IAF Workforce Development and Young Professionals Programme Committee – 12 partici-pants (2 tables)
- Young ESA – 6 participants (1 table)
- SGAC – 6 participants (1 table)
- WIA-E – 6 participants (1 table)

Speed mentoring participants were selected beforehand by the host organizations. While the mentors from table to table will rotate, participants remain seated. During the event, a networking reception is offered for all spectators.

List of invited Mentors:

- IAF – **Jean-Yves Le Gall**, President
- AIRBUS – **Oliver Juckenhoefel**, Vice President On-Orbit Services and Exploration
- ESA – **Jan Woerner**, Director General
- OHB – **Fritz Merkle**, Member of the Management Board
- IISL – **Kai-Uwe Schrogl**, President



Moderators:

- IAF VP for Diversity Initiatives, **Mary Snitch**
- Young ESA, **Christopher Vasko**
- WIA-E Director for Professional Development, **Christina Giannopapa**
- SGAC Executive Director, **Clementine Decoopman**



Meeting Schedule

Time	Event	Room
THURSDAY 27 SEPTEMBER 2018		
09:00 - 18:30	SPACE GENERATION CONGRESS (SGAC)	UNIVERSITY OF BREMEN
FRIDAY 28 SEPTEMBER 2018		
08:00 - 17:00	26 TH WORKSHOP ON SPACE TECHNOLOGY FOR SOCIO-ECONOMIC BENEFITS: "INDUSTRY, INNOVATION AND INFRASTRUCTURE FOR DEVELOPMENT (3IS4D)"	CCB BORGWARD, CCB DANZING, CCB LONDON
09:00 - 18:30	SPACE GENERATION CONGRESS (SGAC)	UNIVERSITY OF BREMEN
09:00 - 18:00	IAF/ISEB EDUCATORS PROFESSIONAL DEVELOPMENT WORKSHOP	DLR SchoolLab
SATURDAY 29 SEPTEMBER 2018		
08:00 - 17:30	26 TH WORKSHOP ON SPACE TECHNOLOGY FOR SOCIO-ECONOMIC BENEFITS: "INDUSTRY, INNOVATION AND INFRASTRUCTURE FOR DEVELOPMENT (3IS4D)"	CCB BORGWARD, CCB DANZING, CCB LONDON
09:00 - 18:00	TUTORIAL 3: PLANETARY PROTECTION 101	CCB FOCKE-WULF-SAAL
09:00 - 18:30	SPACE GENERATION CONGRESS (SGAC)	UNIVERSITY OF BREMEN
10:00 - 13:00	IAA SPACE DEBRIS COMMITTEE MEETING	CCB LILIENTHAL
11:00 - 13:00	IAF FINANCE COMMITTEE MEETING	ÖVB 1
12:30 - 13:00	IAA COMMISSION PLENARY MEETING	CCB OSLO
13:00 - 15:00	IAF SPACE EXPLORATION COMMITTEE MEETING	CCB GAUß
13:00 - 15:00	IAF NEXT GENERATION COORDINATION COMMITTEE (NGCC) MEETING	CCB HERSCHEL
13:00 - 16:00	IAA COMMISSION MEETING 1	CCB LLOYDSAAL
13:00 - 16:00	IAA COMMISSION MEETING 2	CCB ROSELIUS
13:00 - 16:00	IAA COMMISSION MEETING 3	CCB BERGEN
13:00 - 16:00	IAA COMMISSION MEETING 4	CCB SCHAROUN
13:00 - 16:00	IAA COMMISSION MEETING 6 - SPACE & SOCIETY, CULTURE & EDUCATION	CCB OSLO
13:00 - 17:00	JAXA SPACE EDUCATION AND OUTREACH	ÖVB 6
13:00 - 17:00	JAXA SPACE EDUCATION AND OUTREACH	ÖVB 5
14:00 - 15:30	IPC STEERING GROUP MEETING SESSION I	CCB BESSEL
15:00 - 16:30	IAF TECHNICAL ACTIVITIES COMMITTEE (TAC) MEETING	CCB BESSEL
16:00 - 17:30	IAA SCIENTIFIC ACTIVITIES COMMITTEE (SAC) MEETING	CCB OSLO
17:00 - 18:30	IPC GENERAL MEETING	CCB HANSESAAL

Time	Event	Room
SUNDAY 30 SEPTEMBER 2018		
08:00 - 17:30	26 TH WORKSHOP ON SPACE TECHNOLOGY FOR SOCIO-ECONOMIC BENEFITS: "INDUSTRY, INNOVATION AND INFRASTRUCTURE FOR DEVELOPMENT (3IS4D)"	CCB BORGWARD, CCB DANZING, CCB LONDON
08:00 - 18:00	SGAC PROFESSIONAL DEVELOPMENT WORKSHOP	CCB GAUß
08:00 - 18:00	SGAC PROFESSIONAL DEVELOPMENT WORKSHOP	CCB HERSCHEL
08:00 - 18:30	IAA ACADEMY DAY	CCB HANSESAAL
08:15 - 13:30	CROSS-CULTURAL WORKSHOP	CCB ROSELIUS AND CCB OSLO
09:00 - 12:00	IAF SPACE EDUCATION AND OUTREACH COMMITTEE (SEOC) MEETING SESSION I	ÖVB 1
09:00 - 17:30	IAF INTERNATIONAL MEETING FOR MEMBERS OF PARLIAMENTS	BREMEN STATE PARLIAMENT
09:00 - 18:00	IPMC YP WORKSHOP	CCB FOCKE-WULF-SAAL
10:30 - 13:00	IAF HOSTS SUMMIT	CCB KAISEN
13:00 - 15:00	IAF EARTH OBSERVATION COMMITTEE MEETING	CCB HUMBOLDT
13:00 - 18:00	IAF ASTRODYNAMICS COMMITTEE MEETING	ÖVB 6
14:00 - 17:00	IAF BUREAU MEETING SESSION 1	ÖVB 5
14:00 - 17:00	IAF WORKFORCE DEVELOPMENT - YOUNG PROFESSIONALS PROGRAMME (WD / YPP) COMMITTEE MEETING	ÖVB 1
14:00 - 18:00	ISEB CROSS-CULTURAL WORKSHOP	CCB ROSELIUS
14:00 - 18:00	IAF MATERIALS AND STRUCTURES COMMITTEE MEETING	CCB SCHAROUN
15:00 - 17:00	IAA BOARD OF TRUSTEES	CCB BERGEN
15:00 - 17:00	IAF GEOSUBCOMMITTEE MEETING	CCB HUMBOLDT
15:00 - 17:00	IAF SPACE PROPULSION COMMITTEE MEETING	CCB LILIENTHAL
15:00 - 17:30	IAF MICROGRAVITY SCIENCES AND PROCESSES COMMITTEE MEETING	CCB OSLO
16:00 - 18:00	IAF COMMERCIAL SPACEFLIGHT SAFETY COMMITTEE MEETING	CCB BESSEL
17:00 - 19:30	IAF SPACE TRANSPORTATION COMMITTEE MEETING	CCB LILIENTHAL
17:00 - 21:00	IAF HUMAN SPACEFLIGHT COMMITTEE MEETING	CCB BERGEN
18:00 - 19:00	IAF ESL/ YSL COMMITTEE MEETING	CCB BESSEL
18:00 - 21:00	A CONVERSATION ABOUT SPACE ARCHITECTURE	CCB FRANZIUS
19:00 - 20:00	YP NETWORKING EVENT: ESL 10TH ANNIVERSARY CELEBRATION	CCB BORGWARD
MONDAY 1 OCTOBER 2018		
08:00 - 09:00	VIP GATHERING	IP HALL
08:00 - 09:00	HOA PREPARATORY MEETING	CCB HUMBOLDT
09:00 - 10:30	OPENING CEREMONY	ÖVB ARENA
10:00 - 10:30	IAA STUDY GROUP 2.18	ÖVB 6
10:30 - 11:30	OPENING EXHIBITION AND VIP TOUR	EXHIBITION HALL
11:00 - 13:00	IAF SPACE LIFE SCIENCES COMMITTEE MEETING	CCB GAUß
11:00 - 13:00	IAF SPACE SYSTEMS COMMITTEE MEETING	ÖVB 5
11:00 - 13:30	IAA STUDY GROUP 4.23	ÖVB 6
11:30 - 12:15	PRESS CONFERENCE: IAC KICK-OFF	CCB GALLERY
13:00 - 18:00	IISL BOARD OF DIRECTORS	ÖVB 5
13:15 - 14:45	PE1: HEADS OF AGENCIES: INVOLVING EVERYONE - WHAT'S NEW FOR THE SPACE AGENCIES?	DLR HALL
15:00 - 15:15	GNF: GNF OPENING	DLR HALL
15:00 - 17:00	IAA COMMISSION MEETING 5	ÖVB 6
15:00 - 18:00	IAF GENERAL ASSEMBLY SESSION 1	CCB HANSESAAL
15:15 - 15:45	GNF: RESULTS FROM THE AMS EXPERIMENT ON THE INTERNATIONAL SPACE STATION	DLR HALL
15:15 - 16:00	PRESS CONFERENCE: HEADS OF AGENCIES	CCB GALLERY



Time	Event	Room
15:50 - 16:20	GNF: PRESENTATION OF RESULTS OF THE 26TH WORKSHOP ON SPACE TECHNOLOGY FOR SOCIO-ECONOMIC BENEFITS: "INDUSTRY, INNOVATION AND INFRASTRUCTURE FOR DEVELOPMENT (3IS4D)"	DLR HALL
16:00 - 16:45	LANDSPACE TECHNOLOGY PRESS CONFERENCE	CCB GALLERY
16:00 - 17:30	IAA STUDY GROUP 3.27	ÖVB 1
16:25 - 17:10	GNF: THE ISS AS A « LAUNCH PAD » FOR THE FUTURE ASTRONAUTICS : INNOVATIVE TECHNOLOGIES, OPEN ARCHITECTURE, AND INTERNATIONAL COOPERATION FOR DEEP SPACE MISSIONS	DLR HALL
17:15 - 18:00	GNF: HUMAN SPACEFLIGHT BEYOND LOW EARTH ORBIT	DLR HALL
17:45 - 18:45	NASA ADMINISTRATOR MEETING WITH STUDENTS	CCB LILIENTHAL
17:45 - 18:15	PRESS CONFERENCE: MOON RACE ANNOUNCEMENT	CCB GALLERY
18:15 - 19:30	PE2: HOST PLENARY: HOW TO LIVE AND WORK ON ISS, MOON AND MARS	DLR HALL
19:30 - 22:00	WELCOME RECEPTION	FESTIVAL HALL

TUESDAY 2 OCTOBER 2018

08:00 - 10:30	IAF CONGRESS AND SYMPOSIA ADVISORY COMMITTEE (CSAC) REPORT/MEETING/ INTERVIEW I	ÖVB 6
08:30 - 09:30	PE3: HIGH TECH ENTANGLEMENT: HOW THE DIVERSE GLOBAL SPACE INDUSTRY AND OTHER HIGH-TECH SECTORS ARE BECOMING MORE ENTWINED AND INTERDEPENDENT	DLR HALL
09:00 - 11:00	IAF SPACE ASTRONOMY TECHNICAL COMMITTEE (SATC) MEETING	ÖVB 5
09:00 - 12:00	IAF SPACE OPERATIONS COMMITTEE MEETING	CCB GAUß
09:00 - 12:00	IAF INTERNATIONAL PROJECT/PROGRAMME MANAGEMENT COMMITTEE (IPMC) MEETING	CCB BESSEL
09:30 - 11:30	MOON VILLAGE ASSOCIATION ADVISORY COUNCIL	CCB HUMBOLDT
09:45 - 10:45	GNF: ORBITS, ARTS & CULTURE	CCB HANSESAAL
09:45 - 11:15	GNF: INCLUDING EVERYONE IN LUNAR EXPLORATION	DLR HALL
10:00 - 10:45	PRESS CONFERENCE: MILO SPACE SCIENCE INSTITUTE	CCB GALLERY
10:00 - 12:00	IAF SPACE SECURITY COMMITTEE MEETING	ÖVB 1
11:00 - 12:00	GNF: BRIDGING SPACE AND SOCIETY: STRATEGIES OF SPACE AGENCIES TO FOSTER THE UPTAKE OF SATELLITE-BASED SERVICES	CCB HANSESAAL
11:00 - 12:00	ANNOUNCEMENT ON THE CALL OF INTEREST FOR THE ATLANTIC INTERNATIONAL SATELLITE LAUNCH PROGRAMME	CCB GALLERY
11:00 - 12:30	IAF GRULAC COMMITTEE MEETING	ÖVB 5
11:30 - 12:00	GNF: THE AUSTRALIAN SPACE	DLR HALL
11:30 - 13:45	IAA SPACE MINERAL RESOURCES STUDY GROUP	CCB HUMBOLDT
12:00 - 13:00	INTERNATIONAL LUNAR OBSERVATORY ASSOCIATION MEETING	ÖVB 1
12:00 - 13:30	IAA STUDY GROUP 4.21	CCB BESSEL
12:10 - 12:30	GNF: SPACE SUSTAINABILITY RATING – NEW WAY OF ADDRESSING THE ORBITAL DEBRIS CHALLENGE	CCB HANSESAAL
13:00 - 14:00	IAA SMALL SATELLITE MISSIONS PROGRAMME	CCB GAUß
13:00 - 18:00	IISL MOOT COURT COMPETITION (SEMI-FINALS)	ÖVB 1
13:00 - 18:00	IISL MOOT COURT COMPETITION (SEMI-FINALS)	ÖVB 5
13:15 - 18:30	GERMAN - JAPANESE B2B WORKSHOP	CCB LILIENTHAL
13:30 - 14:30	PE4: THE GAME CHANGERS: FOR A JOINT FUTURE IN SPACE	DLR HALL
14:00 - 15:30	IAF CLIODN COMMITTEE MEETING	CCB HUMBOLDT
14:00 - 16:00	IAF INTEGRATED APPLICATIONS COMMITTEE MEETING	CCB GAUß
14:45 - 15:45	GNF: AIRCRAFT PARABOLIC FLIGHT CAMPAIGNS FOR MICROGRAVITY AND STUDENT EXPERIMENTS	CCB HANSESAAL
14:45 - 16:15	GNF: IAF STARTUP PITCH SESSION	DLR HALL
15:00 - 16:00	PRESS CONFERENCE: EUROPEAN SPACE AGENCY DIRECTOR GENERAL	CCB GALLERY
15:00 - 16:00	IAF KMTC MODEL BASED SYSTEM ENGINEERING WORKING GROUP MEETING	ÖVB 6



Time	Event	Room
15:55 - 16:55	GNF: THE ROLE OF EDUCATION IN SUPPORT OF EMERGING COUNTRIES	CCB HANSESAAL
16:00 - 18:00	IAF KNOWLEDGE MANAGEMENT TECHNICAL COMMITTEE (KMTC) MEETING	CCB GAUß
16:30 - 16:50	GNF: INDUSTRY DEEP DIVES: LOCKHEED MARTIN VENTURES	DLR HALL
16:50 - 17:10	GNF: INDUSTRY DEEP DIVES: ISPACE'S FIRST COMMERCIAL LUNAR MISSIONS: LAUNCHER, LANDER, AND ROADMAP	DLR HALL
17:05 - 17:50	GNF: NEW SPACE – ROCKING EARTH OBSERVATION	CCB HANSESAAL
17:10 - 17:30	GNF: INDUSTRY DEEP DIVES: EARTH OBSERVATION TO THE POWER OF HUNDREDS – THE STORY OF PLANET	DLR HALL
17:15 - 17:45	PRESS CONFERENCE: GLOBAL CONFERENCE ON SPACE FOR EMERGING COUNTRIES - GLEC 2019	CCB GALLERY
17:30 - 17:50	GNF: INDUSTRY DEEP DIVES: AFFORDABLE, ACCESSIBLE, ACCELERATED – THE MILO SPACE SCIENCE INSTITUTE	DLR HALL
18:00 - 19:00	HHL1: THE GROWING ROLE OF ARTIFICIAL INTELLIGENCE IN SPACE EXPLORATION	DLR HALL
19:15 - 20:15	YP NETWORKING EVENT	CCB BORGWARD

WEDNESDAY 3 OCTOBER 2018

08:00 - 09:30	IAF SPACE COMMUNICATIONS AND NAVIGATION (SCAN) COMMITTEE MEETING	CCB BESSEL
08:00 - 10:00	WORLD SPACE WEEK ASSOCIATION BOARD OF DIRECTORS MEETING	CCB HUMBOLDT
08:30 - 09:30	PE5: THE NEXT GENERATION PLENARY: SMALL SATS – INVOLVING EVERYONE THROUGH THEIR APPLICATIONS	DLR HALL
09:00 - 18:00	INTER-AGENCY SPACE DEBRIS COORDINATION (IADC) STEERING GROUP	ÖVB 5
09:00 - 18:00	SPACE CLIMATE OBSERVATORY INTERNATIONAL MEETING	ÖVB 6
09:30 - 12:30	IAA SETI PERMANENT COMMITTEE MEETING	CCB LILIENTHAL
09:40 - 10:40	GNF: WHAT WILL SHAPE THE FUTURE OF EUROPEAN LAUNCHERS?	DLR HALL
09:40 - 10:25	GNF: SMALL SATELLITE APPLICATIONS DEVELOPMENT LEVERAGING SOCIO-ECONOMIC BENEFITS	CCB HANSESAAL
10:00 - 11:00	PRESS CONFERENCE: ESA/NASA	CCB GALLERY
10:00 - 11:30	IAF HONOURS AND AWARDS COMMITTEE (HAC) MEETING	CCB GAUß
10:00 - 12:00	IAF INDUSTRY RELATIONS COMMITTEE (IRC) MEETING	CCB HUMBOLDT
10:35 - 11:05	GNF: INTRODUCTION OF THE SYSTEM AND CURRENT DEVELOPMENT ON AEROSPACE COMPONENTS IN CHINA	CCB HANSESAAL
10:50 - 11:10	GNF: SPACE SPIN-INS FROM THE UNDERGROUND – CERN'S AEROSPACE APPLICATIONS	DLR HALL
11:00 - 12:00	GLEC 2019 INTERNATIONAL PROGRAMME COMMITTEE MEETING	CCB BESSEL
11:15 - 12:15	GNF: ESA'S JAM SESSION ON SPACE SAFETY	CCB HANSESAAL
11:20 - 12:20	GNF: REUSABILITY: THE KEY TO RELIABILITY AND AFFORDABILITY	DLR HALL
13:00 - 15:00	IAF STUDENT ACTIVITIES SUBCOMMITTEE MEETING	CCB GAUß
13:30 - 14:30	PE6: FROM DEEP IMPACT TO GRAVITY THROUGH SPACE WEATHER: WORKING TOGETHER TO PROTECT FROM CIVILIAN SPACE HAZARDS, HUMAN-MADE OR NATURAL	ÖVB ARENA
13:30 - 15:30	IAA STUDY GROUP 3.28	CCB HUMBOLDT
14:00 - 15:00	PRESS CONFERENCE: COLOMBIAN SPACE AGENCY (AEC) AND ECUADORIAN SPACE AGENCY (EXA)	CCB GALLERY
14:40 - 16:10	GNF: THE NEED FOR A SOLID SME BASE WITHIN THE INDUSTRIAL CHAIN ON SPACE AND DEFENCE PROGRAMMES	CCB HANSESAAL
14:30 - 15:00	GNF: IN-FLIGHT CALL WITH ALEXANDER GERST	ÖVB ARENA
14:45 - 16:15	BELGIUM SPACE DAY CONFERENCE	CCB LILIENTHAL
15:00 - 16:00	IAF WORKING GROUP ON EMERGING COUNTRIES MEETING	CCB GAUß
15:00 - 16:00	GNF: IAF-ASE ASTRONAUTS EVENT	ÖVB ARENA
16:00 - 17:45	IAF IDEA 3G DIVERSITY AFTERNOON	ÖVB ÖLBERS
16:20 - 17:20	GNF: ITALIAN SPACE ECONOMY FOR THE SUSTAINABLE DEVELOPMENT GOALS	CCB HANSESAAL
16:30 - 17:30	GNF: EUROPEAN INDUSTRY CONTRIBUTION TO A LUNAR ORBITAL PLATFORM	DLR HALL

Time	Event	Room
16:30 - 18:00	IAF CONGRESS AND SYMPOSIA ADVISORY COMMITTEE (CSAC) INTERVIEW II AND DEBRIEFING	ÖVB 1
17:30 - 17:45	GNF: THE UK SPACE AGENCY – TOWARDS 2030	CCB HANSESAAL
18:00 - 19:00	HLL2: GRAVITATIONAL WAVE DETECTION ON GROUND AND IN SPACE – THE NEW WINDOW TO THE UNIVERSE	DLR HALL
19:15 - 20:15	YP NETWORKING EVENT: YP ASTROPRENEUR PANEL	CCB BORGWARD
THURSDAY 4 OCTOBER 2018		
08:00 - 10:00	IAF/IAA/IISL ADVISORY COMMITTEE ON HISTORY ACTIVITIES (ACHA) MEETING	CCB HUMBOLDT
08:00 - 11:00	SPACE CLIMATE OBSERVATORY INTERNATIONAL MEETING	ÖVB 6
08:00 - 11:00	ANALYTICAL GRAPHICS PRODUCT SUMMIT	CCB OSLO
08:30 - 09:30	PE7: GREENHOUSE GAS MEASUREMENTS FROM SPACE: DIFFICULT CHALLENGES, EMERGING SUCCESS, AND PLANS FOR THE FUTURE	DLR HALL
08:30 - 10:30	IAF ENTREPRENEURSHIP & INVESTMENT (EIC) COMMITTEE MEETING	CCB GAUß
09:40 - 10:40	GNF: SPACE STATION AND THE NEXT GENERATION: LAUNCHING THE LEO ECOSYSTEM	DLR HALL
09:45 - 12:30	IAF BUREAU MEETING SESSION 2	ÖVB 5
10:00 - 12:00	IAF SPACE MUSEUMS AND SCIENCE CENTRES COMMITTEE MEETING	CCB BESSEL
10:00 - 13:00	ESA CONVENTION COMMENTARY PROGRAMME "GET TOGETHER"	CCB HUMBOLDT
10:30 - 12:30	IAF SPACE ECONOMY COMMITTEE MEETING	CCB GAUß
10:50 - 11:50	GNF: SPACE & MOBILITY	DLR HALL
10:50 - 11:50	GNF: CLIMATE CHANGE – HOW CAN SPACE BASED MEASUREMENTS BE USED TO UNDERSTAND THE CHANGING HUMAN IMPACT ON THE SOURCES AND SINKS OF GREENHOUSE GASES AND GLOBAL CLIMATE CHANGE?	CCB HANSESAAL
11:00 - 12:00	MOON VILLAGE ASSOCIATION GENERAL MEETING	ÖVB 6
11:00 - 12:00	PRESS CONFERENCE: RBC SIGNALS AND ECUADORIAN CIVILIAN SPACE AGENCY (EXA)	CCB GALLERY
12:00 - 13:00	GNF: URBAN: CONCEIVING A LUNAR BASE USING 3D PRINTING TECHNOLOGIES	DLR HALL
12:00 - 13:00	GNF: PROSPECT OF CHINA'S NEW GENERATION RECOVERABLE SATELLITE PIGGYBACK SERVICE	CCB HANSESAAL
12:00 - 13:30	IAF SPACE SOCIETIES COMMITTEE MEETING	CCB BESSEL
12:30 - 14:30	IAA HISTORY COMMITTEE MEETING	CCB GAUß
12:45 - 13:15	INTERACTIVE PRESENTATIONS (IP) AWARD CEREMONY	IP HALL
13:10 - 14:10	GNF: INTRODUCTION TO MANNED ENVIROMENT AND SCIENTIFIC EXPERIMENTAL RESOURCES OF CHINESE SPACE STATION	DLR HALL
13:30 - 15:00	IAF SPACE UNIVERSITIES AND ADMINISTRATIVE COMMITTEE (SUAC) MEETING	CCB HUMBOLDT
13:45 - 14:45	GNF: THE YOUNG GENERATIONS' PERSPECTIVE OF SPACE AND SECURITY	CCB HANSESAAL
14:00 - 19:00	IISL MOOT COURT COMPETITION (FINALS)	BREMEN COURT
14:20 - 15:20	GNF: HOW WILL QUANTUM TECHNOLOGIES CHANGE THE FUTURE OF SPACE?	DLR HALL
14:55 - 15:55	GNF: SGAC SPACEGEN ENTREPRENEURS FORUM	CCB HANSESAAL
15:00 - 17:00	IPC STEERING GROUP MEETING SESSION II	ÖVB 5
15:00 - 17:00	IAF ENTERPRISE RISK MANAGEMENT COMMITTEE (ERMC) MEETING	CCB HUMBOLDT
15:30 - 16:30	GNF: LIFE IN SPACE: THE SCIENCE, THE CHALLENGES, AND THE BROAD HORIZON	DLR HALL
16:00 - 17:30	IAA STUDY GROUP 3.24	CCB GAUß
16:05 - 17:05	GNF: DEVELOPING SPACE WORKFORCE – INDUSTRY FOCUS	CCB HANSESAAL
17:00 - 18:00	IAF ASTRODYNAMICS COMMITTEE MEETING	ÖVB 6
17:00 - 19:30	SGAC EXECUTIVE COMMITTEE MEETING	ÖVB 5
18:00 - 19:00	HLL3: THE SKY IS NOT THE LIMIT: PAVING THE WAY FOR AN ORBITAL SOCIETY	DLR HALL

Time	Event	Room
FRIDAY 5 OCTOBER 2018		
07:30 - 08:30	GNF: AHEAD OF THE CURVE – HOW OUR NEXT STEPS FUEL THE PATH TO THE MOON AND BEYOND	DLR HALL
08:30 - 09:30	LBN: MASCOT - MINERVA 11 - HAYABUSA2	DLR HALL
09:30 - 13:00	IAF GENERAL ASSEMBLY SESSION 2	CCB HANSESAAL
09:40 - 10:40	GNF: MONITORING ASTEROIDS: DEFENDING OUR PLANET. THREATS OR OPPORTUNITIES?	DLR HALL
10:50 - 11:50	GNF: IGNITING INTERNATIONAL EXCITEMENT FOR INTERPLANETARY SPACE TRAVEL	DLR HALL
12:00 - 13:00	GNF: EARTHMOONMARS : INVOLVING EVERYONE	DLR HALL
13:45 - 14:45	GNF: DIGITIZATION IN THE SPACE SECTOR – FROM HARDWARE TO SOFTWARE	DLR HALL
14:00 - 14:30	IAF BUREAU MEETING SESSION 3	ÖVB 5
14:55 - 15:40	GNF: CREATING THE MOON VILLAGE: FIRST RESULTS FROM THE DRAWING BOARD	DLR HALL
16:45 - 17:45	CLOSING CEREMONY	DLR HALL



#MYIAC2018

Dear IAF Community,

During this #IAC2018 in Bremen you will have the chance to tell us your IAC, who did you meet? which events did you like the most? What was your IAC2018 experience like? Using the Hashtag #MYIAC2018 publish on Facebook your IAC 2018 Highlight video of max 3 minutes on Thursday 4th at 1pm (13h) Bremen time (CET). The most liked video by Friday 5th at 1pm (13h) Bremen time (CET) will be shown during the #IAC2018 Closing Ceremony.

Good luck!

Show us your week at the
IAC 2018 in Bremen!

Connecting @ll Space People



The International Astronautical Congress welcomes each year a large number of students and young professionals eager to expand their knowledge and meet inspiring people. The IAF has observed a strong need of mentoring amongst students and young professionals who attend the IAC. This was one of the main outcomes of a survey conducted for the young professionals who participated in the IAC 2016 held in Guadalajara, Mexico. From this observation, the IAF came up with the idea of organizing a contest on social media where students and young professionals would compete to get the opportunity to be mentored by senior space experts at the next IAC in Bremen, Germany. The #UnlockYourIAC in Bremen will be the first edition.

The IAF is pleased to inform you that, based on the evaluation of the IAF Next Generation Coordination Committee (NGCC) members, the six winners selected for the first edition of the #UnlockYourIAC contest are:

- **Audrey Berquand**, Student, France
- **José Medina**, Young Professional, Argentina
- **Jochim Maene**, Student, Belgium
- **Harriet Brettle**, Student, United States
- **Shambo Bhattacharjee**, Student, India
- **Helia Sharif**, Student, Canada

Congratulations and see you on Wednesday 3 October at the #IAC2018!

#UnlockYourIAC is an online contest for students and young professionals under 35 years of age. The contest gives them the opportunity to access a « speed date » alike event with senior space experts:

- Business Incubator: how to get your business started and how to make it successful?
- Astronaut: what qualities and skills do you need to become an Astronaut?

Stay tuned for next year's edition!



IAC 2018 Sponsors and Media Partners



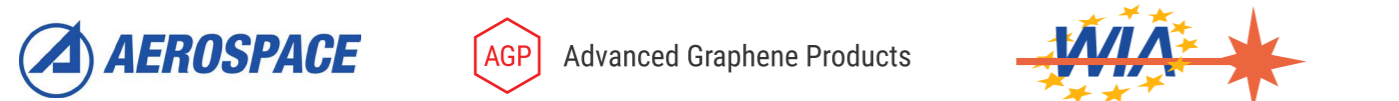
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ISF 2018



Organizers:



3rd International Space Forum 2018 - The Latin American Chapter

Space Science and Academia for better Solution to Latin America's Challenges.

Buenos Aires, Argentina | 1 November 2018

Venue: Centro Cultural de la Ciencia

Avenida Godoy Cruz 2320, C1425FQD, Buenos Aires

The third edition of the International Space Forum – the Latin American Chapter (ISF 2018) – is expected to bring together Latin American Ministers of Education, Science and Research, Heads of Space Agency, representatives of Universities and Academia involved in space activities, as well as members of International Space Organizations, with the aim to encourage the discussion on how Space education and technology can support the understanding and exploitation of space benefits to help solving some of Latin American's challenges.

3 Keynote Speeches on:

- Management of Natural Resources and Prevention of Disasters
- Space Partnerships
- Education and Capacity Building

Optional visit to the CONAE Space Centre and Mario Gulich Institute in Cordoba will be organized on 2 November 2018.

Social Programme:

- Welcome Reception on 31 October 2018
- Gala Dinner on 1 November 2018

Contact: spaceforum@iafastro.org

Be part of the conversation @iafastro and #ISFBuenosAires



GLEC 2019

www.glec2019.org

GLEC2019
GLOBAL CONFERENCE
ON SPACE FOR
EMERGING COUNTRIES

**MARRAKECH,
MOROCCO**
24-26 APRIL 2019

#IAC2018 Delegates: Do not miss the **Global Conference on Space for Emerging Countries – GLEC 2019 Press Conference, on Tuesday 2 October 2018 from 17:15 – 17:45 at CCB Gallery in the Bremen Conference Center.**

The International Astronautical Federation (IAF) together with the Centre Royal De Télédétection Spatiale (CRTS) and with the support of the Centre National D'Études Spatiales (CNES) are very proud to officially invite you to the Global Conference on Space for Emerging Countries (GLEC2019) to be held in Marrakech, Morocco from 24 to 26 April 2019.

Being the first Conference of its kind, GLEC2019 aims at actively engaging emerging countries in the global space sector by highlighting the socio-economic benefits of space applications; by understanding the various financial models for the optimal resourcing of national space programmes; by identifying opportunities for technology and skills transfer; by creating awareness about the base infrastructure requirements needed for operationalizing national space programmes and by creating awareness on the essential legislative and policy elements that must be considered in establishing the foundation for national space programmes.

High-level Keynotes and Round Tables focusing on:

- **Benefits of Space Technology and Applications to Socio-Economic Development,**
- **Financial Models and Resourcing,**
- **Technology and Skills Development,**
- **Base Infrastructure Requirements,**
- **Space Industry Development and Support,**
- **Legal and Policy.**

IPC Co-Chairs :

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

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

Valanathan Munsami
VP: Developing Countries and
Emerging Countries, IAF,
Chief Executive Officer (CEO),
South African National
Space Agency (SANSA),
South Africa

Conference at a glance:

	08:00	09:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00
24 April	Registration	Opening Ceremony	High Level Keynote	Coffee Break	High Level Panel Part 1: Benefits of Space Technology and Applications to Socio-Economic	Welcome Lunch	High Level Panel Part 2: Benefits of Space Technology and Applications to Socio-Economic	Coffee Break	Plenary 1: Financial Models and Resourcing	Welcome Reception				
25 April	Registration	Plenary 3: Technology and Skills Development	Coffee Break	Plenary 4: Base Infrastructure Requirements	IDEA Lunch	SGAC/IAF Seminar								Gala Dinner
26 April	Registration	Plenary 5: Space Industry Development and Support	Coffee Break	Plenary 6: Legal and Policy	Lunch	Results & Recommendations of Plenary 6	Closing							

For more information:

Website: www.glec2019.org
E-mail: glec2019@iafastro.org

Be part of the conversation
@iafastro and #GLEC2019



Bridging the Space Divide in Emerging Countries



IAC 2019



The IAC 2019 will be very special, as next year will mark the 70th anniversary of the IAC as well as 50 years since the first Moon human landing. It is with great pleasure that we cordially invite you to submit an abstract for the 70th International Astronautical Congress to be held in Washington, D.C.

Join us in Washington D.C. next year for the 70th IAC, an unforgettable event!

**70th INTERNATIONAL
ASTRONAUTICAL CONGRESS**

**21-25 October 2019
Washington, D.C.**

Space: The Power of the Past, the Promise of the Future



IAC2019.ORG

#ThisDayInSpace

Who broke the record for the longest single spaceflight by a woman? Do you know Mae Jemison? When did the Cassini-Huygens probe burn out? What is the name of the inventor of the "formula of aviation" for rocket propulsion? Do you remember when Arnaldo Tamayo Mendez became the first Latin American to fly in space? What is Alouette-1? How many African countries have a presence in space? Did you know that a married couple flew together in space? When was the Zero-G (gravity) 3D printer launched onboard Space X CRS-4.

Find out on the new #ThisDayInSpace IAF videos celebrating the history of Space:
<http://www.iafastro.org/publications/media-center/this-day-in-space/>



Report of the Committee for Liaison with International Organizations and Developing Nations (CLIODN), Bremen, Germany

The Committee for Liaison with International Organizations and Developing Nations (CLIODN) advises the President and the Bureau of International Astronautical Federation on opportunities to foster international cooperation in space programmes, to encourage public interest in astronautics and its application in developing countries and to promote interest in using space science and technology for national development activities in all countries. The Committee acts as liaison with international organizations, governmental and nongovernmental, and provides advice to the Federation on relations with these international organizations. In particular, the Committee considers and recommends steps to stimulate interest in the Federation's activities among institutions and individuals from the developing countries, taking into consideration the emergence of space activities in several developing nations.

The Committee Chair and committee members work closely with the IAF Secretariat and with the United Nations Office of Outer Space Affairs in supporting approved projects including the annual Highlight in Space report on outer space activities and the UNIAF Workshop on the Use of Space Science and Technology for the Benefits of Developing Countries held in conjunction with the International Astronautical Congress. This years UN/IAF workshop focused on "Space Technology for Socio-Economic Benefits: "Industry, Innovation and Infrastructure for Development (3Is4D)". The workshop aimed at discussing space science, technologies and applications in support of economic, social and environmental development with a focus on the role of industries as key player to offer innovation and infrastructure needed for sustainable development.

Additionally, this year the CLIODN Committee jointly organized and moderated with the IAF Vice President for Developing Countries and Emerging Members the Global Networking Forum on "The role of Education in Support of Emerging Countries". The event included interventions by Simonetta Di Pippo, Director of UNOOSA, Francisco Javier Mendieta Jiménez, Director General of the Mexican Space Agency, Driss El Hadani, Director of Center Royal de Teledetection Spatiale, Kai-Uwe Schrogl, IISL President and ESA Chief Strategy Officer, Roberto Battiston, President of the Italian Space Agency (ASI), Seishiro Kibe, IAF VP and Advisor, Japan Aerospace Exploration Agency and Jörg Feustel-Büechl, Advisor to the Bavarian State Ministry for Economic Affairs and Media, Energy and Technology. The event was moderated by Valanathan Munsami, VP for Developing Countries and Emerging Members and Christina Giannopapa, CLIODN Chair.

NEWS!



EUMETSAT – on the cusp of a new era

EUMETSAT is delighted to be taking part in this year's IAC in Bremen at a particularly important time in the organization's history.

After the successful launch of Copernicus Sentinel-3B in April, EUMETSAT is preparing to take over spacecraft operations from ESA in November and begin the operational release of the mission's marine data stream.

Also scheduled for November is the launch of the final spacecraft in the EUMETSAT Polar System (EPS) – Metop-C. Metop-C's sister spacecraft – Metop-A and –B – are both still operational and have brought about a new era for numerical weather prediction in Europe, and worldwide, for forecasts 12 hours to 10 days in advance. We expect Metop-C to contribute still more to these benefits for society.

Meanwhile, EUMETSAT is preparing for the launches of the next generations of its geostationary and polar-orbiting satellites – Meteosat Third Generation and EPS-Second Generation – within the next few years. The ocean-monitoring Jason-CS/Sentinel-6 is scheduled for launch in 2020. The control centre in Darmstadt has been undergoing a major upgrade to handle more satellites and the massive increase in data they will generate.

All of this is undertaken with the aim of protecting lives, communities and industries by improving understanding of the weather and climate.

We'd love to talk to you about this in Bremen!
(Exhibition Hall 5 stand B25)



Artist's impression of a Metop satellite in orbit



USC Viterbi students earn win from NASA competition with unique Mars transport design

University of Southern California (USC) Viterbi School of Engineering students won first place in the graduate division of NASA's space travel competition, Revolutionary Aerospace Systems Concepts – Academic Linkage (RASC-AL). The competition culminated in a three-day long forum held in Cocoa Beach, Fla. from June 18-21.

As part of the competition, students design and analyze spacecraft and architectures that will yield long-distance space travel. The USC Viterbi team led by graduate and undergraduate students from the Department of Astronautical Engineering designed a vehicle for the theme "Artificial Gravity Reusable Crewed Deep Space Transport." The team's mission: a spaceship with an artificial gravity similar to Mars that can last for three missions to and from Earth over a span of 15 years.

To simulate the gravity of Mars, the team, advised by astronautics Research Professor David Barnhart designed a spaceship that spins at three rotations per minute. Their design also included an expandable truss system to account for mass changes as fuel and resources are consumed, and an aerobraking system that converts the solar panels into "parachutes."



The 2019 AIDAA Congress is the biennial Congress of the Italian Association of Aeronautics and Astronautics.

AIDAA was formed in 1969 through a merging of the former Societies AIDA (Associazione Italiana di Aerotecnica formed in 1920) and AIR (Associazione Italiana Razzi).



In 1951, AIDA was among the founders of the International Astronautical Federation (IAF).

The AIDAA 2019 International Conference will be held on September 9-12 at the Faculty of Civil and Industrial Engineering of the Sapienza University of Rome, Via Eudossiana n. 18, 00184 Roma located in the center of Rome.

The goal of the Conference is to promote the exchange of scientific information in the Italian and international community in all the areas of aerospace science and technology: Aerodynamics and Fluid Dynamics, Propulsion, Materials and Structures, Aerospace Systems, Flight Mechanics and Control, Space Systems and Missions, Space Law and Space Medicine. The Congress Programme will include Plenary and Keynote Lectures, several Symposia on Aeronautics and Aerospace topics as well as technical workshops on subjects of industrial interest. Please find the Call for Papers with the Congress Topics at: www.aidaa2019.com

TUTORIAL 3: PLANETARY PROTECTION 101, IAC, PPOSS 3rd TUTORIAL



The main objective of the PPOSS seminar is to provide a tutorial on the basics of Planetary Protection. The seminar will be structured around the current international policy framework for Planetary Protection and cases studies attached to the different planetary protection categories recognized in the COSPAR policy. The seminar will be held in English. Expected size of the tutorial: 100 participants.

Date: Saturday, 29 September 2018, 08:00 – 18:00

Location: Room CCB Focke Wulf Saal

More information on: <http://pposs.org/pposs-tutorial-iac/>



The Canadian Space Society

The Canadian Space Society proudly announces the 2018 Canadian Space Summit, co-hosted with the Satellite Canada Innovation Network (SatCan). The Canadian Space Summit is Canada's only annual conference dedicated to the whole of the Canadian space industry. Since 2000, the Summit has reached thousands of Canadian and international stakeholders from government, industry, academic and public roles. The theme for the 2018 Summit is "Canada's Place in Space", in anticipation of a long-awaited space policy to be revealed later this year.

This year, the Summit combines three exceptional events:

- The 18th annual Canadian Space Summit, to discuss Canadian achievements, future opportunities and international collaborations in the space sector;
- The Canadian Space Policy Symposium, to specifically address policy-related topics in the Canadian space sector;
- SatCom Canada Workshop, to focus on the massive disruption in satellite communications coming from LEO constellations and the Internet of Things.

All three events take place at the Brookstreet Hotel in Ottawa, Ontario, Canada from November 27th to 29th.

Sponsorship opportunities are available. For more information, please visit: <https://css.ca/summit/canadian-space-summit-2018/> or email summit@css.ca.

We look forward to seeing you there!

The Canadian Space Society is a national non-profit organization and charity, made up of enthusiasts of all backgrounds pursuing and exploration and development of space. Our principal objective is to sponsor and promote the involvement of Canadians in the space sector. www.css.ca

Satellite Canada Innovation Network is a registered not-for-profit with the mandate to grow Canada's space industry through collaborative technology development and commercial support programs. www.satellitecanada.org

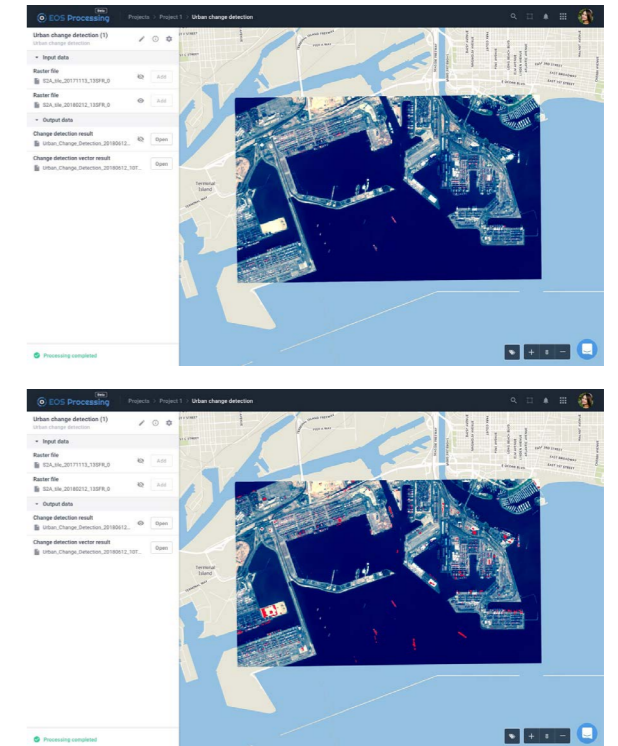
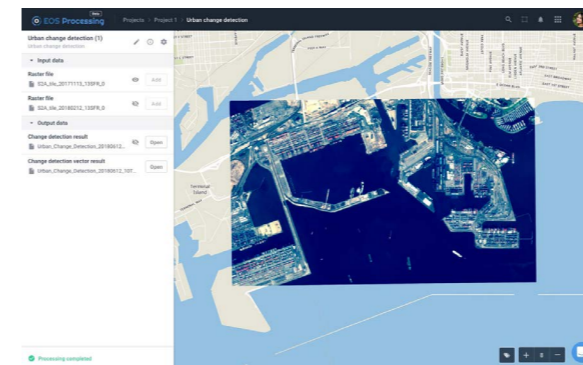


New GIS platform and high-resolution data for better analysis

EOS Data Analytics company, whose cloud products are designed to transform satellite imagery into actionable insights, has launched [EOS Platform](#). Comprised of 4 powerful GIS tools, the platform allows for uninterrupted, high-speed analysis in browser. Users get access to petabytes of satellite imagery, their own cloud storage, tools to derive on-the-fly remote sensing indices, apply AI-enabled image processing algorithms, and extended mapping capabilities.

Recently, EOS' flagship tool [LandViewer](#) expanded its satellite data catalog by adding high-resolution imagery from the world's leading satellite companies – Airbus, SI Imaging Service and Space View. It now features multispectral optical and radar images that resolve between 8 and 0.25 meters, update frequently or even daily, and have applications across multiple industries.

Whenever the need for rapid imagery acquisitions arises (crisis mapping), Pléiades 1 twins or SPOT-6,7 satellites prove most useful in providing daily coverage. The archive data for multitemporal analysis can be sourced from KOMPSAT-2,3 constellation and SPOT-5 satellite, while for all-weather data one can turn to TerraSAR-X and KOMPSAT-5 radar imagery. Along with the Chinese satellites' optical data (Gaofen, SuperView), there's also a much rarer Ziyuan-3 stereo imagery, vital for 3D modeling and DEM extraction.



Changes in Long Beach seaside identified with the help of urban change detection algorithm.



'First Women on the Moon' 100-word Essay Contest

International Lunar Observatory Association is sponsoring 'First Women on the Moon' 100-word Essay Contest due 5 October for a Grand Prize all-expenses-paid participation at **Galaxy Forum Hainan 2018: China** with themes International Human Moon Missions and Astronomy from the Moon being held 4-7 December 2018 at Hilton Wenchang. Essay contest open to all women 21 years or older. Visit www.iloa.org/1stWomenontheMoon.pdf for contest details and www.bit.ly/GFH2018 for Galaxy Forum info.

Galaxy Forum Hainan, co-sponsored by CSA, IAF, NAOC and CSA-ASC, will include Astronaut Yang Liwei, Dr. Aldrin, Ziyuan Ouyang, Christian Feichtinger, Gilles Leclerc, Emeline De Antonio, Maria Antonietta Perino, Steve Durst, Chris Sallaberger, Henk Rogers, Takeshi Hakamada and others. Luncheon panel "First Women on the Moon" features Soyeon Yi, Naoko Yamazaki, women Astronauts from China, USA, and potentially an Apollo Moonwalker. Attendees are international lunar

scientists, engineers, space agency experts, space community professionals and entrepreneurs. The principal objective of Galaxy Forum Hainan is to help realize Humans on the Moon as soon as reasonably possible.

ILOA is an interglobal 501(c)(3) non-profit incorporated in Hawai'i to realize the multifunctional ILO - to advance knowledge of the Cosmos through observation from our Moon. Since 2008 ILOA has cosponsored 85 Galaxy Forums Worldwide.



As known, the SpaceLand group has set several world-records such as preparing underwater and bringing the world's first person with disabilities (Elma Schippa, in April 2005, paving the way to Stephen Hawking's flight afterwards), the world's oldest man (93-year-old Cesare Massano, in 2007) and the world's youngest kid (Carlo Viberti's son, namely 11-year-old Kim Marco Viberti, in 2008) to fly as science research test subjects and technology test-operators in weightlessness for major research programs, involving also Nobel Prize winners, taking off from the NASA Space Shuttle Landing Facility at Cape Canaveral.

Such results contributed to demonstrate that **"humanizing Space, Microgravity, Technology and Science"** is possible; moreover, this goal is also essential to bring citizens closer to the state-of-the-art knowledge, enhancing everybody's quality of life thanks to the opportunities and benefits of Space and microgravity R&D programs. In this light, the upcoming 4th SpaceLand Forum will cover the following areas related to 3-G aerospace and STEM disciplines (Gender, Generation, Geography)

- women from the Earth to Mars: from construction of ground facilities to planetary habitats, from female designers to payload specialists & astronauts ;

- the young generations toward Mars: lessons learnt with pioneers of Space & Microgravity programs ;
- international opportunities to support Africa's future in Aerospace-related STEM: business and entrepreneurs ;
- 3-G opportunities in the Zero-G, Moon-G and Mars-G facilities being developed in Mauritius

Further details on www.iafastro.org/evenements/4th-spaceland-forum/ : set your your calendar for 15-17 December to enjoy the beautiful island of Mauritius, with SpaceLand !



UN COPUOS Working Group Reaches Agreement on 21 Guidelines to Promote Space Sustainability

The growing number and diversity of space actors, and the rapidly increasing number of space activities, poses great opportunities as well as great challenges to the long-term sustainability of outer space activities. Through its committees and IAC symposia, the Federation promotes the exchange of ideas and dialogue to support and collectively strengthen space sustainability, space safety and space security. In this regard, the IAF is pleased to note the progress made by the Working Group on the Long-Term Sustainability of Outer Space Activities under UN COPUOS, the United Nations Committee on the Peaceful Uses of Outer Space. The process, which was led by Dr Peter Martinez of South Africa since 2011, has concluded its mandate with 21 voluntary guidelines and a politically important context-setting preamble for these guidelines.

The process, which began in 2010, received formal inputs from the IAF during the sessions of UN COPUOS. The IAF also facilitated discussions of relevance to the UN process among experts in various IAF Committees and in symposia at International Astronautical Congresses with sessions dedicated

to the topic. The process also received support from the IAF and local organizers of the International Astronautical Congresses in Prague (2010), Cape Town (2011), Naples (2012) and Beijing (2013), all of whom created opportunities for experts to hold special meetings on the margins of these IACs to advance the UN process.

The earliest discussions in COPUOS were initiated and promoted by former IAF Vice President Gérard Brachet of France. Mr Brachet, who was the Chair of the COPUOS for the period 2006–2008, made great efforts to raise awareness of the urgency of addressing the space sustainability issue in the Committee. In 2010, COPUOS established a Working Group on the Long-Term Sustainability of Outer Space Activities under its Scientific and Technical Subcommittee. The Working Group was tasked with producing a set of voluntary guidelines for all space actors to help ensure the long-term sustainable use of outer space. The Working Group's mandate ended in June 2018 at the 61st session of UN COPUOS. During its mandate, the Working Group agreed on 21 guidelines and a context-setting preambular text that included the following definition of space sustainability:

The long-term sustainability of outer space activities is defined as the ability to maintain the conduct of space activities indefinitely into the future in a manner that realizes the objectives of equitable access to the benefits of the exploration and use of outer space for peaceful purposes, in order to meet the needs of the present generations while preserving the outer space environment for future generations.

Although this Working Group was able to agree on 21 guidelines by full consensus of all the COPUOS Member States, agreement could not be reached on seven draft guidelines by the time the Working Group's mandate came to an end in June 2018. The Working Group did not reach consensus on the way forward for these draft guidelines, but it did agree to continue discussion of the long-term sustainability of outer space activities under a dedicated agenda item of the Scientific and Technical Subcommittee of COPUOS in 2019. This Subcommittee will meet again in February 2019 to decide on the way forward for the LTS discussions.



IAC 2018 Matchmaking!

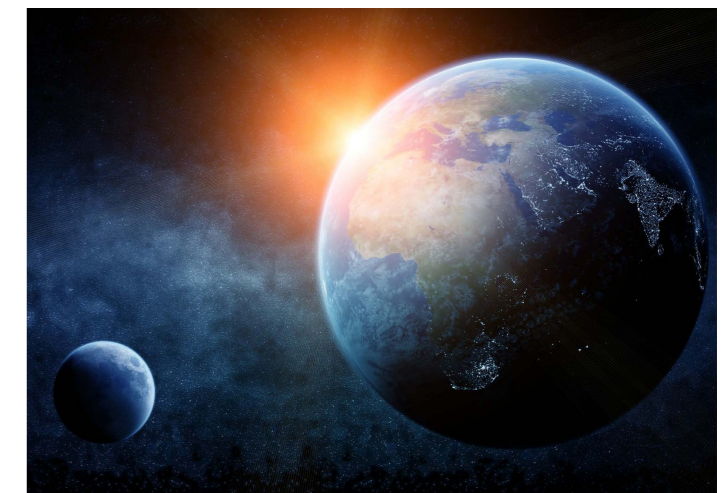
Don't miss to register for IAC 2018 Matchmaking!

As Local Organizer of IAC 2018, the Center of Applied Space Technology and Microgravity of the University of Bremen (ZARM) is happy to offer the complementary service of IAC 2018 Matchmaking to all delegates at this year's congress! We have teamed up with Enterprise Europe Network Bremen to offer this free service to all attendees and exhibitors. If you are interested in using this service just register online on www.iac2018.b2match.io, complete your profile and start booking meetings! The matchmaking will take place from 1 - 4 October 2018 in the exhibition hall right next to the Bremen - City of Space booth (5D 25)!

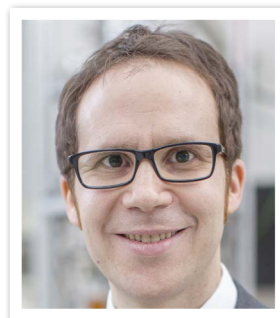
What is Matchmaking?

Bilateral meetings (Matchmaking) are a quick and easy way to meet potential cooperation partners, customers and suppliers. Attendees meet and greet in 20-minute intervals, then the bell rings and the next discussion begins. Instead of arranging meetings by chance, our matchmaking sessions guarantee fixed reserved tables for every meeting. A great opportunity to enhance your network!

As delegates, please do take advantage of this free service. You can register until 28 September, but the earlier you are, the better the chance to get most out of it! You can find more information on www.iac2018.b2match.io!



Interview with **Marc Avila**, Director of the Center of Applied Space Technology and Microgravity (ZARM)



Marc Avila studied mathematics at the Universitat Autònoma de Barcelona and at the University of Glasgow. From 2005 to 2008 he did his doctorate on fluid mechanics at the Universitat Politècnica de Catalunya in Barcelona. Half of his graduation time he spent at the Arizona State University as a research scholar. After his graduation, he was a postdoc at the Max-Planck-Institut für Dynamik und Selbstorganisation in Göttingen working with Prof. Björn Hof. From 2011 to 2016 he held a professorship for simulation in nano- and microfluidic mechanics in the Friedrich-Alexander-Universität Erlangen-Nürnberg. Since March 2016 he is the Executive Director of the Center of Applied Space Technology and Microgravity (ZARM) and Professor for fluid mechanics at the Faculty of Production Engineering

of the University of Bremen. For his work on turbulence he received the Young Scientist Award of the European Mechanics Society in 2009, and in 2018, he was awarded the Richard-von-Mises Prize of the International Association of Applied Mathematics and Mechanics (GAMM). He aims at supporting the new generations of young scientists and engineers, as well as increasing the impact of science beyond the scientific community.



1. What is your overall impression of this year's IAC?

I feel a great excitement in the space community for the IAC to return to Europe and Germany after many years. Bremen, which we like to call the City of Space, has been preparing for this event since the beginning of this year with plenty of activities related to space that will culminate with the IAC 2018. Given this global and local excitement I anticipate a very successful IAC at all levels. Because of the record in abstract submissions, the IPC had a hard time. Overall, I think that ICP has done an incredible job, with for example the plenary event "Game Changers" catching the spirit of #InvolvingEveryone in the best possible way.

In addition to the official programme, there will be technical visits for students and young professionals to find out what it is like to work with the global space players located in Bremen. Moreover, we will be offering free classes in off-the-job skills that can possibly enhance your daily routine at home, like camera training, graphic recording, Tai Chi and 8-minute relaxation exercises. We will provide free daily child care for young families and a free public transport pass for the whole week for all participants so everyone can make the most of their time during the IAC and their spare time in Bremen. We at ZARM and Team Germany will do our best to host an IAC that you will remember with a smile on your face.

2. The IAC 2018 has many events, which ones do you particularly recommend not to be missed?

I certainly recommend not to miss the host plenary, though I may be biased here. In addition to this, I would like to encourage all attendees to come early to enjoy the performance of the German Philharmonic Orchestra during the Opening Ceremony. Also not to be missed is the public event 'space is big – space is public' with a live call to Alexander Gerst who will then become the first German commander of the ISS. And last but not least, in the week of IAC the whole city of Bremen will be alive with space

activities – including in the pubs and night clubs. On Thursday night, during the Yuri's Night @IAC 2018 event in the Modernes, the IAC community has the chance to mix with all the young space enthusiasts from Bremen or to watch the world premiere (for IAC participants only!) of the bio-pic on Neil Armstrong "First Man" on Wednesday night. So everyone should use the chance to enjoy the IAC 2018 even outside the conference premises.

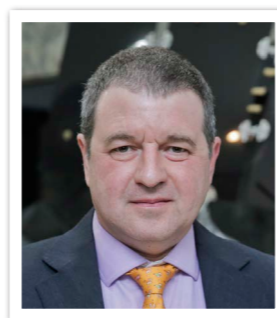
3. Why, as the IAC 2018 Host, did you decide to focus your Host Plenary on research under space conditions?

Well, as a research institute this is our focal point. We use space technologies - from our Bremen Drop Tower, to parabolic flights, sounding rockets and the ISS - to advance science and foster innovation. This year we celebrate the Space Station's 20th anniversary in orbit, so it is the perfect occasion to highlight the achievements of microgravity research to date. But of course, the ISS is not the end, we hope to see researchers working on Moon and Mars in the future, and we will address this in the plenary talk as well!

4. What would you like to see implemented after the IAC 2018 in the space sector?

Unfortunately, I have too many wishes! First, I hope to see more private money invested in risky but innovative space endeavours. Especially in Europe, there is a lot of work to do in this direction. In addition, we need modern structures to attract more young people to space sector, for example by promoting a good life-work balance. I also hope for more investment in fundamental science in space. And maybe a final wish: that at IAF we keep active as a united global community with a joint human vision. This is especially important in times when local affairs seem to eclipse global development.

Interview with **Raúl Kulichevsky**, Executive and Technical Director of the National Commission on Space Activities (CONAE)



Eng. Raúl Kulichevsky, the Executive and Technical Director of the National Commission on Space Activities (CONAE), is responsible for the implementation of the National Space Program of Argentina, a long-term strategic plan that seeks to develop national capacities to provide the country's socio-economic and productive sectors access to the information that space technology can offer, in order to increase their productivity and competitiveness. To this end, CONAE develops its own satellite missions and their related ground segments, as well as access to space and programs for reaching the user communities. Prior to becoming Executive and Technical Director, he has served as Manager to CONAE's Projects SARE 2 (Segmented Satellite Architecture), SAOCOM (L-Band SAR Mission) Flight Segment and payload development for TRONADOR II launch Vehicle.

Before entering CONAE, he worked in the National Atomic Energy Commission of Argentina (CNEA) as Responsible of Instrumentation and Operations of the Structural Components Studies and Testing Group, and as Deputy Chief of the "Synthetic Aperture Radar Antenna" (ARAS) Sub-Project (Agreement CNEA-CONAE) for development and fabrication of the SAOCOM SAR antenna structure and mechanisms.



1. Can you tell us something about the Argentinian National Commission of Space Activities (CONAE) and its most recent achievements?

CONAE is the national space agency of Argentina. It functions under the umbrella of the Ministry of Education, Culture, Science and Technology, and it is the national organization with the mandate to define and implement the National Space Program. The main goal of this long-term strategic plan is the development of knowledge and infrastructure technology so that socio-economic and productive sectors of our country have access to the information that space technology can offer, in order to increase their productivity and competitiveness. Space information is highly valuable for government management, scientific and technological areas, productive sector and federal planning. To this end, CONAE develops its own satellite missions and their related ground segments, as well as access to space and programs for reaching the user communities.

CONAE's national Ground Segment is composed of the Cordoba Ground Station and the Tolhuin Ground Stations (in Tierra del Fuego Province), which provide TT&C and Data Acquisition services.

Since its creation in 1991, CONAE has developed and flown, in partnership with NASA four satellite missions, which were designed and built in Argentina: SAC-A, SAC-B, SAC-C and, the latest one, SAC-D/Aquarius. This series included participation from ASI (Italy), CNES (France), DSR (Denmark) and AEB/INPE (Brazil), and CSA (Canada).

The upcoming mission is SAOCOM, consisting of the two identical satellites, SAOCOM 1A and 1B, each of which carries an L-Band SAR (Synthetic Aperture Radar) polarimetric instrument. Its main purpose is to provide soil moisture information about the central Pampean Area in Argentina. SAOCOM, together with the Italian COSMO-SkyMed constellation are part of cooperation with the ASI: the Italian-Argentine Satellite System for Emergency Management (SIASGE). With both constellation flying along the same orbit will enable a rapid response in the

provision of SAR information at emergency situations. SAOCOM has also participation of ESA's ground segment and technical support from CSA and NASA. The SAOCOM satellites will be launched with SPACE X's Falcon 9 launchers. SAOCOM 1A is scheduled for launch on October 6, 2018 and 1B, one year later. Also, CONAE is taking its first steps into the field of interplanetary studies, through cooperation with international partners, ESA and China.

CONAE also promotes the regional development of human capacities with several training and education programs (from elementary to Master levels, in collaboration with national universities), and the organization of activities to foster the use of space information in disaster management, health applications, land use, and monitoring of environmental and productive activities through the Gulich Institute for Advanced Space Studies, located in the Space Center in Cordoba.

2. This will be the third edition of the International Space Forum, why did you decide it was now the time for a Latin American chapter?

In recent years, Latin America has experienced rapid growth in the development of space technologies capacities with the creation of national space agencies, and we understand that this Forum is important to give visibility to this growth. The three main goals of the meeting are Education and Capacity Building, Management of natural resources and prevention of disasters, and space partnerships, all of which are central issues in this development.

3. How do you see in Latin America in particular a greater involvement of Universities and national Academies into space activities?

The universities, and their research capacities, together with the industrial sector, are fundamental players that contribute significantly to the development of the space architecture in the region defined by the space agencies.



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