68th IAC

International Astronautical Congress

ADELAIDE, AUSTRALIA
25 - 29 SEPTEMBER 2017

FINAL PROGRAMME

www.iac2017.org

Industry Anchor Sponsor

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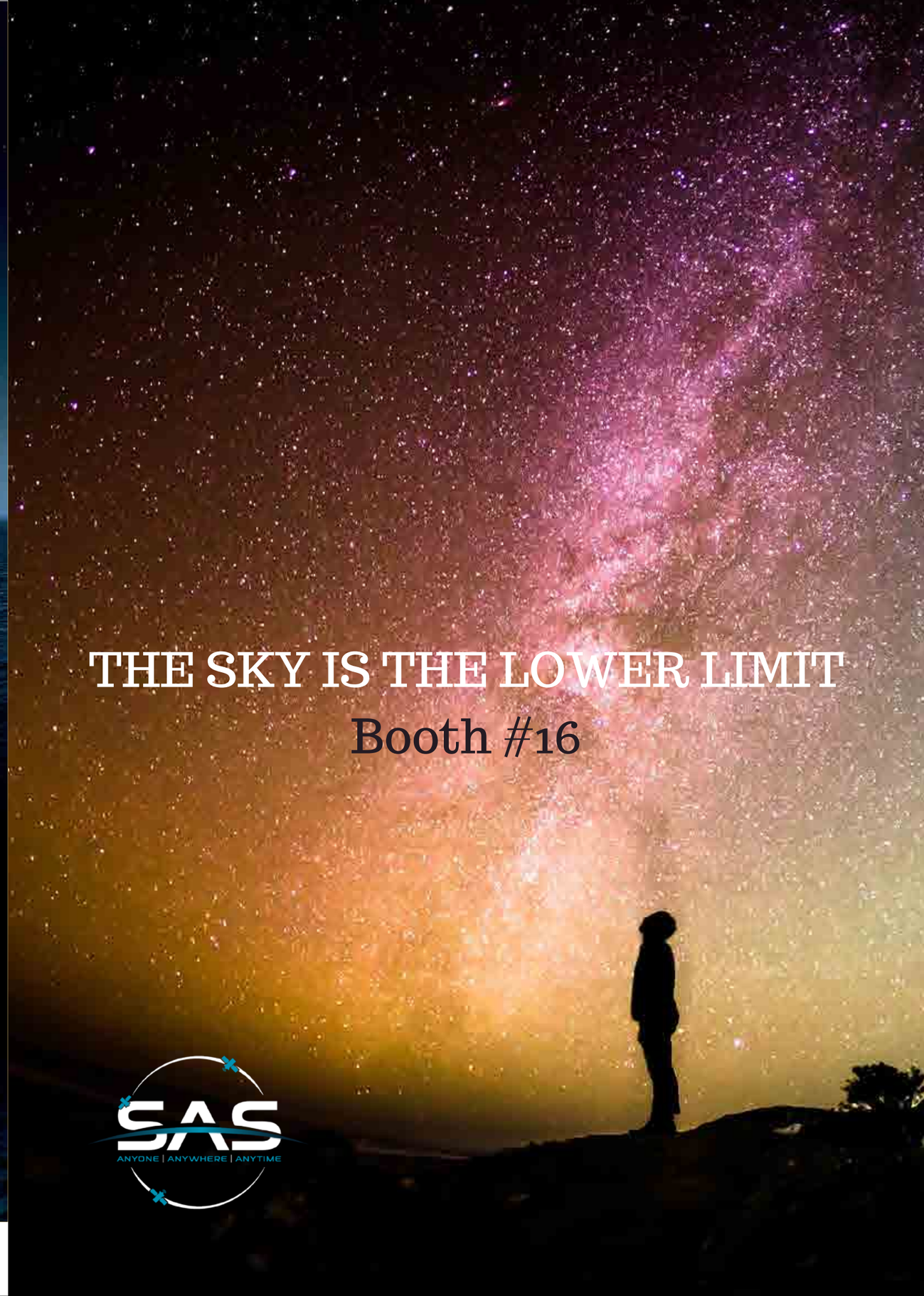

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Contents

1 Welcome Messages

1.1 Message from the President of the International Astronautical Federation

Welcome to the 68th International Astronautical Congress (IAC) here in Adelaide! A lot of you have travelled many miles to participate in this year's congress in Australia. With the fantastic programme we have put together and the unique attractions that Australia has to offer, I am sure delegates will feel that it was well worth coming all this way to attend.

The theme of this year is "Unlocking Imagination, Fostering Innovation and Strengthening Security". Adelaide is an innovative city full of start-ups and fired by an entrepreneurial spirit. For innovation to grow, imagination and a creative mindset are necessary, but policies that support entrepreneurs are just as important. I look forward here to reflecting on how we can create a suitable environment to foster innovation in the space industry.

This year we have divided the congress main publication into two parts: the Final Programme dedicated to the Plenaries, GNF, Exhibition and general information, and the Technical Programme. The congress will cover a wide range of topics, of course we have also included an outstanding exhibition and several social and associated events, so you can expect a busy week here in Australia.

I would like to thank the Local Organising Committee and the IAF Secretariat, who have both worked tirelessly to put together this extraordinary event. But this Congress would not be possible without the hard and dedicated efforts of numerous people. I would therefore like to express my sincere gratitude and appreciation to the IAA, IISL and the International Programme Committee, and also to thank all of the volunteers and event organizers that are part of this congress.

Be sure to make the most of this splendid week by attending all your events of interest, and by networking and experiencing Australia. In a word: enjoy this IAC!

Jean-Yves Le Gall
President,
International Astronautical Federation

1.2 Message from the Chair of the Local Organising Committee

Welcome to Australia and to Adelaide.

The Space Industry Association of Australia is proud to host the 68th IAC in the stunning Adelaide Convention Centre.

We have much to celebrate in the rich history of Australia in space. Our involvement commenced 70 years ago when the Woomera test range was established in the desert 600 kilometres north of Adelaide. Australia's first satellite was launched from Woomera 50 years ago. Satellites have become essential to our national economy and our daily lives and over 10,000 Australians are employed in our space and satellite applications sector.

Australia has for many years played a key role in supporting space exploration and we enjoy longstanding partnerships with both NASA and ESA in hosting their deep space tracking facilities. 48 years ago the first steps of Neil Armstrong on the surface of the moon were beamed to the world through a ground station near Canberra, Australia's capital city.

The Australian space sector is enjoying rapid growth and we hope you will meet some of our new space entrepreneurs who are taking advantage of the dramatic changes in the cost of accessing space to build new businesses and offer new services, as well as our more established space industry members.

The 68th IAC has come to Adelaide as a result of teamwork and support from many organisations and people. In particular we acknowledge and thank the Commonwealth Government, the Government of South Australia and the Adelaide City Council. We also acknowledge the generous support of Lockheed Martin, our industry anchor sponsor.

Our aim is for every delegate to have a professionally rewarding time at the IAC and to enjoy the unique experiences that Adelaide and Australia offer. We know you will see some amazing sights, enjoy good food and wine, and experience warm Australian hospitality.

Michael Davis
Chair,
Space Industry Association of Australia and the Local Organising Committee

1.3 Message from the International Programme Committee (IPC) Co-Chairs

Dear Colleagues and Friends,

We are pleased to welcome you to the 68th International Astronautical Congress, in Adelaide, Australia. It has been 19 years since the IAC was last held in Australia, and we are excited to welcome the space community back to our shores for a stimulating programme under the theme "Unlocking Imagination, Fostering Innovation and Strengthening Security".

The IAC and associated events bring together the leaders and innovators of the space industry. Delegates have unprecedented access to global experts through the Plenary Programme, Highlight Lectures, and Late Breaking News. The Global Networking Forum and Exhibition showcase new commercial activities and programmes that support the growth of our industry. The Technical Programme provides a platform for researchers to showcase their latest discoveries, new technologies, future mission plans and their analysis of the legal, commercial and policy environment we operate in.

The impact of the IAC is expanded by the range of associated events including the world finals of the Manfred Lachs Space Law Moot Court, the Space Generation Congress, the International Meeting for Members of Parliament, the IAA Academy Day, and the Educators Professional Development Workshop.

The IAC is evolving to include interactive presentations which allow authors to demonstrate digital content such as simulations and models, and virtual participation which is opening the IAC to the world.

In addition to this very rich technical programme we hope delegates will participate in the social activities and tours that provide networking opportunities, a chance to experience Australian hospitality and an opportunity to learn more about Australia's space capability.

This year we celebrate three significant anniversaries. The 60th anniversary of the launch of Sputnik, the 50th anniversary of the signing of the Outer Space Treaty and the 50th anniversary of the launch of Australia's first satellite (WRESAT) from Woomera in South Australia.

Such a comprehensive programme is only possible due to the efforts of a global network of dedicated volunteers. The IPC Co-Chairs would like to thank the members of the International Programme Committee, the IAF Secretariat and the Local Organising Committee.

Welcome to Adelaide and we wish you all the best for a successful and enjoyable IAC 2017!

Naomi Mathers
IPC Co-Chair,
Space Industry Association of Australia (SIAA), Australia

Christiane Schmullius
IPC Co-Chair,
Friedrich-Schiller-University (FSU), Germany

2 Organisers

2.1 The International Astronautical Federation (IAF)

Created in 1951 to foster dialogue between scientists around the world, and to support international cooperation in all space-related activities, the IAF to this day continues to connect space people. The Federation is the world's leading space advocacy body with over 320 members, including all key space agencies, companies, societies, associations and institutes across 6 continents and 67 countries. Over 40 administrative and technical committees support the Federation in its mission to advance knowledge about space and to foster the development of space assets by facilitating global cooperation. At its annual International Astronautical Congress (IAC) and other thematic conferences, the IAF brings its multidisciplinary and international network to life.

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Access e.V.	Germany
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Aerojet Rocketdyne	United States
Aerospace Research Institute	Iran
Aexa Aerospace LLC	United States
Agence Spatiale Algérienne (ASAL)	Algeria
Agencia Espacial Mexicana (AEM)	Mexico
Agrupacion Astronautica Espanola	Spain
Airbus Defence and Space Ltd	United Kingdom
Airbus Defence and Space Netherlands B.V.	The Netherlands
Airbus Defence and Space SA	Spain
Airbus Defence and Space SAS	France
Airbus DS GmbH	Germany
American Astronautical Society (AAS)	United States
American Institute of Aeronautics and Astronautics (AIAA)	United States
Andøya Space Center	Norway
Arianespace	France
Asher Space Research Institute (ASRI)	Israel
Association Aéronautique & Astronautique de France (3AF)	France
Association Dedicated to Development in Astronautics (A.D.D.A)	Romania
Association of Arab Remote Sensing Centers (AARSC)	Libya
Association of Space Explorers (ASE)	United States
Associazione Italiana di Aeronautica e Astronautica (AIDAA)	Italy
Astronautic Technology SDN BHD	Malaysia
Astronautical Society of India	India
Astrosat Limited	United Kingdom
ASTROSCALE Pte. LTD.	Singapore, Republic of
ATUCOM - Tunisian Association for Communication and Space Sciences	Tunisia
Auspace Pty Ltd.	Australia
Austrian Research Promotion Agency	Austria
Austrospace	Austria
Bauman Moscow State Technical University	Russian Federation
Beihang University	China
Beijing Sunwise Space Technology Ltd.	China
Belgian Federal Science Policy Office (BELSPO)	Belgium
Blue Origin LLC	United States
Brazilian Space Agency (AEB)	Brazil
Bryce Space and Technology	United States
Bulgarian Aerospace Agency	Bulgaria

California Polytechnic State University	United States
Canadian Aeronautics & Space Institute (CASI)	Canada
Canadian Space Agency	Canada
Canadian Space Commerce Association (CSCA)	Canada
Canadian Space Society	Canada
Center for Planetary Science and Exploration, Western University	Canada
Center of Space Exploration, Ministry of Education (COSE)	China
Central American Association for Aeronautics and Space (ACAE)	Costa Rica
Central Research Institute for Machine Building (FGUP TSNIIMASH)	Russian Federation
Centre for Mechanical and Aerospace Science and Technologies (C-MAST)	Portugal
Centre National de la Cartographie et de la Teledetection (CNCT)	Tunisia
Centre National d'Etudes Spatiales (CNES)	France
Centre Royal de Teledetection Spatiale	Morocco
Centro de Investigacion y Difusion Aeronautico Espacial (CIDA-E)	Uruguay
China Head Aerospace Technology Co.	China
Chinese Society of Astronautics (CSA)	China
CIRA Italian Aerospace Research Centre	Italy
Comision Nacional de Actividades Espaciales (CONAE)	Argentina
Commission d'Astronautique de l'Academie Roumaine	Romania
Cosmoexport Aerospace Research Agency	Russian Federation
Croatian Astronautical and Rocket Federation (HARS)	Croatia
CSIRO Astronomy & Space Science	Australia
CSL (Centre Spatial de Liège)	Belgium
Curtin University	Australia
CVA (Community of Ariane Cities)	France
Cyprus Astronautical Society	Cyprus
Cyprus Space Exploration Organisation (CSEO)	Cyprus
Czech Space Alliance	Czech Republic
Czech Space Office	Czech Republic
Danish Aerospace Company ApS	Denmark
Danish Astronautical Society	Denmark
Dassault Aviation	France
Deimos Space S.L.	Spain
Delft University of Technology	The Netherlands
Denel Spaceteq	South Africa
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Desà Engineering srl	Italy
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Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR)	Germany
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Dniprotekhservice, SPF, LLC	Ukraine
DTU Space	Denmark
EADS Sodern	France
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EMXYS (Embedded Instruments and Systems S.L)	Spain
Engineers Australia	Australia
Enterprise Estonia	Estonia
Eumetsat	Germany
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Eurockot Launch Services GmbH	Germany
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GMV Aerospace & Defence SAU	Spain
GMV INSYEN	Germany
GomSpace Aps	Denmark
Graz University of Technology (TU Graz)	Austria
Gumush Aerospace & Defense	Turkey
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Hungarian Astronautical Society (MANT)	Hungary
IABG Industrieanlagen - Betriebsgesellschaft mbH	Germany
ICARE-CNRS	France
IHI Aerospace Co, Ltd.	Japan
Indian Space Research Organization (ISRO)	India
Indonesian National Institute of Aeronautics and Space (LAPAN)	Indonesia
Institut d'Estudis Espacials de Catalunya - IEEC	Spain
Institut Français d'Histoire de l'Espace	France
Institut Supérieur de l'Aéronautique et de l'Espace (ISAE)	France
Institute of Space Technology (IST)	Pakistan
Instituto de Aeronáutica e Espaço (IAE)	Brazil
Instituto de Geofisica, Universidad Nacional Autonoma de Mexico	Mexico
Instituto Geográfico Agustín Codazzi (IGAC)	Colombia
Instituto Nacional de Pesquisas Espaciais (INPE)	Brazil

Instituto Nacional de Tecnica Aeroespacial (INTA)	Spain
Intelligent Materials and Systems Lab, University of Tartu	Estonia
International Association for the Advancement of Space Safety	The Netherlands
International Institute of Space Commerce	Isle of Man
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Kyushu Institute of Technology	Japan
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Mitsubishi Heavy Industries, Ltd.	Japan
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MXSpace A.C	Mexico
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National Aerospace Educational Centre of Youth	Ukraine
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National Space Agency of Malaysia (ANGKASA)	Malaysia
National Space Centre	Ireland
National Space Research and Development Agency (NASRDA)	Nigeria
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Netherlands Space Society (NVR)	The Netherlands
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Norsk Astronautisk Forening	Norway
Norwegian Space Centre	Norway
Novespace	France
Office National d'Etudes et de Recherches Aérospatiales (ONERA)	France
OHB Italia SpA	Italy
OHB System AG - Munich	Germany
OHB System AG-Bremen	Germany
Orbital Access Ltd	United Kingdom
Pakistan Space and Upper Atmosphere Research Commission	Pakistan
Peoples' Friendship University of Russia	Russian Federation
PJSC "Elmiz"	Ukraine
Polish Academy of Sciences	Poland
Polish Astronautical Society	Poland
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South African Space Association (SASA)	South Africa
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Space Florida	United States
Space Foundation	United States
Space Generation Advisory Council (SGAC)	Austria
Space Industry Association of Australia	Australia
Space Policy Institute, George Washington University	United States
Space Systems/Loral	United States
Space Trust	United Kingdom
SpaceLand Africa	Mauritius
SpaceNed	The Netherlands
SpaceX	United States
SSC	Sweden
Starsem	France
State Enterprise Production Association Kyivprylad	Ukraine
State Space Agency of Ukraine (SSAU)	Ukraine
Stellenbosch University	South Africa
STM (Savunma Teknolojileri Muhenislik ve Ticaret A.S.)	Turkey
Surrey Satellite Technology Ltd (SSTL)	United Kingdom
Swedish Society for Aeronautics and Astronautics	Sweden
SwissSpace Association	Switzerland
Tallinn University of Technology	Estonia
TAMSAT - The Society of Amateur Satellite Technologies of Turkey	Turkey
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2.2 The International Academy of Astronautics (IAA)

The International Academy of Astronautics (IAA) was founded in 1960 by Theodore von Karman. The Academy is an independent international community of leading experts committed to expanding the frontiers of space, the newest realm of human activity. To foster the development of astronautics, the Academy undertakes a number of activities, including the recognition of outstanding contributors through elections and awards. It also facilitates professional communication, develops and promotes new ideas and initiatives, engages the public, and fosters a sense of community among the members. The IAA is a unique nongovernmental organisation established in 1960 and recognized by the United Nations in 1996.

It is an honorary society with an action agenda. With 1200 elected members and corresponding members from 87 nations, it works closely with space agencies, industry, the academic community and the national science and engineering academies to determine needs and objectives and to help shape policy and forge cooperation by means of studies, position papers, conferences and publications. The IAA has published nearly 60 studies to date and is engaged in the preparation of 40 others. The Academy also publishes the journal Acta Astronautica ranked 5th in the world and containing refereed papers and four book series. The Academy now organizes 20 conferences per year and regional meetings focused on the development and promotion of new initiatives. This activity also includes, in cooperation with the International Astronautical Federation and the International Institute of Space Law, the traditional contribution to the International Astronautical Congress (IAC), where the Academy sponsors 13 Symposia. The Academy also continues to enjoy its participation in the COSPAR Assemblies by sponsoring and co-sponsoring symposia and the International Society for Photogrammetry and Remote Sensing (ISPRS) congress this year in Prague. Although the IAA has many connections to these and other similar organisations, it is distinctive as the only international Academy of elected members in the broad area of astronautics and space.

The International Academy of Astronautics held its 5th IAA Planetary Defense Conference from 15 to 19 May 2017 in Tokyo, Japan. The bi-annual conference brought together nearly 200 world experts to discuss the threat to Earth posed by asteroids and comets and actions that might be taken to deflect a threatening object.

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Chrysoula Kourtidou-Papadeli (Greece, Chairman)
Jeffrey Davis (United States)
Du Jichen (China)
Gerd Gruppe (Germany)
Chiaki Mukai (Japan)
Dumitru-Dorin Prunariu (Romania)
Zhuang Fengyuan (China)

Trustees Section 4, Social Sciences

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John Elbon (United States)
Efim Malitikov (Russian Federation)
Seidu Oneilo Mohammed (Nigeria)
Olle Norberg (Sweden)
Yuriy Urlichich (Russian Federation)
Wu Meirong (China)

2.3 The International Institute of Space Law (IISL)

Founded in 1960, the International Institute of Space Law (IISL) is an independent non-governmental organisation dedicated to fostering the development of space law. The membership of the Institute is composed of individuals and institutions from more than forty countries elected on the basis of their contributions to the field of space law or other social sciences related to space activities. In addition, prospective membership is open to students and young professionals with a demonstrated interest in space law.

The purposes and objectives of the IISL include the promotion of further development of space law and expansion of the rule of law in the exploration and use of outer space for peaceful purposes, the holding of meetings, colloquia and competitions on juridical and social science aspects of space activities, the preparation or commissioning of studies and reports, the publication of books, proceedings, reports and position papers, and the cooperation with appropriate international organisations and national institutions in the field of space law.

The IISL holds an annual Colloquium at the International Astronautical Congress. During this Colloquium the Nandasiri Jasentuliyana Keynote lecture takes place, as well as a special session for Young Scholars. In addition the Institute organises a variety of conferences on space law throughout the year in locations all over the world. It publishes an annual volume of IISL Proceedings with papers and reports of all activities during the year.

Since 1992, the IISL organises the annual Manfred Lachs Space Law Moot Court Competition. The competition is based on a hypothetical space law case, written by IISL members, in which around sixty student teams from universities in North America, Europe, Asia Pacific and Africa participate. Members of the International Court of Justice judge the World Finals of the competition, making it unique in the world.

The IISL is an officially recognized observer at sessions of the United Nations Committee on the Peaceful Uses of Outer Space, and its Scientific & Technical and Legal Subcommittees.

Further information regarding the IISL can be found at www.iislweb.org.

International Institute of Space Law
E: info@iislweb.org
W: www.iislweb.org
F: https://www.facebook.com/spacelaw
T: https://twitter.com/iisl_space

WELCOME MESSAGES
ORGANISERS
PRACTICAL INFORMATION
CONFERENCE PROGRAMME
STUDENTS & YOUNG PROFESSIONALS EVENTS
ASSOCIATED PROGRAMMES & EVENTS
EXHIBITION
SOCIAL EVENTS & TECHNICAL TOURS

IISL Board of Directors 2016-2017

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2.4 The Local Organising Committee (LOC)

Since May 2015 the Local Organising Committee (LOC) has been working to ensure that IAC2017 is an outstanding event and a memorable experience for all delegates and those who accompany them to Australia.

Michael Davis

Michael is Chair of the Space Industry Association of Australia and ex officio Chair of the LOC. He has been involved with plans to bring the IAC to Adelaide since the beginning. He practised law in Adelaide for 41 years. He is a graduate of the International Space University and former Co-Director of the ISU Southern Hemisphere Space Studies Program held annually in Adelaide.

David Ball

David has an extensive background in the satellite communications, broadcasting and telecommunications sectors with broad experience in sales leadership, business development, engineering, operational management, product development and marketing. He was the Chief Technology Officer for NewSat and has also held senior positions at INTELSAT and PanAmSat.

Brett Biddington AM

(Chief Executive for IAC2017 in Adelaide). Brett served in the Air Force officer before joining the space team of Cisco Systems. In 2009 he established his own consulting company. Brett is a former Chair of the SIAA and has been associated with efforts to bring the IAC to Adelaide since 2011.

Jennifer Doyle

Jennifer represents the Commonwealth Department of Industry, Innovation and Science on the LOC. This Department has policy responsibility for civil and commercial space matters in Australia and administers the Space Activities Act which is the domestic law that regulates space activity in Australia.

Alice Gorman

Alice is a Senior Lecturer in Archaeology at Flinders University in Adelaide. Her research focuses on the archaeology and heritage of space exploration, including orbital debris, planetary landing sites, off-earth mining, terrestrial launch and tracking sites, and interactions with Indigenous people.

Jeff Kasparian

With a background in satellite technology, Jeff is highly experienced in forming and managing partnerships between universities, other research organisations, industry and governments. He spent more than 20 years performing these roles at the University of South Australia, including at the acclaimed Institute for Telecommunications Research. He now consults in this area.

Naomi Mathers

(Australian Co-Chair of the International Programming Committee for IAC2017). Naomi is the Industry Liaison Engineer at the Advanced Instrumentation and Technology Centre (AITC) at Mt Stromlo Observatory in Canberra. Naomi has much experience with the IAF, especially its educational and outreach activities.

Peter Nikoloff

Peter is the co-founder and a director of Nova Systems, a high-tech. company based in Adelaide. Nova has expertise in satellite communications and provides numerous services to Defence at the Woomera Test Range.

Anne-Marie Quinn

(ex-officio) Anne-Marie is the Managing Director of All Occasions Group (AOG), the Adelaide-based company that has been engaged as the Professional Conference Organiser for IAC2017. AOG has considerable experience in handling large conferences and also has a subsidiary company that is a travel agency.

Nicola Sasanelli AM

Nicola is the representative of the Government of South Australia on the LOC. He is an expert in facilitating international partnerships and collaboration between universities, other research organisations and governments. He served as the Science Counsellor in the Italian Embassy in Canberra before moving to Adelaide.

Chris Schacht

Chris was a Senator for South Australia in the Australian Parliament from 1987 – 2002. He served as a Minister and in 1993-4 was responsible for civil and commercial space matters. He remains active in business and politics, especially in South Australia.

Mary Snitch

Mary is the representative of the Lockheed Martin Corporation on the LOC. Mary is based in Bethesda, Maryland and is responsible for managing many of Lockheed's relationships with universities and with international organisations.

Professional Conference Organiser (PCO)

All Occasions Group

All Occasions Group is a dynamic organisation established by Anne-Marie Quinn in 1998 to supply specialised Conference and Event Management Services. All Occasions Management provides a broad range of conference and event management, communication, marketing and travel services matched with a premium level of service, and a dedication to achieving and maintaining success.

All Occasions Group has managed a broad range of national and international events, for 50 delegates to 3500 delegates in diverse A-Z of locations. As a leading supplier, it is the belief that All Occasions Group's knowledge, international experience, passion and enthusiasm are the essential ingredients required to successfully manage every conference.

All Occasions Management is a Certified Event Company (CEC). The primary role of the company is to work closely with the organising committee to deliver memorable, high quality and professional events. All Occasions Group are committed to providing professional advice, quality project management, guidance and leadership on every event. As a proud national company with a solid reputation for managing local, national and international conferences and events, and delivering domestic and international travel management services, it is a pleasure to be working with the IAC 2017 Local Organising Committee to deliver a Congress of the highest standard.

Contact Details:
12 Stirling Street, Thebarton SA 5031
P: +61 8 8125 2200
F: +61 8 8125 2233
E: conferece@aomevents.com
W: www.alloccasionsgroup.com

Official IAC 2017 Satchel
Artist Info

Artist: Cedric Varcoe
Region: Point Pearce
D.O.B: 1984

Cedric was born in Adelaide in 1984, his family is Narangga, from Point Pearce on the mission on Yorke Peninsula in South Australia and and Ngarrindjeri from the area along the southern parts of the river Murray the Coorong in southern coastal South Australia. Cedric has been painting since he was very young, inspired by watching his family paint and by the stories from Ngarrindjeri country and culture told to him by his grandfather and other elders of the Ngarrindjeri language group.

In 2008, Cedric completed a mural in one of the cells at the Port Pirie Police Station, hoping to inspire young people who have been arrested, to try to help them to have a better outlook on life, to think that they might be able to paint and express themselves creatively. Cedric has won multiple local awards. Cedric has been exhibiting since 1997. In 2015 Cedric received a grant from Arts SA for professional development workshops with Better World Arts. During these workshops Cedric studied colour theory, life drawing and did a lot of research into Ngarrindjeri history and culture at the South Australian Museum.

Title: Milkyway Dreaming
Catalogue Code: CVA0009
Medium: Acrylic on Canvas
Date Created: 11/09/2014

When Ngurunderi travelled through what is now Ngarrindjeri country he came down the Murray River in his canoe. At that time it was just a small stream. Ngurunderi was looking for his two wives who had run away from him, and was following Pondi, the big Murray Cod who had created the twists and turns of the river when sweeping his huge tail from side to side. Ngurunderi, Nepeli and other relatives formed the salt pans, lakes and all the landforms. They formed the country from Lake Alexandrina, the Coorong and right across to Kangaroo Island. When they were done Ngurunderi put his canoe up in the big sky turning it into the Milkyway where he still lives today.

Ngarrindjeri People would hold a corroboree for Ngurunderi and Pondi. The lightning, big rain and thunder, is Ngurunderi talking to us. The thunder was his angry voice. Lightning told us he was there and with us protecting us for always and ever. All of this happened back in the Dreaming, when kangaroos and other animals were giants. Waiyungari, Ngurunderi brother in law, caught and killed the big kangaroos then pegged out their skins to dry. They then transformed into the big salt pans that are in our country today. Many other beings lived here as well.

The Molyewongk - half man, half fish lives in the water ways in Ngarrindjeri country. His home is in the many shelters and caves along the banks of the river and lakes as well as under water. He will take you if you go anywhere where near his places and will take children if they go there.

BETTER WORLD ARTS
CROSS CULTURAL PROJECTS
fine art•fine craft•ethical trade

144 Commercial Road, Port Adelaide, SA 5015
P: +61 8 8240 3373
W: www.betterworldarts.com.au

Message from the Minister for Industry, Innovation and Science

The people of Adelaide wanted to send Andy Thomas a message of support as he orbited the Earth aboard the space shuttle Endeavour on 19 May 1996. So they turned on their lights at the time of night when Andy was passing overhead and the Adelaide-born astronaut saw his home town from space.

21 years on, Adelaide will again turn its mind to the cosmos. For one week in September, Adelaide will host the International Astronautical Congress (IAC), the world's largest annual gathering of space professional, and the largest international conference ever held in Adelaide. It brings together space leaders from across the globe, including heads of major space agencies, astronauts, senior space engineers, industry representatives, policy makers and researchers. The choice of Adelaide to host IAC 2017 reflects Australia's long and successful history in the space industry and our reputation as a partner in the international space community. It is particularly fitting given that this year is the 50th anniversary of the launch of Australia's first satellite – known as WRESAT – which was designed and built in Adelaide.

Today, space activity has become too large and complex for any one country to navigate alone. This event is an opportunity to share insights into the future of the global space industry under the rubric of "unlocking imagination, fostering innovation, and strengthening security". It is also an opportunity for Australia to showcase its capacity to innovate and capitalise on new technologies, and I am confident this will serve as a catalyst for the growth of our space industry. I am also pleased that IAC 2017 will emphasise the importance of education in the areas of science, technology, engineering and mathematics to the future of the global space community.

I congratulate the Space Industry Association of Australia on hosting this conference, and also thank the International Astronautical Federation for organising and outstanding programme of events.

I welcome you to Adelaide and wish you a successful 68th International Astronautical Congress.

Senator the Hon Arthur Sinodinos AO
Minister for Industry, Innovation and Science

Message from the Premier of South Australia

I am delighted to welcome overseas and interstate delegates to Adelaide for the 68th International Astronautical Congress.

You have come to a place renowned for its premium food and wine, its beautiful landscapes, and its superb beaches and wildlife. South Australia also enjoys a global reputation for advanced technology and innovation, and a rich history of involvement in the space industry.

The Woomera Rocket Range, for example, was established in South Australia's north in 1947. At the time, it played a critical role in the development of space technologies and was the second busiest launch site in the world after Cape Canaveral in Florida.

This year marks the 50th anniversary of Australia's first satellite, Wresat 1 – launched from Woomera – which made ours only the fourth country in the world to launch its own satellite into space.

The South Australian Government is supporting the growth of the local space industry, and it is building a vibrant space "ecosystem" made up of commercial, educational and research organisations.

We are creating jobs and opportunities, fostering start-up ventures, attracting investment, and encouraging research- and development-led advances.

Now is the time for us to accelerate our journey in space, and the 68th International Astronautical Congress provides an unparalleled platform from which to do that.

This year's Congress has a strong educational focus, with more than 1000 students and young people from across the State taking part in programmes and serving as volunteers. In this way, I trust the event will help to inspire the next generation of leading space professionals.

On behalf of all South Australians, I thank the International Astronautical Federation and the Local Organising Committee for their tremendous efforts, and I have every confidence the Congress will be an outstanding success.

We in this State look forward to working constructively with delegates to explore the future of space.

Jay Weatherill MP
Premier of South Australia

Message from the Lord Mayor of Adelaide

On behalf of my fellow Elected Members and the community, I wish you a warm welcome to the City of Adelaide, one of the world's most liveable cities.

We are excited to be hosting the 68th International Astronautical Congress, the largest conference our city has ever hosted and the first to use the new east wing of the Adelaide Convention Centre.

I congratulate the organising committee for preparing an informative and insightful congress this year.

The 68th IAC presents a unique opportunity for South Australia to showcase our array of rapidly expanding space industry expertise and capabilities to a global audience.

Already home to over 60 organisations with space capabilities, we are committed to growing our local industry through increased research and development collaboration. Both the South Australian Government and the City of Adelaide have a strategic objective to support the growth of space and defence industries, essential to our economic development.

The City of Adelaide is particularly focused on becoming a leading smart city through the greater use of technology to enhance the experience for residents, businesses, workers and city visitors, with a key aspect being the development of a nation-leading super-fast data network which by-passes the internet offering speeds of up to 10 Gigabits per second for businesses in the CBD. Adelaide is proud of its strong international reputation as a vibrant cosmopolitan city, having been recognised by institutions such as The Economist Intelligence Unit, The Guardian and Lonely Planet as a perfect place to do business, to live and to visit. Our city is safe and welcoming with a successful and diverse multi-cultural community where you will be greeted by many friendly and helpful people.

Adelaide offers you a wide array of unique experiences, from intimate bars and fine dining, to international retail and award-winning entertainment. Your trip will be incomplete without visiting Adelaide Central Market, a local icon full of colour, character and diverse cultures from all corners of the globe and there are many other attractions such as the world renowned Adelaide Oval and National Wine Centre. Your Explore Adelaide Map is your key to discovering the very best our city has to offer you.

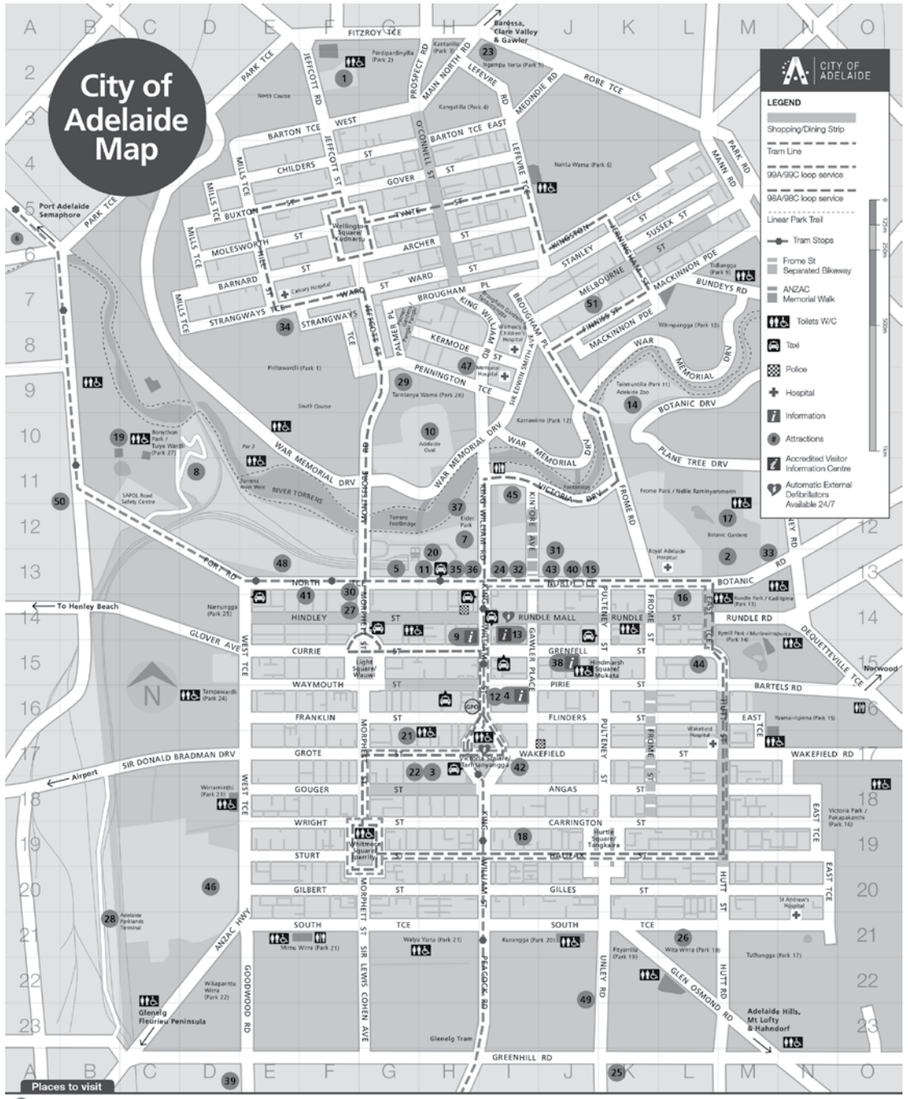
Adelaide is also the gateway to many unique Australian recreational and wilderness experiences. It is only a short journey to international renowned tourist destinations such as the Barossa Valley, McLaren Vale, Kangaroo Island and the Flinders Ranges. So to get the very most out of your visit, I encourage you to sign up for one of the many tours IAC has arranged.

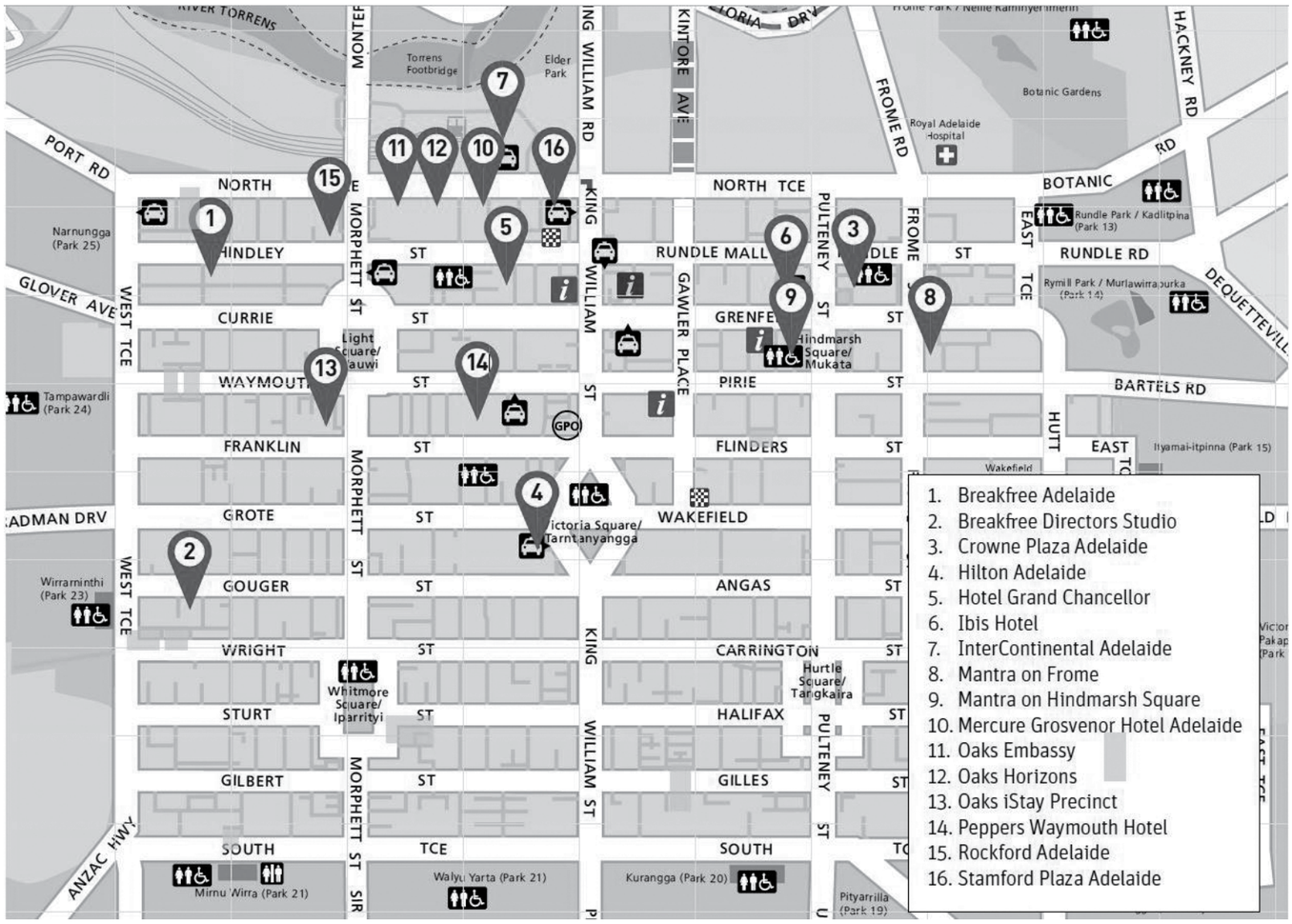
Thank you very much for joining us here in the City of Adelaide as we look to a bright future together among the stars.

Lord Major Martin Haese
Lord Mayor of Adelaide

3 Practical Information

3.1 City Map and Introduction to Adelaide




1. Breakfree Adelaide
2. Breakfree Directors Studio
3. Crowne Plaza Adelaide
4. Hilton Adelaide
5. Hotel Grand Chancellor
6. Ibis Hotel
7. InterContinental Adelaide
8. Mantra on Frome
9. Mantra on Hindmarsh Square
10. Mercure Grosvenor Hotel Adelaide
11. Oaks Embassy
12. Oaks Horizons
13. Oaks iStay Precinct
14. Peppers Waymouth Hotel
15. Rockford Adelaide
16. Stamford Plaza Adelaide
RIVER TORRENS
Torrens Footbridge
Elder Park
Botanic Gardens
Royal Adelaide Hospital
Rundle Park / Kadlitpina (Park 13)
Rymill Park / Murlawirrapurka (Park 14)
Narnungga (Park 25)
Tampawardli (Park 24)
Wirrarninthi (Park 23)
Light Square/ Pityarilla
Hindmarsh Square/ Mukata
Victoria Square/ Tarntanyangga
Whitmore Square/ Iparrityi
Hurtle Square/ Tangkaira
Mirnu Wirra (Park 21)
Walyu Yarta (Park 21)
Kurangga (Park 20)
Pityarrilla (Park 19)
Ityamai-itpinna (Park 15)
PORT RD
NORTH TCE
HINDLEY ST
CURRIE ST
WAYMOUTH ST
FRANKLIN ST
GROTE ST
GOUGER ST
WRIGHT ST
STURT ST
GILBERT ST
SOUTH TCE
RUNDLE MALL
GRENFELL ST
PIRIE ST
FLINDERS ST
WAKEFIELD ST
ANGAS ST
CARRINGTON ST
HALIFAX ST
GILLES ST
BARTELS RD
RUNDLE RD
EAST TCE
HUTT ST
KING WILLIAM RD
MORPHETT ST
WEST TCE
FROME RD
PULTENEY ST
HACKNEY RD
KINTORE AVE
GAWLER PLACE
ADMAN DRV
ANZAC HWY
GLOVER AVE
DEQUETTEVILLE TER
GPO


EXPLORE the CITY of ADELAIDE
FOR TIPS ON WHAT TO SEE AND DO VISIT
cityofadelaide.com.au/explore
FOLLOW CITYOFADELAIDE ON:
#ADELAIDE
#VISITADELAIDE
ARTS & CULTURE
A diverse range of museums, galleries, theatres and cultural landmarks can be found in the dark blue areas of the map. A stroll through any of these areas will also uncover quirky street art, famous statues and sculptures. Adelaide has a thriving festival and events calendar which sees the City ignite with visual art, music, film, literature, dance and theatre throughout the year.
ENTERTAINMENT
Wander through the yellow areas of the map for a range of things to see and do for all ages, including music, comedy, theatre, sport and recreation. Check out a game at the Adelaide Oval, take a cruise along the River Torrens, play a round at the North Adelaide Golf Course, visit the Adelaide Zoo or catch a live band. There is always something entertaining happening in the City, day and night and all year round!
FOOD AND DRINK
Quench your thirst or simply grab a bite to eat at any of the diverse restaurants, cafes, bars and eateries found all over the City, particularly along the red areas of the map. No matter what your taste buds or budget, you will find a mouth-watering place to eat along the City's bustling 'eat streets', including Gouger, Waymouth, Hutt, O'Connell, Leigh and Rundle Street, to name just a few!
SHOPPING
When it comes to shopping, the City has everything you need and more! Visit the light blue areas of the map for a wide range of retailers. Rundle Mall is Adelaide's premier retail destination with over 700 shops, boutiques and department stores. You will also find a range of trendy and unique stores along Rundle Street, Hutt Street, O'Connell Street and Melbourne Street.
ADELAIDE ZOO
BOTANIC GARDEN
NATIONAL WINE CENTRE
ADELAIDE OVAL
ST PETER'S CATHEDRAL
ROTUNDA ELDER PARK
TORRENS FOOTBRIDGE
TORRENS RIVER WEIR
BONYTHON PARK PLAYSPACE
OLD ADELAIDE GAOL
NORTH ADELAIDE GOLF COURSE
COLONEL LIGHT STATUE
WAR MEMORIAL DRIVE
ADELAIDE CONVENTION CENTRE
CASINO
RAILWAY STATION
ADELAIDE FESTIVAL CENTRE
PARLIAMENT HOUSE
GOVERNMENT HOUSE
NATIONAL WAR MEMORIAL
MIGRATION MUSEUM
LIBRARY MUSEUM
ART GALLERY
SAMSTAG MUSEUM
LION ARTS CENTRE
JAM FACTORY
VARIETY CINEMA
MEDIA RESOURCE CENTRE
LIGHT SQUARE
MALLS PIGS
MALLS BALLS
ADELAIDE CITY LIBRARY
RUNDLE LANTERN
HINDMARSH SQUARE
ART POD
ADELAIDE TOWN HALL
GENERAL POST OFFICE ADELAIDE
CENTRAL BUS STATION
MAJESTIC THEATRE
ADELAIDE CENTRAL MARKET
VICTORIA SQUARE
ST FRANCIS XAVIER CATHEDRAL
ARTS THEATRE
AYERS HOUSE
EBENEZER PL
TANDANYA
RYMILL PARK
FLINDERS ST MARKET
FROME ST BIKEWAY
WHITMORE SQUARE
ADELAIDE MOSQUE
WEST TERRACE CEMETERY
THE MARKET SHED ON HOLLAND
GILLES ST MARKETS
BMX TRACK
TO HAIGH'S CHOCOLATE FACTORY
TO PRINCES HIGHWAY
TO GLENELG
TO ADELAIDE SHOWGROUNDS
TRAM TO GLENELG
TO AIRPORT
LOOK OUT FOR FREE BUSES
TO ADELAIDE AQUATIC CENTRE

3.2 Adelaide Airport & Ground Transportation

3.2.1 Adelaide Airport Office

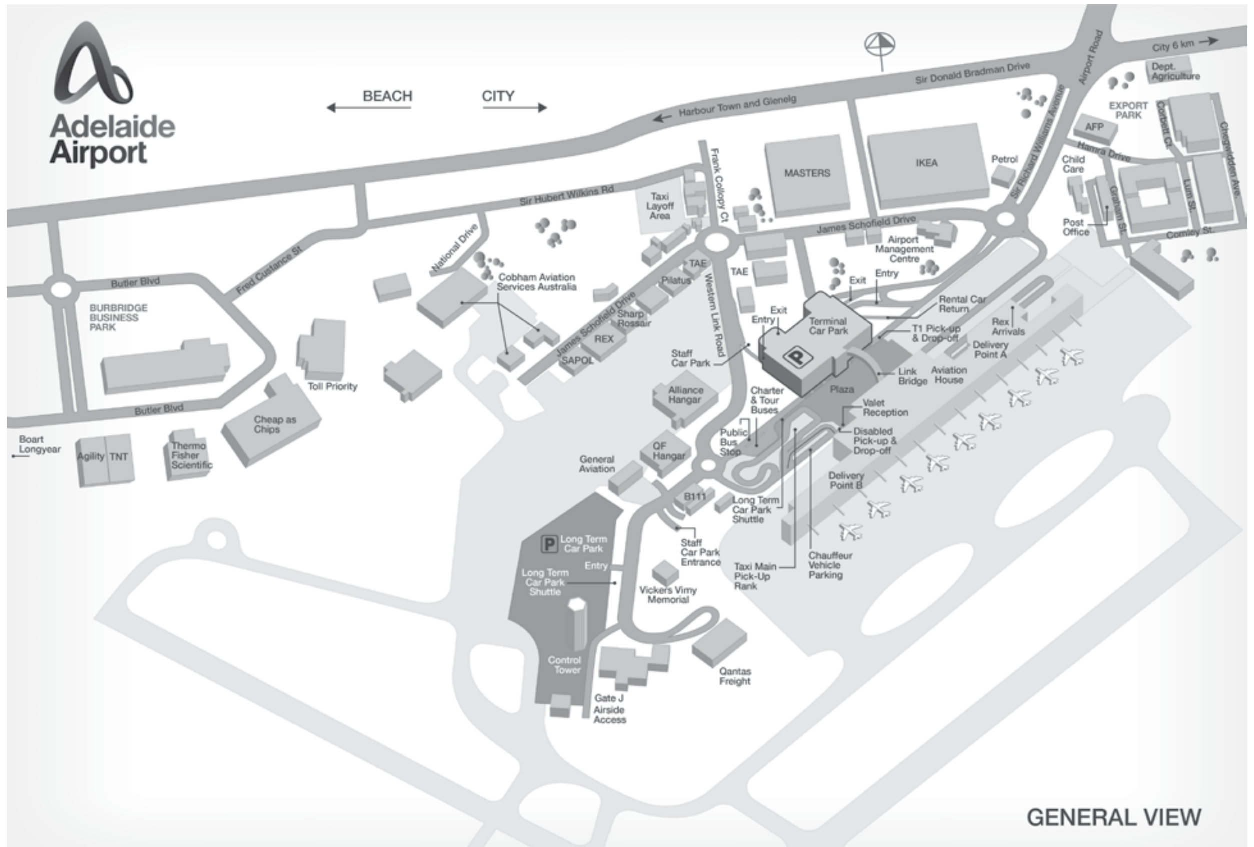
Terminal 1
Adelaide Airport, Andrew Thomas Drive, Adelaide SA 5950
P: +61 8 8234 3093

3.2.2 Adelaide Airport

1 James Schofield Drive, Adelaide Airport, SA 5950
P: +61 8 8308 9211
E: airport@aal.com.au
W: www.adelaideairport.com.au

Terminal Opening Hours:

- Terminal 1 open from 4AM to 11PM
- Customs open 90 minutes prior to departure



3.2.3 IAC Visitor Desk

For your arrival into Adelaide, our friendly volunteers based at the IAC Visitor Desk located near baggage claim on the ground floor of the airport, will be able to assist with any questions you may have upon your arrival.

3.2.4 Transportation

Adelaide Metro Bus
If you wish to use public transport to/ from Adelaide Airport, Adelaide Metro offers an express double decker bus service called JetExpress between the airport and the city.

Adelaide Metro also offers a convenient JetBus service to Glenelg, West Beach and the City, servicing all stops en route.
Both JetExpress and JetBus are Metroticket services. Single trip and daytrip tickets can be purchased from bus drivers.
Please visit www.adelaidemetro.com.au more information to find your closest service stop. Alternatively call Adelaide Metro Infoline 08 8210 1000.

Pick up and drop off is from the bus stop located on the left hand side of the plaza as you leave the Terminal.

Shuttle Bus
Airport City Shuttle offers a Door to Door service from Adelaide Airport to Adelaide Hotels and Businesses. Group discounts are available.
Bookings are not needed, please follow instructions below:
On arrival please make your way to the Information and Tourism Bookings Booth located on the ground floor of the terminal in a central location. The friendly staff will help you with your booking and inform you of the next shuttle time (approximately every half hour).

City Shuttle Bus operating hours are as follows:
Monday – Friday from 8AM – 9PM.
Saturdays from 8AM – 6PM.
Sundays from 8AM – 5PM.
The cost is $10 per person each way. Contact City Shuttle for more information on Group bookings 0433 533 718.

Taxi
Taxis are a convenient way to get to and from the airport. There is a designated taxi rank located at the left of the pedestrian plaza as you walk out of the terminal. Concierges provide a safe environment and allocate taxis to passengers. They can also organise taxis with baby capsules, wheelchair access, five-seaters and maxi taxis for larger groups or station wagons for large amounts of baggage.
There is a $2 levy added to fares for taxis leaving the airport.

Rental Car
Hiring a rental car at Adelaide Airport gives you the freedom control your own schedule and explore what South Australia has to offer. Car rental desks are located on the ground level of the terminal adjacent to the baggage claim area. Parking for car rentals is located on the ground floor of the multi-level car park.

The following companies have desks at the airport:
AVIS | www.avis.com.au
Budget | www.budget.com.au
Europcar | www.europcar.com.au
Hertz | https://www.hertz.com.au
Thrifty | www.thrifty.com.au
RedSpot | https://www.redspot.com.au/

Your car rental company will direct you to the correct parking location to pick up your vehicle. To drop off your car rental, follow the signage to the car rental area on the ground floor of the multi-level car park.
For any queries on the car rental parking arrangements at Adelaide Airport, please contact your car rental company.

3.3 Registration

Registration Rates

Registration Category	Early Registration Before 30/06/2017		Regular Registration from 01/07/2017 - 20/09/2017		On-Site Registration	
	EURO	AUD	EURO	AUD	EURO	AUD
Full-paying Participants	€ 980	$A 1,421	€ 1,140	A$ 1,653	€ 1,200	A$ 1,740
Full-paying Participants who are employees or elected officers of an IAF member organisation or who are current members of the IAA and the IISL.	€ 820	A$ 1,189	€ 970	A$ 1,407	€ 1,080	A$ 1,566
Retired persons meeting the IAF's minimum requirements.	€ 470	A$ 682	€ 530	A$ 769	€ 580	A$ 841
Young professionals (no older than 35 years of age on the day of start of the Congress).	€ 370	A$ 537	€ 430	A$ 624	€ 490	A$ 711
Full-time students (no age limit)	€ 100	A$ 145	€ 115	A$ 167	€ 130	A$ 189
Primary and secondary level teachers	€ 100	A$ 145	€ 115	A$ 167	€ 130	A$ 189
Accompanying persons (Maximum 1 per Full-paying, Retired or Young Professional participants)	€ 90	A$ 131	€ 100	A$ 145	€ 130	A$ 189
Accredited press	Free of charge		Free of charge		Free of charge	

Registration Inclusions

The following is included in your IAC2017 Registration:

- Congress badge
- Congress documentation
- Congress bag
- Admission to the exhibition halls
- Admission to the Plenary Program and Global Networking Forum (GNF)
- Access to all Scientific and Technical Sessions, the Opening Ceremony and the Closing Ceremony
- (one) Welcome Reception Ticket

Retiree Registration:
Those selecting a retiree registration are those defined as no longer employed and full-time retired and will be requested to provide a copy of their passport as a supporting document at point of registration.

Young Professional:
Those selecting the young professionals registration category will have to upload an ID card or passport as a proof of the 35 years of age limitation, which will need to be valid at the time of the Congress. A copy of this will be required as a supporting document at point of registration.

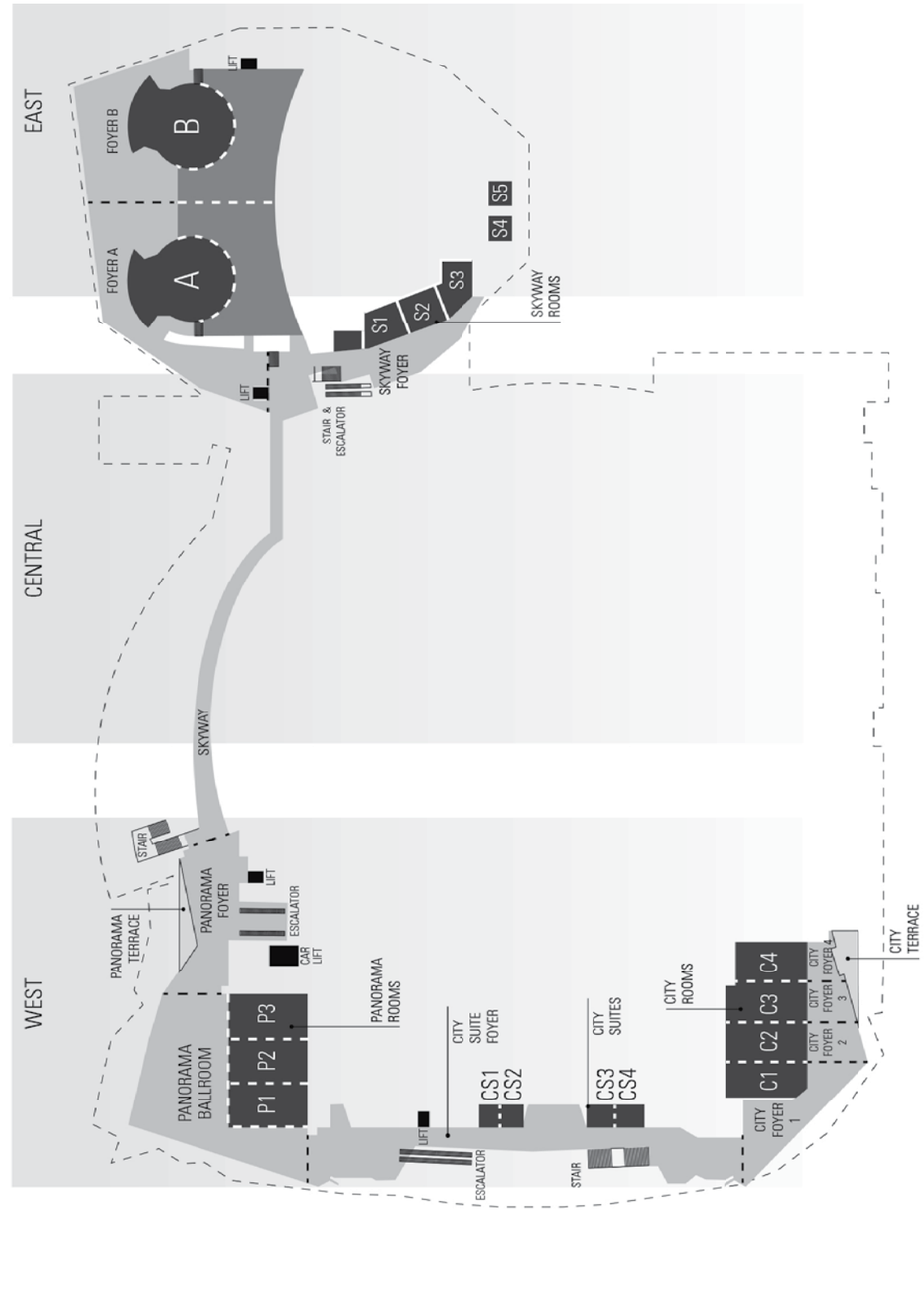
Students:
Those selecting a student registration will be requested to produce evidence of their 2017 student status when collecting their registration at the Congress. Those who are presenting work in the Student Competition can register at the student rate and will be asked to produce their acceptance letter to the competition when collecting their registration at the Congress.

Primary and Secondary Level Teachers:
Teachers must provide documentation from their organisation to confirm they are educators of primary or secondary level student. A copy of this will be required as a supporting document at point of registration.

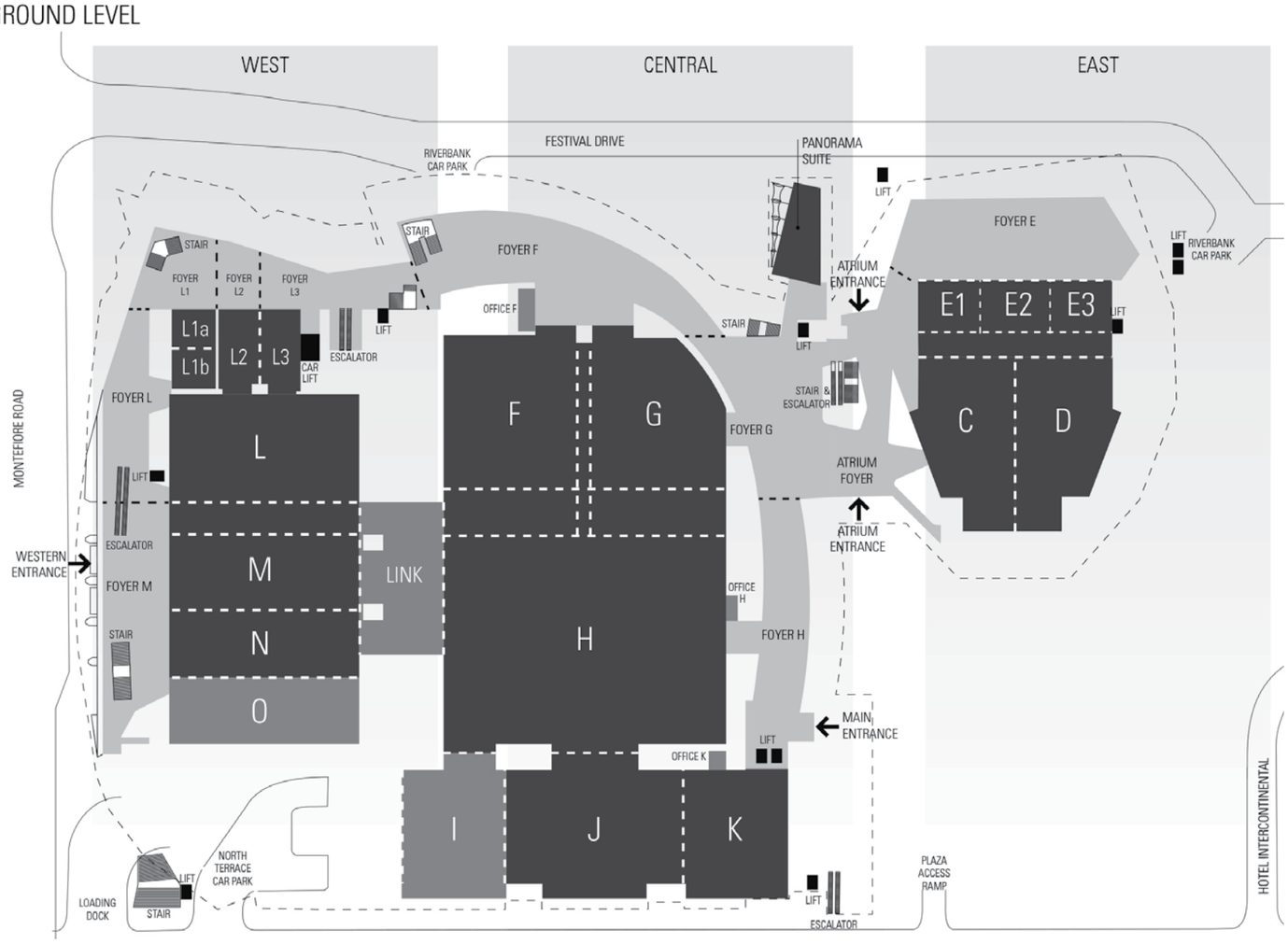
Accredited Press:
Press will be required to upload a valid Press Card or provide any other document proofing their status of "Media" as a supporting document at point of registration.

Accompanying Person:
Those selecting the accompanying person registration are those defined as a spouse, civil partner, translator or administrative assistant. (Maximum 1 per Full Paying, Retired or Young Professional Registration Only)

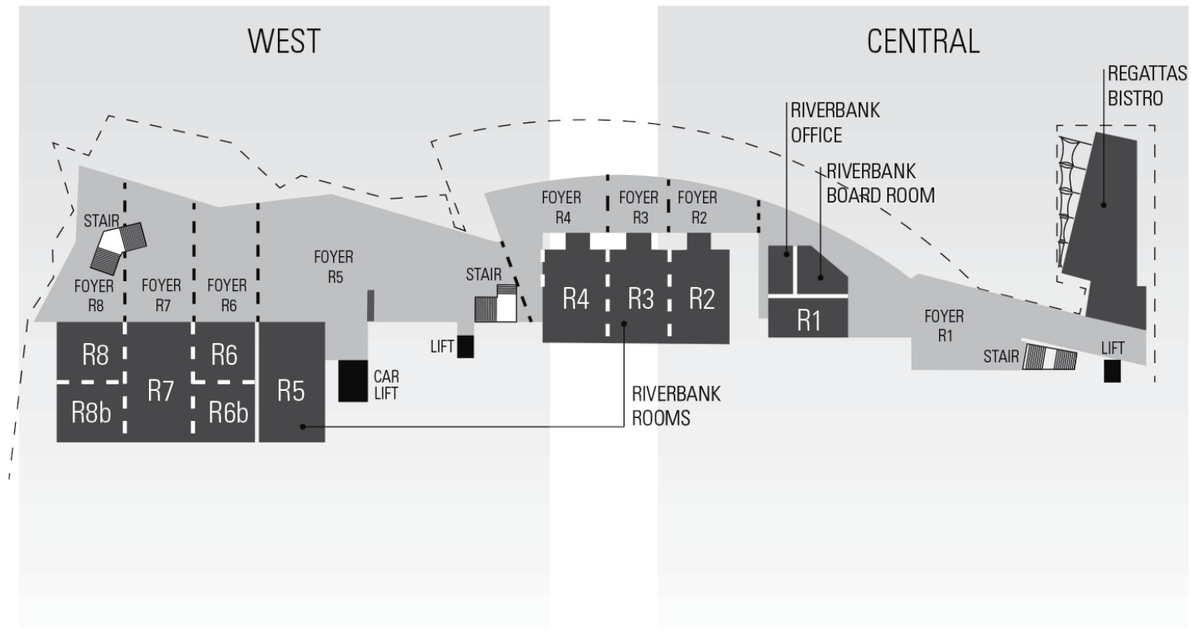
3.4 Congress Venue Floor Plans



GROUND LEVEL



LOWER LEVEL



3.5 Offices and Exhibition Opening Hours

Registration and Information Desk

Location: Adelaide Convention Centre, Foyer G
Saturday 23 September, 13:00-18:00
Sunday 24 September, 08:00-18:00
Monday 25 September - Thursday 28 September, 08:00-16:00
Friday 29 September, 08:00-16:00

IAF Secretariat Office

Location: Adelaide Convention Centre, Hall L

Saturday 23 September - Friday 29 September, 08:00-18:00

PCO Office

Location: Adelaide Convention Centre, Office H

Friday 22 September - Friday 29 September, 08:00-18:00

IAA Secretariat Office

Location: Adelaide Convention Centre, Hall L

Saturday 23 September - Friday 29 September, 08:00-18:00

Exhibition Hall

Location: Adelaide Convention Centre, Hall F, G, H and Link
Monday 25 September, 11:45-18:00
Tuesday 26 September - Thursday 28 September, 09:00-18:00
Friday 29 September, 09:00-16:30

IAF Members' Lounge

Location: Adelaide Convention Centre, Hall L

Sunday 24 September - Friday 29 September, 08:00-18:00

IISL Members' Lounge

Location: Adelaide Convention Centre, Hall L

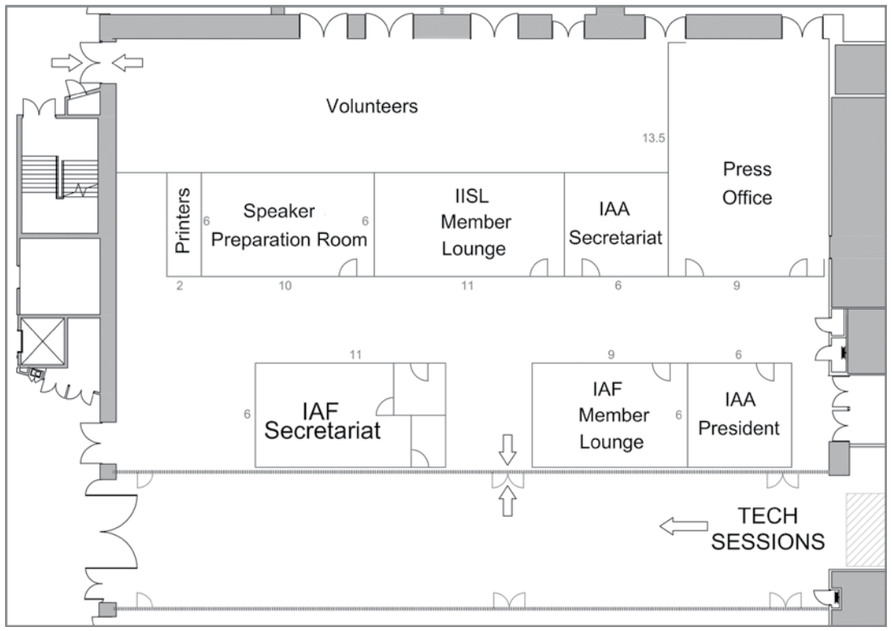
Sunday 24 September - Friday 29 September, 08:00-18:00

International Press Centre

Location: Adelaide Convention Centre, Hall L
Sunday 24 September - Thursday 28 September, 08:00-19:00
Friday 29 September, 07:00-18:00

Speaker Preparation Room

Location: Adelaide Convention Centre, Hall L
Sunday 24 September, 14:00-18:00
Monday 25 September - Thursday 28 September, 08:30-18:00
Friday 29 September, 08:30-13:00



3.6 Useful Information

Disability Access to the Adelaide Convention Centre

Access and facilities for people with disabilities are provided throughout the Centre. All car parks and buildings are wheelchair accessible.

Parking at the Adelaide Convention Centre

If you are driving to the Centre, they offer two undercover car parking options with the North Terrace and the Riverbank car parks. Both are located directly under the Centre and are open 24 hours a day, 7 days a week. Clearance is 2.0 metres and automated payment stations accept credit/debit cards (1.5% surcharge for Visa, Mastercard, Diners and Amex).

Both car parks are fitted with video surveillance camera systems and security patrols these areas.

Public Transport

City Free Bus
The free City Connector bus service runs on two loops – an inner city loop and an extended loop around North Adelaide providing a link to popular city attractions and shopping, dining and services destinations.

Route 98A and 98C link the city and North Adelaide every 30 minutes, seven days a week and routes 99A and 99C link the main city destinations every 30 minutes on weekdays. Together routes 98 and 99 provide a coordinated 15-minute frequency on weekdays from North Terrace to Hutt Street, Hurtle Square, Whitmore Square, China Town, Central Market and Victoria Square.

The service runs from early in the morning until 7.15PM daily, with extra services running on Friday until 9.15PM.

The buses are air conditioned and wheelchair and pram friendly.

MetroCARD Visitor Pass
The Metrocard Visitor Pass is available to tourists and provides unlimited travel on all Adelaide Metro buses, trains and trams for three consecutive days from the day the Metrocard is first used. The pass costs $25 and includes maps with information on using Adelaide's public transport system, how to travel to some of the most popular attractions, and places to visit in the Adelaide metropolitan area. At the end of the three days the Metrocard Visitor Pass can be recharged and used as a standard Metrocard. The Metrocard Visitor Pass is available from Adelaide Metro Information Centres and participating outlets.
Visit www.adelaidemetro.com.au for more details.

City Free Bikes
Adelaide FREE Bikes is a FREE bike hire scheme available to everyone...every day. Operating since 2005 and unique in Australia, it is just one part of the Adelaide City Council's strategy to achieve a cleaner and greener City.

The Adelaide Convention Centre is a designated pick up and drop off point for Adelaide Free Bikes – an initiative run by the Adelaide City Council. All you need is a valid driver's licence, passport or Australian proof of age card!

Taxis
Three main taxi companies operate in the Adelaide metropolitan area and ranks are located on North Terrace and Morphett Bridge, right on the doorstep of the Central and West Buildings. Below are the local contact details for taxi companies.

Adelaide Independent Taxis
P: 13 22 11

Adelaide Suburban Taxis
P: 13 10 08

Yellow Cabs
P: 13 22 27

Wheelchair accessible taxis are provided by Adelaide Access Taxis: www.aitaxis.com.au/pages/adelaide-access-taxis

Train
The historic Adelaide Railway Station is located a 2 minute walk from the Adelaide Convention Centre , and the Tram stop is just in front of the Railway Station. For timetables visit www.adelaidemetro.com.au.

Tram
Adelaide Metro provides a free tram service from the Adelaide Entertainment Centre to South Terrace. The service runs every 15 minutes and continues to Glenelg, but the correct fare must be paid. www.adelaidemetro.com.au

Travelex
Travelex is the world's largest retail foreign exchange specialist. Travelex stores are located in the following locations:

Adelaide CBD Offices

c/- HSBC
55 Grenfell Street, Adelaide SA 5000
P: +61 8 7071 2029

or

Travelex Currency Services
Shop 4, Beehive Corner, Adelaide SA 5000
P: +61 8 8231 6977

Visa Information

You might come to Australia for reasons such as holidays, sightseeing, business, social or recreational purposes, to visit relatives, friends, or for other short-term non-work reasons like medical treatment or medical consultations. You might just be passing through on your way to somewhere else. Whether you are visiting for less than 72 hours or planning on a stay of several years you must have a valid Australian visa. For more information about passport and visa requirements to enter Australia, please visit Department of Immigration and Citizenship. http://www.australia.gov.au/information-and-services/immigration-and-visas

Visitor Information Centre

The Visitor Information Centre is in James Place near the western end of Rundle Mall. The Adelaide Visitor Information Centre is conveniently located in James Place, just off Rundle Mall. The Visitor Information Centre provides visitors with an excellent range of tourism information on Adelaide and South Australia, including brochures, maps and event guides.

The Adelaide Visitor Information Centre can be reached by telephone on 1300 588 140 or email visitor@adelaidecitycouncil.com.

Weather

In spring (September to November) South Australia is awash with colour and wildlife flourishes. Average daily spring temperatures in Adelaide range from a minimum of 11.6°C to a maximum of 21.7°C.

Adelaide City Explorer APP

Adelaide City Explorer is an interactive, mobile guide to the architecture and heritage of the City of Adelaide, South Australia. It is produced by the National Trust of South Australia in partnership with the Adelaide City Council.

This website and the associated mobile apps for Android and Apple devices share the stories of the city and showcase its architectural landmarks, hidden gems and most treasured spaces.

The various self-guided trails will help you to explore Adelaide in greater depth, enjoy its many highlights and discover its lesser known details. The trails present diverse stories covering architectural styles, social and technological innovation, personal biographies and neighbourhood cultures. Each trail includes photographs, audio and video material and is shareable via social media platforms. GPS technology enables easy navigation to sites along each trail using smartphones and tablets. This website includes commenting and discussion facilities for you to share your own experiences and memories on the sites and stories, or to ask questions or seek further information.

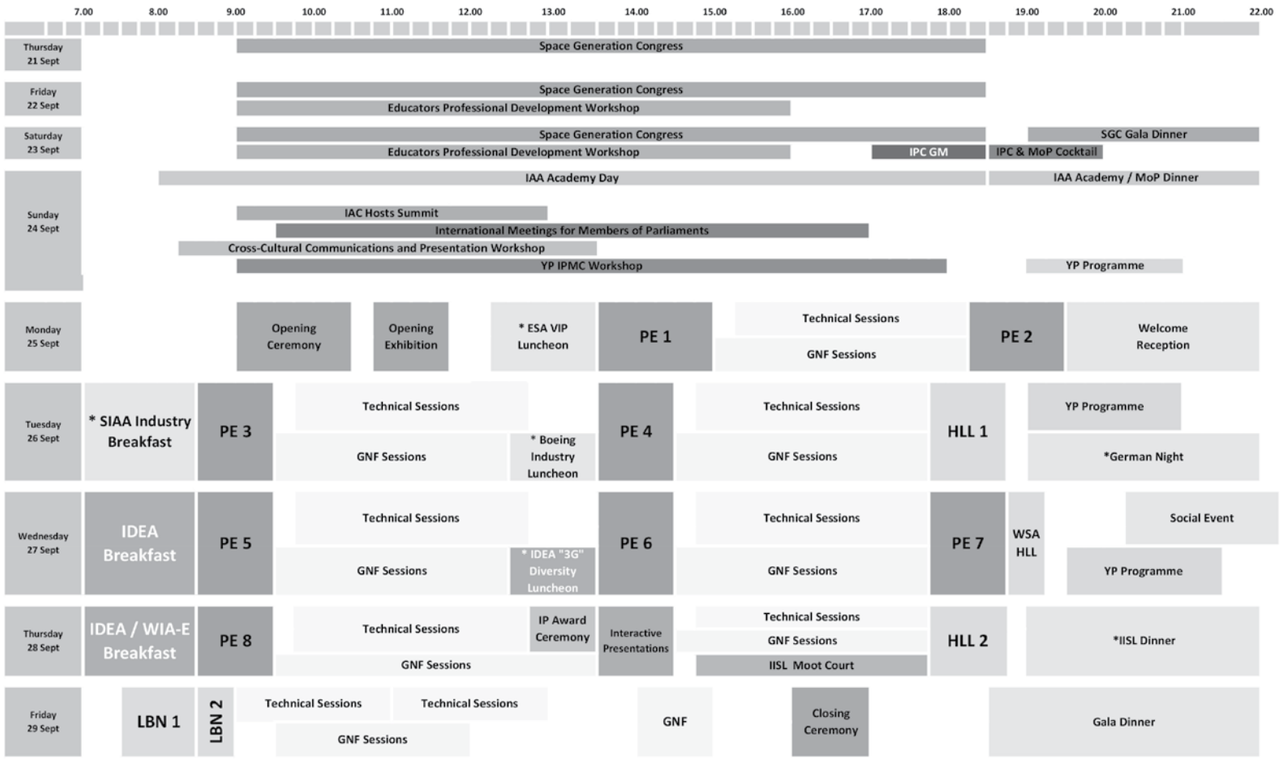
Australian Road Rules

We want you to enjoy your stay, but more importantly we want you to stay safe.
If you intend to drive in South Australia - make sure you're driving legally and safely by following these tips:

- We drive on the left-hand side of the road in Australia.
- The default speed limit in urban areas is 50 kph unless otherwise sign posted. The speed limit on most Australian highways is 100 kph, only a few roads allow you to travel at a maximum speed of 110 kph. Police regularly conduct speed checks using speed cameras, radar and lasers along all types of roads.
- Wearing a seatbelt is a life or death matter both for you and your passengers. Drivers must ensure that they and any passengers in the vehicle wear a seatbelt or child restraint.

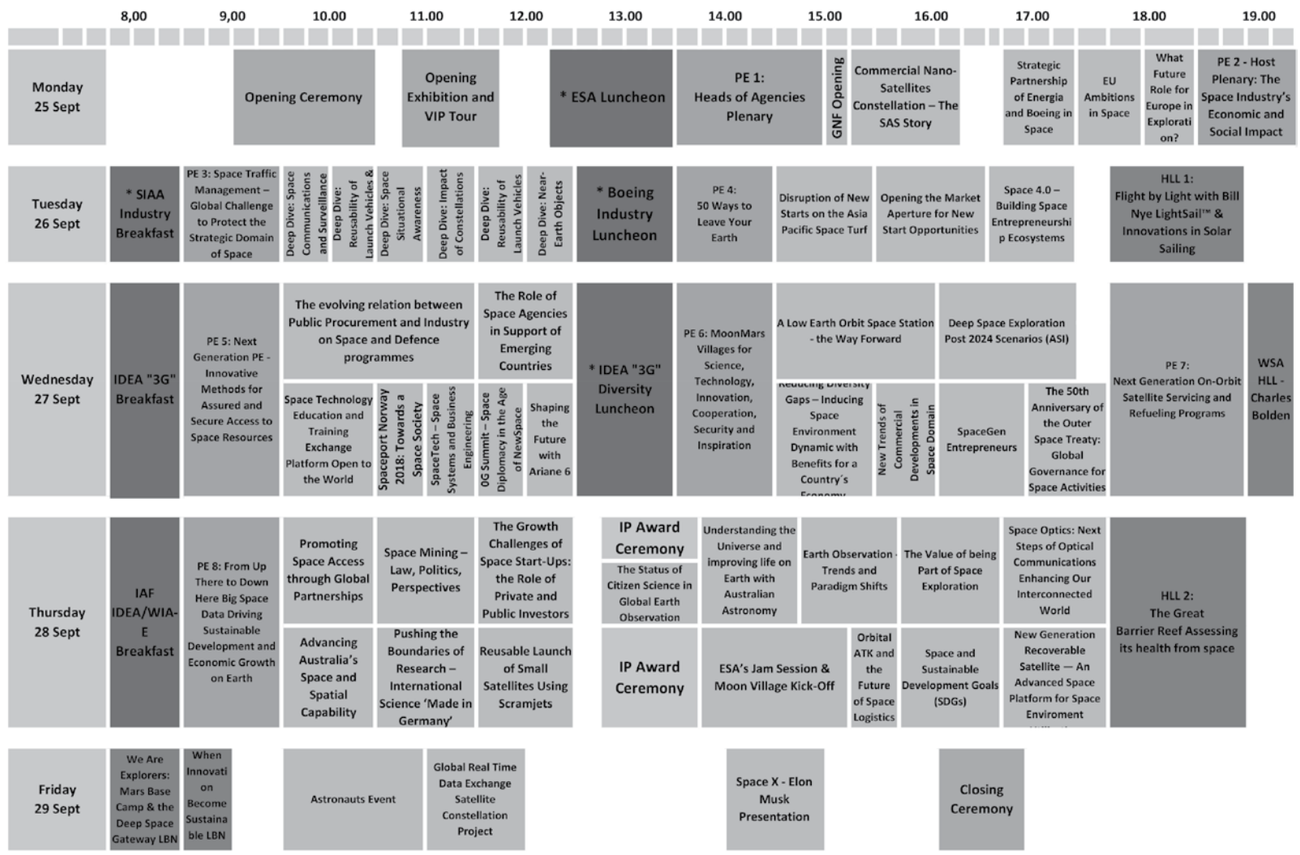
4 Congress Programme

4.1 Programmes at a Glance



*Upon Invitation Only

GNF and Plenaries at a Glance



*Upon Invitation Only

Technical Sessions at a Glance

Time / Room (Monday - Thursday)	2017-09-25	2017-09-26	2017-09-26	2017-09-27	2017-09-27	2017-09-28	2017-09-28	Time / Room (Friday)	2017-09-29	2017-09-29
	15:15-18:15	09:45-12:45	14:45-17:45	09:45-12:45	14:45-17:45	09:45-12:45	14:45-17:45		09:00-11:00	11:00-13:00
Hall N	A3.1	A3.2A	A3.2B	A3.3A	A3.3B	A3.4A	A3.5	Hall N	A3.2C	A3.4B
Hall O	D2.1	D2.2	D2.7	D2.3	D2.4	D2.5	D2.6	Hall O	D2.8/A5.4	D6.2/D2.9
Hall A	C1.1	C1.2	C1.3	C1.4	C1.5	C1.6	C1.7	Meeting Room L6	C1.8	C1.9
Hall E1	A6.1	A6.2	A6.4	A6.3	A6.9	A6.5	A6.6	Hall E1	A6.7	A6.8
Panorama Room 1	B4.2	B4.1	B4.3	B4.4	B4.5	B4.6A	B4.6B	Panorama Room 1	B4.8	B4.7
Hall E2	B1.1	B1.2	A5.2	B1.3	A5.1	B1.6	B1.5	Hall E2	B1.4	B4.10/A6.10
City Room 3	B3.1	B3.2	B3.3	B3.4/B6.5	C3.3	B3.5	B3.6/A5.3	City Room 3	B3.7	B3.8/E7.7
Hall E3	C4.1	C4.2	C4.9	C4.3	C4.4	C4.5	C4.6	Hall E3	C4.7/C3.5	C4.8/B4.5A
Panorama Room 2	C2.1	C2.2	C2.3	C2.4	C2.5	C2.6	C2.7	Panorama Room 2	C2.8	C2.9
City Room 1	C3.1	C3.2	E5.1	E5.2	E5.3	E5.4	E5.5	City Room 1	B6.3	E8.1
City Room 2	A1.1	A1.2	A1.3	A1.4	A1.5	A1.6	C3.4	City Room 2	A1.7	A1.8
Panorama Room 3	E1.6	E1.3	E1.4	E1.8	E1.5	E1.7	E1.9	Panorama Room 3	E1.1	E1.2
Riverbank 3	D1.1	E6.1	D1.2	D1.3	D1.4A	D1.4B	D4.3	Riverbank 3	D1.5	D1.6
Meeting Room L2	E4.1	E7.1	E7.2	E7.3	E7.4	E4.3A	E4.2	Meeting Room L2	E7.5	E4.3B
Meeting Room L3	B2.1	B2.2	B2.3	B2.4	B2.5	B2.6	B5.2	Meeting Room L3	B5.1	B2.7
City Room 4	B6.1	E3.1	E3.2	E3.3	E3.4	E3.5/E7.6	B6.2	City Room 4	E3.6	C4.10
Hall B	A2.1	A2.2	A4.1	A2.3	A2.4	A4.2	A2.5	Meeting Room L1	A2.6	A2.7
Riiverbank 5	A7.1	A7.2	E6.2	D5.1	E6.3	D5.2	D5.3	Riverbank 5	D5.4	A7.3
Riverbank 4	D4.1	D3.1	E2.1	D3.2	D4.2	D3.4	D3.3	Riverbank 4	D4.5	D4.4
Riverbank 2	E2.3/GTS.4	D6.1	B4.9/GTS.5	E2.2	B3.9/GTS.2	D6.3	B2.8/GTS.3	Riverbank 2	E2.4	

Category A Science & Exploration A1--> A8
Category B Applications & Operations B1--> B6
Category C Technology C1--> C4
Category D Infrastructure D1--> D6
Category E Space and Society E1--> E8

4.2 Day-by-Day

Pre-Congress Schedule

Thursday 21 September

Space Generation Congress (SGC) (see page 120)

Friday 22 September

Space Generation Congress (SGC) (see page 120)

Educators Professional Development Workshop (see page 111)

Saturday 23 September

Space Generation Congress (SGC) and Gala Dinner (see page 120)

Educators Professional Development Workshop (see page 111)

Sunday 24 September

IAC Kick-off Press Conference (see page 108)

IAA Academy Day (see page 113)

International Meeting for Members of Parliaments (see page 114)

IAC Hosts Summit (see page 116)

IPMC Young Professionals Workshop (see page 96)

Young Professionals Networking Event (see page 97)

Cross Cultural Communications and Presentation Workshop (see page 112)

Main Congress Schedule

Monday, 25 September

08:00 - 09:00 VIP Gathering for Opening Ceremony

Location: Adelaide Convention Centre - Foyer E

09:00 - 10:30 Opening Ceremony

Location: Adelaide Convention Centre – Halls A, B, C, D

The opening ceremony will feature the following:

- **Master of Ceremony**

Adam Spencer
Comedian & Radio Presenter,
Australia

- **Performances**
- **Welcome Addresses**

Hon Jay Weatherill MP
The Premier of South Australia,
Australia

Senator the Hon Arthur Sinodinos AO
Minister for Industry, Innovation and Science,
Australia

Councillor Martin Haese
The Right Honourable the Lord Mayor of Adelaide,
Australia

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

- **IAF World Space Award 2017 Presentation**

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

V. Koteswara Rao
VP Honours and Awards,
International Astronautical Federation (IAF),
India

Charles Bolden
2017 IAF World Space Award Recipient,
United States

- **Industry Anchor Sponsor Address**

Lisa Callahan
Vice President and General Manager – Civil Space,
Lockheed Martin,
United States

- **Local Organising Committee Address**

Michael Davis
Chair,
Space Industry Association of Australia (SIAA),
Australia

- **IAC 2017 Official Opening**

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

Peter Jankowitsch
President,
International Academy of Astronautics (IAA),
Austria

Kai-Uwe Schrogl
President,
International Institute for Space Law (IISL),
Germany

Michael Davis
Chair,
Space Industry Association of Australia (SIAA),
Australia

10:45 - 11:45 Official Opening of the Exhibition and VIP Tour

Location: Adelaide Convention Centre - Halls F, G, H & Link

12:15 - 13:30 ESA VIP Luncheon (Upon Invitation Only)

Location: Adelaide Convention Centre, Foyer E

Speakers:

Senator the Hon Arthur Sinodinos AO
Minister for Industry, Innovation and Science,
Australia

Hon Jay Weatherill MP
The Premier of South Australia,
Australia

Johann-Dietrich Woerner
Director General,
European Space Agency (ESA),
France

13:30 - 15:00 Plenary 1: Heads of Agencies

Location: Adelaide Convention Centre – Halls C & D

As at previous IACs, the International Astronautical Federation is organising a prominent plenary with world space agency leaders. The theme for this year's plenary is **"Business before Science or Science before Business"**. Participating Heads of Agencies will present and discuss the focus of their respective agency on new forms of business partnerships and traditional science activities. The event will be divided into 3 main sections. During the first part, the Heads of Agencies will be requested to give a 3-4 minute presentation. In the second part, the Heads of Agencies will be presented with a series of questions by the moderator, engaging them into a lively discussion. The Plenary will conclude with a interactive session with the audience.

Speakers:

Igor Komarov
Head,
ROSCOSMOS,
Russian Federation

Sylvain Laporte
President,
Canadian Space Agency (CSA),
Canada

Robert Lightfoot
Associate Administrator & Acting-Administrator,
National Aeronautics and Space Administration (NASA),
United States

Naoki Okumura
President,
Japan Aerospace Exploration Agency (JAXA),
Japan

S. Somanath
Director,
Liquid Propulsion Systems Centre (LPSC)
Indian Space Research Organization (ISRO),
India

Tian Yulong
Secretary General,
China National Space Administration (CNSA),
China

SPEAKER & MODERATOR PART 2 & 3
Johann-Dietrich Woerner
Director General,
European Space Agency (ESA),
VP for Agency Relations,
International Astronautical Federation (IAF),
France

MODERATOR PART 1
Jean-Yves Le Gall
President,
International Astronautical Federation (IAF),
France

15:15 - 16:00 Heads of Agencies Press Conference

Location: Adelaide Convention Centre - Panorama Suite

Speakers:

Igor Komarov
Head,
ROSCOSMOS,
Russian Federation

Robert Lightfoot
Associate Administrator & Acting-Administrator,
National Aeronautics and Space Administration (NASA),
United States

Naoki Okumura
President,
Japan Aerospace Exploration Agency (JAXA),
Japan

S. Somanath
Director,
Liquid Propulsion Systems Centre (LPSC)
Indian Space Research Organization (ISRO),
India

Tian Yulong
Secretary General,
China National Space Administration (CNSA),
China

Johann-Dietrich Woerner
Director General,
European Space Agency (ESA),
France

MODERATOR
Steve Eisenhart
Senior Vice President,
Space Foundation,
United States

15:00 - 15:15 Global Networking Forum (GNF) Opening

Location: Adelaide Convention Centre – Halls C & D

Welcome by the IAF President

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

15:15 -16:15 GNF – Commercial Nano-Satellites Constellation – The SAS story

Location: Adelaide Convention Centre – Halls C & D

Marcel Proust once said that *"Discovery consists not in seeking new lands but in seeing with new eyes"*. The core business of Sky and Space Global (SAS) is to construct a communication infrastructure based on nanosatellite technology and to develop software systems that will deploy, maintain orbit control and handle communication code between each of the nanosatellites to provide global coverage once a sufficient global network of nanosatellites is deployed.

This technology will allow telecom operators and connectivity service providers to deliver affordable narrow-band services to remote locations that do not have access to reliable and affordable connectivity services. It will deliver significant cost-efficiencies for the telecoms industry and more affordable connectivity and data services for people and businesses in these regions.

A low-orbit constellation allows straightforward communication with the satellites, fast download and upload times and easier imaging than at higher orbits, and their low cost is continuing to drive them forward. Offering such an innovative service is particularly vital in today's digital market. As the world is becoming increasingly interconnected, the demand for affordable connectivity is growing dramatically. This growth is partially driven by the increasing adoption of mobile technology in emerging markets and by the growing demand for data.

Despite the rapid adoption of communication technology across the world, there are still almost 3 billion people living without affordable mobile coverage in emerging markets. This creates a huge demand for connectivity services in remote locations, across the Equatorial Belt, as well as in maritime and airborne sectors. The mobile market is a key player in enabling companies to reach new customers and offer new services and the mobile industry can also create a lot of new jobs in these markets, but for the full potential of mobile communications to be realized, the citizens of these countries need cost-effective access to mobile networks, to affordable devices and data services. The ability to provide mobile coverage in remote locations is vital for building a healthy information infrastructure in developing countries where poor connectivity is a barrier to education, healthcare, business growth and economic prosperity. Nano-satellites have so far been utilized in the earth observation domain as part of commercial business models, mostly controlled by small-satellite operators. However, no company other than SAS is utilizing the nano-satellite narrow-band connectivity, while also disrupting the existing markets and services with unique technology and business model.

Organised by:
Sky and Space Global

Speaker:

Meir Moalem
CEO and Managing Director,
Sky and Space Global,
United Kingdom

Start time: 15:15 Technical Sessions

No	Description	Room
A2.1	Gravity and Fundamental Physics	Hall B
A3.1	Space Exploration Overview	Hall N
A6.1	Measurements	Hall E1
A7.1	Space Agency Strategies and Plans	Riverbank 5
B1.1	International Cooperation in Earth Observation Missions	Hall E2
B2.1	Advanced Space Communications and Navigation Systems	Meeting Room L3
B3.1	Governmental Human Spaceflight Programs (Overview)	City Room 3
B4.2	Small Space Science Missions	Panorama Room 1
B6.1	Ground Operations - Systems and Solutions	City Room 4
C1.1	Attitude Dynamics (1)	Hall A
C2.1	Space Structures I - Development and Verification (Space Vehicles and Components)	Panorama Room 2
C3.1	Space-Based Solar Power Architectures / Space & Energy Concepts	City Room 1
C4.1	Propulsion System (1)	Hall E3
D1.1	Innovative and Visionary Space Systems	Riverbank 3
D2.1	Launch Vehicles in Service or in Development	Hall O
D4.1	Innovative Concepts and Technologies	Riverbank 4
E1.6	Calling Planet Earth - Space Outreach to the General Public	Panorama Room 3
E2.3-GTS.4	Student Team Competition	Riverbank 2
E4.1	Memoirs & organisational histories	Meeting Room L2

16:45 - 17:30 GNF – Strategic Partnership of Energia and Boeing in Space

Location: Adelaide Convention Centre – Halls C & D

The International Space Station (ISS) utilization is a key point of the ISS partners' human spaceflight program for the next decade. Energia and Boeing are the primary contractors and developers of Russian and US segments of the ISS, correspondingly. They cooperate in the area of the ISS elements integration and utilization, ensuring operation and maintenance of the onboard facilities and systems. The companies will continue cooperation aboard the ISS during the term of the station's existence in the Low Earth Orbit (LEO). On the other hand, they both face the future of human space flight and cooperate in development of a variety of novel space systems and complexes including: Cis-Lunar habitats, docking systems of new generation for spacecraft, new efficient solar arrays, and also in the area of commercial flights into the LEO. The philosophy of cooperative efforts of the both companies is: careful selection of the best (primarily simple and reliable) technical solutions, flexibility at designing and development of the space infrastructure's elements, application of new technologies at their manufacturing. All these will ensure reliability and effectiveness of the space systems operation and utilization. The mentioned above topics will be discussing with participation of Mr. Vladimir Solntsev, Director General of RSC Energia and Mr. James Chilton, Senior Vice-President of Boeing.

Organised by:
S.P. Korolev Rocket and Space Corporation Energia

Speakers:

Vladimir L. Solntsev
General Director,
S.P. Korolev Rocket and Space Corporation Energia,
Russian Federation

James (Jim) H. Chilton
Senior Vice President, Space and Missile Systems, Defence, Space & Security,
The Boeing Company,
United States

17:30 - 18:00 GNF – EU Ambitions in Space

Location: Adelaide Convention Centre – Halls C & D

On 26 October 2016, the European Commission adopted a Space Strategy for Europe, setting its priorities for the years to come.

This first comprehensive strategy at European level focused on a number of key areas such as satellite navigation, Earth observation, space research and access to space.

The main orientations for the future of Europe in space are:

- Space is a strategic asset;
- Space can create jobs, boost growth and competitiveness;
- Space is an enabler responding to global and societal challenges in the areas of climate change, transport, new security and defence needs and others. Space data and services also have a transformative power in the context of growing digitisation and connectivity of our society and economy.

Today the budget allocated to space activities by the EU and its Member States represents one of the largest public space budgets in the world. In the Multi-annual Financial Framework 2014-2020, the EU invests over EUR 12 billion in space activities. The EU owns and operates world-class space systems - Copernicus for Earth observation, and EGNOS and Galileo for satellite navigation, positioning and timing. Since 2016, all those three systems are operational and delivering services to users, bringing significant benefits to citizens and businesses worldwide.

The Commission and the Member States are working on the implementation of the Space Strategy to ensure that citizens and businesses alike can enjoy the benefits of those systems. We are also working on their evolution, further synergies with security and defence (e.g. Space Surveillance and Tracking (SST), Govsatcom) and supporting our industry, notably SMEs. With the data and information we collect from space we can better understand the state of our Planet and its many eco-systems, and take actions to keep and preserve it for future generations.

For more information on the space strategy document:
https://ec.europa.eu/transparency/regdoc/rep/1/2016/EN/COM-2016-705-F1-EN-MAIN.PDF

Organised by:

European Commission

Speaker:

Pierre Delsaux
Deputy Director General, Internal Market, Industry, Entrepreneurship and SMEs,
European Commission,
Belgium

18:00 - 18:15 GNF – What Future Role for Europe in Exploration?

Location: Adelaide Convention Centre – Halls C & D

What future role for Europe in Exploration?

- Overview of Europe's role until now
- Reflection on the future of Exploration
- Europe's possible role in the future of Exploration

Organised by:

European External Action Service (EEAS)

Speakers:

François Rivasseau
Special Envoy for Space,
European External Action Service (EEAS),
Belgium

18:15 - 19:30 Plenary 2 – Host Plenary: The Space Industry's Economic and Social Impact

Location: Adelaide Convention Centre – Halls C & D

This plenary will explore the value of the global space industry with particular reference to the current Australian discussion about its future space policy. The plenary is conceived as a panel of global experts that can contribute informed opinions on the industry, how it is evolving, and how this is relevant to Australia's current space activities and the future direction.

Some of the themes that could be explored include:

- How the value of the industry is measured
- The industry in the USA, Europe, Asia Pacific and Middle East, and the challenges/opportunities in a global market
- The contribution/value of commercial activities and public good services
- How value is perceived and exploited along the value chain
- The transition from predominantly Government funded to more commercial models
- The role of major corporates/SMEs/start up entrepreneurs
- Opportunities/challenges
- Frameworks for generating growth. What works in an established space industry, what works in an emerging space industry? (space agency structures, incubators, access to venture capital funds etc)

Speakers:

Mohammed Al Ahbabi
Director General,
UAE Space Agency,
United Arab Emirates

Lisa Callahan
Vice President and General Manager – Civil Space,
Lockheed Martin,
United States

Michael Davis
Chair,
Space Industry Association of Australia (SIAA),
Australia

Brian Schmidt
Vice-Chancellor,
Australia National University (ANU),
Australia

MODERATOR
David Williams
Executive Director, Digital, National Facilities and Collections,
CSIRO
Australia

19:30 - 22:00 Welcome reception

Location: Adelaide Convention Centre - Exhibition Hall

Join Congress participants and partners for drinks, refreshments and networking. Held within the Exhibition Hall at the Adelaide Convention Centre, guests will delight with the wonderful food and drinks on offer and have the opportunity to unwind after the first official day of the Congress.

Tuesday, 26 September

07:00 - 08:30 SIAA Industry Breakfast (Upon Invitation Only)

Location: Adelaide Convention Centre - Foyer E

Speakers:

Kimberly Clayfield
Executive Manager for Space Sciences and Technology,
CSIRO,
Australia

Kerrie Dougherty
Author of the book "Australia in Space",
Australia

Greg Parker
Division Manager of the South Australian Division,
Engineers Australia,
Australia

Robie I. Samanta Roy
VP, Technology and Innovation,
Lockheed Martin Space Systems Company,
United States

Andrew Thomas
Former NASA Astronaut,
Australia

08:30 - 09:30 Plenary 3: Space Traffic Management – Global Challenges to Protect the Strategic Domain of Space

Location: Adelaide Convention Centre – Hall C

This Plenary Event will open Industry Day where distinguished speakers will describe how technological innovations and advancements in the broad arena of space traffic management will be critical to securing a safe environment in the increasing congested space domain. Following the opening remarks, a plenary panel of experts will discuss technological, regulatory, policy and industry challenges currently faced in establishing a comprehensive space traffic management system. The panelists will describe how the challenges associated with Space Weather, Space Situational Awareness, NEOs and Orbital Debris are interrelated with Space Traffic Management architectures and solutions.

Speakers:

David Ball
Deputy CEO,
Space Environment Research Centre (SERC),
Australia

Simonetta Di Pippo
Director,
United Nations Office for Outer Space Affairs (UNOOSA),
Austria

BG Phillip Garrant
Vice Commander,
USAF Space and Missiles Center,
United States

Scott Kordella
Portfolio Director,
National Space Programme National Security Engineering Center FFRDC MITRE Corporation,
United States

George Nield
FAA Associate Administrator,
Commercial Space Transportation,
United States

Paul Welsh
Vice President of Business Development,
Analytical Grap,
United States

MODERATOR
Robie I. Samanta Roy
VP, Technology and Innovation,
Lockheed Martin Space Systems Company,
United States

09:30 - 12:30 GNF – IAF Industry Day – Deep Dives Sessions

Location: Adelaide Convention Centre – Hall D

Organised by:
IAF Industry Relations Committee

MODERATOR
Eric Stallmer
President,
Commercial Spaceflight Federation,
United States

09:30 - 10:00 GNF – Deep Dive: Space Communications and Surveillance for National Security

Speaker: Adelaide Convention Centre – Hall D

Paul Sheridan
Vice President,
Optus Satellite,
Australia

Start time: 09:45 Technical Sessions

No	Description	Room
A1.2	Human Physiology in Space	City Room 2
A2.2	Fluid and Materials Sciences	Hall B
A3.2A	Moon Exploration – Part 1	Hall N
A6.2	Modelling and Risk Analysis	Hall E1
A7.2	Science Goals and Drivers for Future Exoplanet, Space Astronomy, Physics, and Outer Solar System Science Missions	Riverbank 5
B1.2	Future Earth Observation Systems	Hall E2
B2.2	Fixed and Broadcast Communications	Meeting Room L3
B3.2	Commercial Human Spaceflight Programs	City Room 3
B4.1	18th Workshop on Small Satellite Programmes at the Service of Developing Countries	Panorama Room 1
C1.2	Attitude Dynamics (2)	Hall A
C2.2	Space Structures II - Development and Verification (Deployable and Dimensionally Stable Structures)	Panorama Room 2
C3.2	Wireless Power Transmission Technologies, Experiments and Demonstrations	City Room 1
C4.2	Propulsion System (2)	Hall E3
D2.2	Launch Services, Missions, Operations, and Facilities	Hall O
D3.1	Strategies & Architectures as the Framework for Future Building Blocks in Space Exploration and Development	Riverbank 4

D6.1	Commercial Space Flight Safety and Emerging Issues	Riverbank 2
E1.3	On Track - Undergraduate Space Education	Panorama Room 3
E3.1	International Cooperation - a cornerstone of 50 years UN Space Law and space diplomacy	City Room 4
E6.1	New space individuals, projects, programs, or business units: innovation, entrepreneurship & investment at the microscopic level of analysis	Riverbank 3
E7.1	9th Nandasiri Jasentuliyana Keynote Lecture on Space Law and Young Scholars Session	Meeting Room L2

10:00 - 10:30 GNF – Deep Dive: Reusability of Launch Vehicles & Small Sats

Location: Adelaide Convention Centre – Hall D

Speaker:

Rob Meyerson
President,
Blue Origin,
United States

10:30 - 11:00 GNF – Deep Dive: Space Situational Awareness

Location: Adelaide Convention Centre – Hall D

Speaker:

Travis Langster
Vice President,
Analytical Graphics Inc.,
United States

11:00 - 11:30 GNF – Deep Dive: Impact of Constellations

Location: Adelaide Convention Centre – Hall D

Speaker:

Bruce Chesley
Senior Director of Strategy, Space and Missile Systems,
The Boeing Company,
United States

11:30 - 12:00 GNF – Deep Dive: Near-Earth Objects

Location: Adelaide Convention Centre – Hall D

Speaker:

Peter Marquez
Vice President for Global Engagement,
Planetary Resources,
United States

12:00 - 12:30 GNF – Deep Dive: Clean Space

Location: Adelaide Convention Centre – Hall D

Speaker:

Fritz Merkle
Member of the Management Board,
OHB,
Germany

12:30 - 13:30 Boeing Industry Luncheon (Upon Invitation Only)

Location: Adelaide Convention Centre - Foyer E

Speakers:

James (Jim) H. Chilton
Senior Vice President, Space and Missile Systems, Defence, Space & Security,
The Boeing Company,
United States

Maureen Dougherty
President Boeing Australia, New Zealand & South Pacific,
The Boeing Company,
Australia

Senator the Hon Arthur Sinodinos AO
Minister for Industry, Innovation and Science,
Government of Australia,
Australia

13:30 - 14:30 Plenary 4: 50 Ways to Leave Your Earth

Location: Adelaide Convention Centre – Hall C

After several years of intensive development work and marketing efforts, a number of commercial endeavors are close to launching their suborbital spaceflight services. Furthermore, two companies are intensely working on vehicles to transport people to the ISS and into LEO. On the other hand, Russia and China continue to modernize and operate their respective national crew transportation systems.

All above operators will select and train each passenger, whether he or she will be an astronaut or non-professional, based on their individual selection criteria and training programs. This session thus intends to highlight different criteria and approaches for passenger selection, individual and flight training of the various LEO and suborbital systems: An invited expert on astronaut selection & training as opening speaker shall introduce the subject of individual, operational and environmental challenges of a spaceflight for professionals and amateurs – the launch experience, weightlessness, the effect of seeing the Earth from above, the individual ways of coping with the risk of launch failure, behaving in critical situations etc.

Speakers:

Tony Antonelli
LM Space Systems-Civil and Commercial (former astronaut),
United States

Ariane Cornell
Head of Astronaut Strategy & Sales,
Blue Origin,
United States

Chris Ferguson
Director of Crew & Mission Systems,
The Boeing Company,
United States

Sergey Krikalev
Executive Director for Manned Space Flight Programs,
ROSCOSMOS,
Russian Federation

Pamela A. Melroy (Pam)
Senior Advisor, Space Strategy,
Nova Systems,
United States

George Nield
FAA Associate Administrator,
Commercial Space Transportation,
United States

MODERATOR
Brienna Henwood
Corporate Business Development,
ETC/NASTAR Center,
United States

14:30 - 15:30 GNF – Disruption of New Starts on the Asia Pacific Space Turf

Location: Adelaide Convention Centre – Hall D

In recent years the Asia Pacific region has seen a significant expansion of new starts in the space market. In this new normal, how does ”new space” work with “old space”?

This GNF panel will provide their expertise to answer these critical questions:

- New starts around the world share the culture of very hi-tech communications and virtual workforce engagements – how can that benefit or improve traditional business practices?
- How are new starts disrupting traditional business models - challenges and solutions?
- Where are the sources of friction as start-ups try to engage with global corporations?
- Can Government Labs play a role in helping start-ups engage with traditional large aerospace companies?
- Looking at how the space market is evolving, where is the sweet spot in terms of growth? Services or Information?
- Can collaboration between traditional aerospace giants and new starts help with navigating the national and international regulatory environment?
- How are business incubation programs being changed to accommodate space entrepreneurship?

Organised by:
IAF Industry Relations Committee

Speakers:

Peter Beck
Founder, CEO and CTO,
Rocket Lab,
United States

Michael Brett
CEO,
QxBranch,
United States

Kimberly Clayfield
Executive Manager for Space Sciences and Technology,
CSIRO,
Australia

Tim Parsons
CEO,
DeltaV Spacehub,
Australia

Flavia Tata Nardini
CEO,
Fleet,
Australia

MODERATOR
Scott Fouse
Vice President for Advanced Technology Center,
Lockheed Martin Space Systems,
United States

Start time: 14:45 Technical Sessions

No	Description	Room
A1.3	Medical Care for Humans in Space	City Room 2
A3.2B	Moon Exploration – Part 2	Hall N
A4.1	SETI 1: SETI Science and Technology	Hall B
A5.2	Human Exploration of Mars	Hall E2
A6.4	Mitigation and Standards	Hall E1
B2.3	Mobile Satellite Communications and Navigation Technology	Meeting Room L3
B3.3	Utilization & Exploitation of Human Spaceflight Systems	City Room 3
B4.3	Small Satellite Operations	Panorama Room 1
B4.9-GTS.5	Small Satellite Missions Global Technical Session	Riverbank 2
C1.3	Guidance, Navigation & Control (1)	Hall A
C2.3	Space Structures - Dynamics and Microdynamics	Panorama Room 2
C4.9	Hypersonic Air-breathing and Combined Cycle Propulsion	Hall E3
D1.2	Space Systems Architectures	Riverbank 3
D2.7	Small Launchers: Concepts and Operations	Hall O
E1.4	In Orbit - Postgraduate Space Education	Panorama Room 3
E2.1	Student Conference - Part 1	Riverbank 4
E3.2	Private Endeavour in Space Exploration	City Room 4
E5.1	Architecture for humans in space: design, engineering, concepts and mission planning	City Room 1
E6.2	New space industry segments, firms, actor groups, and multiple programs: innovation, entrepreneurship & investment at the mesoscopic level of analysis	Riverbank 5
E7.2	‘NewSpace’, New Laws/ How governments can foster new space activities	Meeting Room L2

15:30 - 16:30 GNF – Opening the Market Aperture for New Start Opportunities

Location: Adelaide Convention Centre – Hall D

Opening the market aperture in context of the future of low earth orbit to include discussion about the International Space Station, access to low earth orbit, demand and applications in low Earth orbit, Australia and regional opportunities in low earth orbit. In order for a viable, sustainable economy based on human spaceflight to emerge in low Earth orbit (LEO), a number of elements must be present. First, the market-place dynamics of supply and demand must exist. Second, the overwhelming reliance on government demand and public procurement must be transitioned to a market in which industry and other private sector demand is the primary market force, met by industry supply. The transition from government-led to private sector–led human spaceflight activity in LEO constitutes a great experiment in the development of global spaceflight capabilities, and the careful management of the dynamics of this transition will be of paramount importance. The panelists will be invited to discuss what can be done to promote opportunities for agencies, industry (large and small) and governments that enable economic development of low Earth orbit.

Organised by:
The Boeing Company

Speakers:

Richard DalBello
Vice President Business Development and Government Affairs,
Virgin Galactic,
United States

Alexander Derechin
Deputy General Director, Business Development and International Activity,
RSC Energia,
Russian Federation

Oliver Juckenhöfel
Vice President On-Orbit Services and Exploration,
Airbus Defence and Space,
Germany

Robbie Schingler
Co-Founder and Chief Strategy Officer,
Planet,
United States

Sam Scimemi
Director, International Space Station.
National Aeronautics and Space Administration (NASA),
United States

Michael Suffredini
President and Co-Founder,
Axiom Space, LLC,
United States

MODERATOR
John Elbon
Vice President / General Manager,
The Boeing Company,
United States

16:30 - 17:30 GNF – Space 4.0 – Building Space Entrepreneurship Ecosystems

Location: Adelaide Convention Centre – Hall D

Create the future while investing in it – ESA's Director General, a NASA Programme Executive and the founder of a booming venture capital in Asia will gather on stage to discuss and share disruptive ideas on space investment. The Space Agencies play a key role enabling innovation and the development of the space industry. The space companies create ground breaking technologies meant to solve our challenges in space and with a strong potential commercial market. How to support the deployment of those technologies and its conversion in a profitable business is a fundamental question in which Venture Capitalist are also involved. There is an on-going discussion in the venture industry on the importance of space with these strong panellists the discussion will evolve around the Space 4.0 concept, the importance of innovation and the role of the private investors on the future of space.

Organised by:
European Space Agency (ESA)

Speakers:

Kira A. Blackwell
Program Executive,
National Aeronautics and Space Administration (NASA),
United States

Tytus Michalski
Managing Partner,
Fresco Capital,
China

Johann-Dietrich Woerner
Director General,
European Space Agency (ESA),
France

MODERATOR
Frank M. Salzgeber
Head of Technology Transfer and Business Incubation Office,
European Space Agency (ESA),
The Netherlands

17:45 - 18:45 Highlight Lecture 1: Flight by Light with Bill Nye LightSail™ & Innovations in Solar Sailing

Location: Adelaide Convention Centre – Hall C

Bill Nye, CEO of The Planetary Society and one of the world's leading science educators, will highlight IAC 2017 themes through the inspiring story of LightSail®, a solar sailing spacecraft that became a global phenomenon. Leveraging this case study as context, Nye will explore stories of solar sailing origins, applications, planned missions, and future possibilities. LightSail is a citizen-funded cubesat that demonstrates solar sailing propulsion technology: flight by sunlight. In addition to discussing solar sailing, Nye will address broader themes relevant to the global space science community, including NASA's role under the current U.S. administration.

The Planetary Society is the world's largest independent non-profit space organization, with more than 50,000 members in over 100 countries worldwide. Cofounded by Carl Sagan, Bruce Murray, and Louis Friedman, the group's mission is to empower the world's citizens to advance space science and exploration.

Speaker:

Bill Nye
Chief Executive Officer,
The Planetary Society,
United States

MODERATOR
Erin Greeson
Director of Communications,
The Planetary Society,
United States

19:00 - 21:00 Young Professionals Networking Event (Restricted to Young Professionals)

Location: Adelaide Convention Centre - Hall M & Foyer M

19:00 - 21:00 ISEB Networking Event (upon invitation only)

Location: South Australian Museum

19:00 - 22:00 German Night Reception (upon invitation only)

Location: Adelaide Oval - Audi Stadium Club (John Halbert Room)

Wednesday, 27 September

07:00 - 08:30 IAF IDEA "3G" Diversity Breakfast: "First Woman on the Moon"

Location: Adelaide Convention Centre – Foyer E

In continuation of the IAF President's initiative on fostering the principle of 3G Diversity in astronautics and as an important element of the IAF 3G Diversity Day on 27 September 2017 at IAC 2017 in Adelaide, Australia, the IAF is using its IDEA platform to offer an IAF IDEA 3G Diversity Breakfast to all dele-gates focusing on the epochal and historic event in mankind's future of the first woman to set foot on the Moon under the title "First Woman on the Moon".

Based on the initiative of the International Lunar Observatory Association (ILOA), the organiser of regular Galaxy Forums and IAF member since 2011, and with strong support by the European Space Agency, The American Institute of Aeronautics and Astronautics (AIAA) and Lockheed Martin Corporation, this breakfast event shall provide an opportunity to hear about the perspectives of the first female astronaut setting foot on the Moon, the plans of space agencies and industry in advancing a "Moon village" concept with an inclusive participation and the opinions of those who have been and will be the ambassadors of humankind in exploring the universe – our astronauts.

With this event the IAF and its partners wish to draw the attention of a global space community on the long-overdue consideration of the historic significance of the first woman on the Moon as was the first man on the Moon almost 50 years ago, when humanity will reclaim its existence as a multi-world species and at that time become a multi-world civilization – a Moon Village prototype – in peace for all, and for good.

Programme:

- Welcome and Introduction (07:10 – 07:20)
  Jean-Yves Le Gall (IAF President)

- Keynote "The Historic Significance of the First Woman on the Moon" (07:20 – 07:30)
  Steve Durst (Founding Director of the International Lunar Observatory Association ILOA)

- Keynote "The Moon Village Concept" (07:30 – 07:40)
  Jan Woerner (Director General, European Space Agency)

- Keynote "Industry's Role and Commitment to Supporting a Moon Village Concept" (07:40 – 07:50)
  Danielle Richey (Systems Engineer at Lockheed Martin SSC)

- Keynote "The Astronauts' Perspective" (07:50 – 08:00)
  Sandy Magnus (Executive Director of The American Institute of Aeronautics and Astronautics AIAA)

- Concluding Remarks (08:00 – 08:10)
  Mary Snitch (IAF Vice President for Diversity Initiatives)

- Networking (08:10 – 08:30)

08:30 - 09:30 Plenary 5- Next Generation Plenary: Innovative Methods for Assured and Secure Access to Space Resources

Location: Adelaide Convention Centre – Hall C

The global economy and security of many nations depends on assured and secure access to space resources that provide communications, timing and navigation services and remote sensing data. There are many threats to this assured and secure access including space debris, hacking, space weather, ground environment, unexpected spacecraft-to-spacecraft interference (e.g. EMI), ground system uplink/downlink interference, and unstable economic and political situations. There are industry, academia, agency, national, and international efforts under way to address this broad spectrum of human-made and environmental challenges.

In this plenary, students and young professionals (approximately 35% of the IAC attendees) who are contributing to these efforts and working on how to recognize, detect, prevent, avoid, and overcome these challenges as well as addressing the legal and economic systems necessary in managing the space environment will engage in a panel discussion with other students and young professionals from around the world and interact with the audience while discussing their efforts in addressing and managing these challenges to make the space environment safe for everyone to operate in.

Speakers:

Wei-Yu Louis Feng
Student, Master's degree (M.Phil) in Space studies,
University of Cape Town,
South Africa

Doris Grosse
Research Scientist,
Australian National University (ANU) Research School of Astronomy and Astrophysics,
Australia

Andrew Ratcliffe
Head of Launch Systems,
UK Space Agency,
United Kingdom

Christianna Taylor
National Society of Black Engineers (NSBE) Space Special Interest Group,
United States

Matjaz Vidmar
PhD student in Science, Technology and Innovation Studies,
University of Edinburgh and Royal Observatory Edinburgh,
Scotland

MODERATOR
Michael K. Simpson
Executive Director,
Secure World Foundation,
United States

09:30 - 10:30 GNF – Space Technology Education and Training Exchange Platform Open to the World

Location: Adelaide Convention Centre – Hall C

In 1970s, the education and training activity came into being with the development of China Academy of Space Technology (CAST). During the past, over 40 years moving forward, CAST education and training has been developed from zero to one, to even better, and has cultivated lots of backbones and talents for Chinese aerospace industry. Shenzhou Institute (CSI) was founded in 2005 by CAST which is subordinated to Chinese Aerospace Science and Technology Corporation (CASC), which symbolised the business of CAST education and training started to be specialized and professional. As the first enterprise university in Chinese Aerospace industry, CSI follows closely with the Chinese aerospace development, and sets up a complete and systemized operation standards and regulations, and builds a scientific education and training system covering all aspects of aerospace technology. During 12 years' development, CSI has become a well-renowned space institute and selected as one the National Top Ten Enterprise University.

CSI has developed a mature training product system for customer training, which consist of various training modules ranging from satellite development and manufacturing to launching, including space basics, system and subsystem design, AIT, in-orbit operation and application. CSI has trained more than 1100 talents for over 20 countries in space technology and management, considerably facilitating space development in those countries.

CAST started to receive the first postgraduate student in 1978. Up to now, CSI has developed 7 post-doctoral research centers and work stations, 48 authorized major programs at master and doctorate levels. CSI became the only national authorized institute to conduct international education in space sector on Nov. 27th, 2016, which symbolized CSI can recruit overseas students pursuing

master and PH D in astronautics, communication and control technology. By offering a Chinese official and professional academic education, CSI can cultivate high-level space talents with strong technical background; furthermore, they can have a better understanding of Chinese history and culture.

Organised by:

China Academy of Space Technology (CAST)
Shenzhou Institute (CSI)

Speakers:

LI Ming
Vice President,
China Academy of Space Technology (CAST),
China

MODERATOR
XIE Yongchun
Director of BICE Science & Technology Committee,
China Academy of Space Technology (CAST),
China

09:30 - 11:30 GNF – The Evolving Relation Between Public Procurement and Industry on Space and Defence programmes with Strategic Perspectives Towards Respecting Costs and Schedules on Large Contracts

Location: Adelaide Convention Centre – Hall D

Space and defense projects are marked by their high level of innovation, high costs and associated risks; as well as for their long development and multi-years -operations. In this environment, a balanced assessment of the role of the two contracting parties is a fundamental element that is becoming more and more relevant with the increased maturity of the industrial landscape and with the increasing constraints of the public sector.

New tendering, procurement and cost verification procedures have been implemented during the past decades between the public sector and industry, with different rates of success. Public procurement actors and industry have agreed different concepts of cooperation applied in the space and defense sector, but also between the main public procurement actors around the globe.

With the increasing consolidation of industry and the associated vertical integration the single source based on the mono –or duopolistic industrial landscape has faced the public sector with new challenges, but the process of consolidation has also implied difficulties on the industrial side.

The role of industry in the commercialization of the space infrastructure has taken major dimensions during the last decade, which has offered new opportunities for many new actors. The traditional role of the public sector will have to evolve accordingly.

The very essence of the role of the public sector and industry in the procurement of defense and space programmes is based upon agreed objectives; it is therefore essential to bring together the key actors and decision makers on both sides of the fence to reflect on these matters during a dedicated panel session.

The panel session will address a number of the above key issues and will allow an insight of the latest views by the main public sector and industrial actors.

As a follow-on of this first panel session, a group of experts from space and defense industries as well as public procurement authorities will make dedicated presentations about the main tools, methods and processes which have been put in place by the public procurement authorities and within the industry to avoid, reduce and/or eliminate cost overruns and schedule delays.

These presentations will give insight into the processes and practices that allow adhering to committed cost and schedule during the project life-cycle improving its overall performance.

Speakers:

OPENING SPEAKER
Christopher Pyne
Minister of Defence Industry,
Government of Australia,
Australia

David Bond
Chief Operating Officer,
BAE Australia,
Australia

Lisa Callahan
Vice President and General Manager – Civil Space,
Lockheed Martin,
United States

Andy Cornfield
Finance Director,
BAE Australia,
Australia

Eric Morel de Westgaver
Director of Industry, Procurement and Legal Services,
European Space Agency (ESA),
France

Vincenzo Giorgio
Vice President of Institutional Marketing and Sales,
Thales Alenia Space,
Italy

Andrew Jacopino
Executive Director Performance Based Contracting,
Australian Department of Defence,
Australia

Hiroyuki Kishindo
Administrator Contract Management Division,
Japan Aerospace Exploration Agency (JAXA),
Japan

Steve Miller
Expert Acquisition and Procurement Issues,
Lockheed Martin,
United States

Jim Morrison
Assistant Inspector General for Audits,
National Aeronautics and Space Administration (NASA),
United States

Giuseppe Morsillo
Secretary General,
Eurospace,
France

Ron Schwenn
Assistant Director Acquisition and Sourcing Management,
U.S. Government Accountability Office (GAO),
United States

Koji Terada
Director of the Procurement Department,
Japan Aerospace Exploration Agency (JAXA),
Japan

Toni Tolker-Nielsen
Inspector General,
European Space Agency (ESA),
France

Roy Zacharias
Executive Director, Financial Investigation Service,
Australian Department of Defence,
Australia

MODERATOR
Pieter van Beekhuizen
Special Advisor to the Head of the Industrial Policy and Auditing Department,
European Space Agency (ESA),
France

RAPPORTEUR
Karina Miranda Sanchez
Head of the Industrial Audit Section,
European Space Agency (ESA),
France

Start time: 09:45 Technical Sessions

No	Description	Room
A1.4	The International Space Station in LEO and the Deep Space Habitat in Cis- Lunar Space as platforms for simulated Mars voyages	City Room 2
A2.3	Microgravity Experiments from Sub-Orbital to Orbital Platforms	Hall B
A3.3A	Mars Exploration – missions current and future	Hall N
A6.3	Hypervelocity Impacts and Protection	Hall E1
B1.3	Earth Observation Sensors and Technology	Hall E2

B2.4	Advanced Satellite Services	Meeting Room L3
B3.4-B6.5	Flight & Ground Operations of HSF Systems (A Joint Session of the Human Spaceflight and Space Operations Symposia)	City Room 3
B4.4	Small Earth Observation Missions	Panorama Room 1
C1.4	Guidance, Navigation & Control (2)	Hall A
C2.4	Advanced Materials and Structures for High Temperature Applications	Panorama Room 2
C4.3	Propulsion Technology (1)	Hall E3
D1.3	Technologies to Enable Space Systems	Riverbank 3
D2.3	Upper Stages, Space Transfer, Entry and Landing Systems	Hall O
D3.2	Systems and Infrastructures to Implement Future Building Blocks in Space Exploration and Development	Riverbank 4
D5.1	Safety and Quality for "Low Cost" Space Programs	Riverbank 5
E1.8	Hands-on Space Education and Outreach	Panorama Room 3
E2.2	Student Conference - Part 2	Riverbank 2
E3.3	The Demand Side of the Space Economic Equation: Understanding and Evaluating the Changing Market Dynamics in Space Activities	City Room 4
E5.2	Models for Successfully Applying Space Technology Beyond Its Original Intent	City Room 1
E7.3	Refugees and the role of space communications/Status and Practice of Charter for Man-made Disasters	Meeting Room L2

10:30 - 11:00 GNF – Spaceport Norway 2018: Towards a Space Society

Location: Adelaide Convention Centre – Hall C

The first Spaceport Norway event was announced for the first time at IAC 2016 in Guadalajara, Mexico. This summer NASA, UNOOSA, ESA, Norwegian Space Centre and many other leading space sector leaders were represented in Stavanger, Norway - joining us on our mission to make space science and technology relevant and valuable for other sectors and industries. During the 3-day event we discussed solutions and defined actions, for how space technology can drive sustainable development and breakthrough innovation. Our talk will focus on the evolution of this perspective, how space technologies and infrastructure is essential to solving the many global challenges ahead, and how this can transform and change our world, unlock hidden market opportunities and put us on the path to a Space Society.

Organised by:

Spaceport Norway

Speaker:

Ole Dokka
Executive Director,
Spaceport Norway,
Norway

Sebastian Straube
Founder & CEO,
Interstellar Ventures,
Germany

11:00 - 11:30 GNF – SpaceTech – Space Systems and Business Engineering

Location: Adelaide Convention Centre – Hall C

The space sector is a fast-growing segment. It features most recent research activities and offers the possibility to transfer newly developed technologies in practical use cases. Space industries have, over the years, tended to become multinational in nature. Thus, a demand identified by both industry and agencies was the need to provide training to their prospective future systems engineers and programme managers to prepare them to work in or direct international teams. Industry in particular must have staff that is both highly qualified technically and which understand and can implement the modern business practices that are necessary to run a profitable business in today's competitive environment. The Graz University of Technology (TU Graz) offers a master's programme, called SpaceTech. It is a successor, with an expanded and improved curriculum, to the SpaceTech programme that was offered for thirteen years by the Delft University of Technology in the Netherlands. The programme is hosted by TU Graz under the leadership of the Life Long Learning Department and targets postgraduates with at least 5 years of professional experience. It contains the topics Project Management, Business Engineering, Systems Engineering, Space Mission Analysis and Design, Earth Observation, Navigation, Telecommunications, Interpersonal Skills and Leadership Development, Human Spaceflight, Selected Topics on Space Systems Engineering. Core of the Program is the Central Case Project (CCP). The first round of SpaceTech has been successfully completed, the next course will start in March 2018. The CCP was supported by ESA and is related to "Moon Village". The participants elaborated an innovative concept of cooperating moon rovers. The SpaceTech Directors Otto Koudelka and Ed Ashford present this unique programme.

Organised by:

Graz University of Technology (TU Graz)

Speakers:

Otto Koudelka
Head of the Institute of Communications Network & Satellite Communications and SpaceTech Director,
Graz University of Technology (TU Graz),
Austria

Ed Ashford
SpaceTech Co-Director,
Graz University of Technology (TU Graz),
Austria

11:30 - 12:00 GNF – 0G Summit – Space Diplomacy in the Age of NewSpace

Location: Adelaide Convention Centre – Hall C

Since the dawn of human spaceflight, astronauts have been captivated in space by the Earth's mystical blue aura and drawn to a world beyond political boundaries. At the advent of our NewSpace age, i.e., commercialization of space, the day is not far when nations will galvanize their common humanity in space to find innovative solutions for a peaceful world. The GNF presentation will unveil Space Trust's thought leadership to make Space the New Frontier for Peace by engaging world leaders to utilize space as a sustainable tool for peacemaking and conflict resolution on Earth. To that end, Namira Salim, Founder & Executive Chairperson of Space Trust will report on its lead initiative, 0G Summit, which was launched on the sidelines of the UN General Assembly on 18th September 2017 towards 0G Summit 2030, the first peace summit in space in support of Space2030 and the UN Sustainable Development Agenda 2030.

Organised by:

Space Trust

Speaker:

Namira Salim
Founder & Executive Chairperson,
Space Trust,
United Kingdom

11:30 - 12:30 GNF – The Role of Space Agencies in Support of Emerging Countries

Location: Adelaide Convention Centre – Hall D

The Global Network Forum (GNF) for Emerging Countries will be held during the IAC 2017 in Adelaide. This GNF is expected to be excellent occasions to promote IAF activities for emerging countries.

The UN Agreement on the Sustainable Development Growth (SDG) adopted in 2015 highlights that international collaboration is becoming increasingly important as it is one of critical factors to improve the welfare of people. This is especially relevant for developing countries and the collaboration between Space Agencies around the world have in order to have a more important role to play in promoting the use of space technology for sustainable socioeconomic development. Space technologies and applications can support decisions and policy makers in developing, implementing and monitoring sectorial policies and enhancing national capabilities in e.g. resource management, agricultural, regional development. In this regard, the GNF will engage space agencies leaders in reflecting on their role in support of emerging countries and promote the initiative of IAF members' collaboration to enhance the utilization of space technology to enhance capabilities of emerging space nations.

Organised by:

IAF Committee for Liaison with International Organisations and Developing Nations (CLIODN)

COMMITTEE FOR LIAISON WITH INTERNATIONAL ORGANISATIONS AND DEVELOPING NATIONS (CLIODN)

Speaker:

Carlos Alvarado Briceño
President,
Central American Association for Aeronautics and Space (ACAE),
Costa Rica

Panellists:

Roberto Battiston
President,
Italian Space Agency (ASI),
Italy

Simonetta Di Pippo
Director Director,
United Nations Office for Outer Space Affairs (UNOOSA),
Austria

Thomas Djamaluddin
Chairman,
Indonesian National Institute of Aeronautics and Space,
Indonesia

Seishiro Kibe
Advisor,
Japan Aerospace Exploration Agency (JAXA),
Japan

Valanathan Munsami
CEO,
South African National Space Agency (SANSA),
South Africa

Francisco Javier Mendieta Jiménez
General Director,
Mexican Space Agency (AEM),
Mexico

MODERATOR
Johann-Dietrich Woerner
Director General,
European Space Agency (ESA),
France

MODERATOR
Christina Giannopapa
CLIODN Chair,
International Astronautical Federation (IAF),
France

MODERATOR
Joo-Jin Lee
VP for Developing Countries and Emerging Members,
International Astonautical Federation (IAF),
Republic of Korea

12:00 - 12:30 GNF – Shaping the Future with Ariane 6

Location: Adelaide Convention Centre – Hall C

ArianeGroup develops and supplies innovative and competitive solutions for civil and military space launchers. It is the lead contractor for Europe's Ariane 5 and Ariane 6 launcher families, and its activities cover the entire life-cycle of a launcher: design, development, production, operation and commercial service – the latter through its subsidiary Arianespace. A joint venture equally owned by Airbus and Safran, it employs 9,000 highly qualified staff in France and Germany.

ArianeGroup's expertise encompasses all aspects of state-of-the-art propulsion technologies for launchers – both liquid and solid – as well as energetic materials and composites. Together with its subsidiaries, ArianeGroup also enjoys a global reputation as specialist in the field of equipment and propulsion for satellites and space vehicles.

For the group, the future starts now: on September 13, 2016, the European Space Agency member states gave their final go-ahead to the new heavy launcher Ariane 6. Innovative and well-adapted to new market segments at competitive prices, the launcher will continue the unique success-story of Arianespace, a leader in the commercial satellite market for the last three decades, with more than 550 satellites placed into orbit since 1980.

Looking to the future with confidence, ArianeGroup and Arianespace are focusing on innovation. Ariane 6, with a maiden flight scheduled for 2020, will provide launch solutions for commercial and institutional customers. Its highly modular design offers unprecedented flexibility – a critical attribute in today's rapidly-changing market.

With a very spacious fairing, Ariane 6 can lift any type of payload into an optimized energy-saving orbit, in LEO, GTO or SSO. It is perfectly suited not only to "conventional" single or dual missions, but also, with an upper stage powered by the re-ignitable Vinci engine, to complex missions addressing new market requirements, such as all-electric propulsion satellites, or batches of satellites for constellations.

Ariane 6 will be available in two different versions:

- The four-booster Ariane 64 (up to 12 metric tons into GTO, in a dual launch)
- The two-booster Ariane 62 (over 4.5 metric tons into GTO, or 7 metric tons into SSO)

ArianeGroup is also preparing now for the future of Europe's launchers beyond 2030, and has recently developed a low-cost reusable engine demonstrator named Prometheus, which runs on Lox-Methane, designed to equip launchers as of 2030. Prometheus is based on a new concept and is being created with the extensive use of innovative design and production methods and technologies such as 3D printing, predictive maintenance and digital control.

Organised by:

Ariane Group & Arianespace

arianeGROUP

Speakers:

Marc Valès
Head of Future Programmes,
Ariane Group,
France

Jacques Breton
Senior Vice President Sales & Business Development,
Arianespace,
France

12:30 - 13:30 IAF "3G" IDEA – "Excellence in 3G Diversity Award" Luncheon (Upon Invitation Only)

Location: Adelaide Convention Centre – Foyer E

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

At IAC 2017 this newly created award will be given for the first time. The inaugural winner of this award is the Mohammed Bin Rashid Space Centre (MBRSC) from the UAE. This Luncheon is dedicated to the award ceremony for the first "IAF Excellence in 3G Diversity Award".

Draft Programme:

- Welcome (12:45 – 12:50)
  Jean-Yves Le Gall (IAF President)

- Introduction of the IAF 3G Diversity Award (12:50 – 12:55)
  Mary Snitch (IAF Vice President for Diversity Initiatives)

- Award Ceremony and Photo (12:55 – 13:00)
- Presentation by the Award winner (13:00 – 13:20)
  Mohammed Bin Rashid Space Centre (MBRSC)
- Networking (13:20 – 13:30)

13:30 - 14:30 Plenary 6: MoonMars Villages for Science, Technology, Innovation, Cooperation, Security and Inspiration

Location: Adelaide Convention Centre – Hall C

The panelists will review recent MoonMars science discoveries and key projects towards robotic & human villages on the Moon & Mars. They will discuss potential MoonMars research (planetary & space science, human spaceflight, astrobiology, astrophysics, technologies, life support, operations, technical validation and development). They will debate the benefits and values of MoonMars Villages for Innovation, Cooperation, Security & Inspiration. The panel will address various aspects and questions from the community e.g.:

1. What are the current MoonMars plans for different space agencies and space actors?
2. How to use MoonMars data to unlock imagination, inspire youth, public, engineers & stakeholders?
3. What are Knowledge Gaps and precursor robotic missions towards robotic villages ?
4. Why MoonMars robotic and human villages ?
5. How can MoonMars Villages foster peaceful innovation and make our world safer?
6. How to establish infrastructures on the Moon surface and then on Mars to benefit multiple users?
7. What is the role of small or emerging space countries and new partners?
8. How to collaborate effectively between countries, agencies and new stakeholders?

Speakers:

Simonetta Di Pippo
Director,
United Nations Office for Outer Space Affairs (UNOOSA),
Austria

Pascale Ehrenfreund
Chair of Executive Board,
German Aerospace Center (DLR),
Germany

David Korsmeyer
Director of Engineering,
NASA Ames,
United States

Sergey Krikalev
Executive Director for Manned Space Flight Programs,
ROSCOSMOS,
Russian Federation

Tai Sik Lee
President,
Korean Institute of Civil Engineering & Building Technology (KICT),
Republic of Korea

Joao Lousada
Analogue astronaut,,
2017 PMAS Simulation at LunAres Base,
Poland

Francois Rivasseau
Director of Security Policy & Space Policy ,
European External Action Service (EEAS),
France

Monika Johanna Pardo Spiesse
Winner of SGAC/ILEWG IAC2017 article prize competition,
Germany

Johann-Dietrich Woerner
Director General,
European Space Agency (ESA),
France

MODERATOR
Bernard Foing
Astrophysicist, MoonMars Scientist (ESA ESTEC),
Executive Director ILEWG,
The Netherlands

14:30 - 15:30 GNF – Reducing Diversity Gaps – Inducing Space Environment Dynamic with Benefits for a Country´s Economy, Education, Strategy and Sovereignty

Location: Adelaide Convention Centre – Hall C

Diversity goes beyond ethnicity and includes also gender, age and multidisciplinarity. "Unlocking imagination, fostering innovation and strengthening security" for the space sector are major demands to inspire our generation and the ones to come through the multitude of diverse perspectives.

The space sector is a truly global work area and has rapidly grown in the last decades whilst facing many challenges: settled space actors have been forced to keep up with commercial competition especially from the USA and with emerging space powers such as India and China. In the coming decades strengthened international cooperation will be a key to increase space business and to ensure the peaceful use of outer space. A manifold of perspectives and ideas created through different disciplines, ages and cultures is one step for success. Ensuring diversity at all levels of responsibility is another important step for success. Both steps are intertwined and need to be further developed joining competencies and cultures. Therefore, it is timely to give space to diversity.

The aim of the panel is to create awareness for diversity as a success factor for the vitalization of the space sector and the benefits for economy, education, strategy and sovereignty.

The moderated discussion will focus especially on issues of diversity in the following areas global cooperation

for high demanding issues like environment safeguard, exploration, security etc. space economy developed and implemented via multidisciplinary approaches e.g. by joint work of space actors and non-space actors (New Space Economy etc.) economic benefits by reducing gender gap at all levels, especially at decision levels conjugate the age gap and new space dynamics for more innovative and disruptive approaches.

Organised by:
Women in Aerospace Europe (WIA-E)

Speakers:

Simonetta Di Pippo
Director,
United Nations Office for Outer Space Affairs (UNOOSA),
Austria

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

Naomi Mathers
Deputy Chair,
Space Industry Association of Australia (SIAA),
Australia

Susmita Mohanty
CEO and Co-Founder,
Earth2Orbit,
India

MODERATOR
Mary Snitch
Vice President for Global Membership Development and Diversity Initiatives,
International Astronautical Federation (IAF),
United States

Start time: 14:45 Technical Sessions

No	Description	Room
A1.5	Radiation Fields, Effects and Risks in Human Space Missions	City Room 2
A2.4	Science Results from Ground Based Research	Hall B
A3.3B	Mars Exploration – Science, Instruments and Technologies	Hall N
A5.1	Human Exploration of the Moon and Cislunar Space	Hall E2
A6.9	Orbit Determination and Propagation	Hall E1
B2.5	Space-Based Navigation Systems and Services	Meeting Room L3
B3.9-GTS.2	Human Spaceflight Global Technical Session	Riverbank 2
B4.5	Access to Space for Small Satellite Missions	Panorama Room 1
C1.5	Guidance, Navigation & Control (3)	Hall A
C2.5	Smart Materials and Adaptive Structures	Panorama Room 2
C3.3	Advanced Space Power Technologies and Concepts	City Room 3
C4.4	Electric Propulsion	Hall E3
D1.4A	Space Systems Engineering - Methods, Processes and Tools (1)	Riverbank 3
D2.4	Future Space Transportation Systems	Hall O
D4.2	Contribution of Space Activities to Solving Global Societal Issues	Riverbank 4
E1.5	Enabling the Future - Developing the Space Workforce	Panorama Room 3
E3.4	Assuring a Safe, Secure and Sustainable Space Environment for Space Activities	City Room 4
E5.3	Contemporary Arts Practice and Outer Space: A Multi-Disciplinary Approach	City Room 1
E6.3	New space at the national, international, and overall industry levels: innovation, entrepreneurship & investment at the macroscopic level of analysis	Riverbank 5
E7.4	Space law Developments in Asia-Pacific: Diverging national space legislation with regard to the applicability of space law to suborbital flights	Riverbank 3

14:30 - 16:00 GNF – A Low Earth Orbit Space Station – the Way Forward

Location: Adelaide Convention Centre – Hall D

Spurred in by the foreseen "expiry date" of the International Space Station (ISS), the key spacefaring nations and agencies are currently developing their individual programs in line with their own identified prime objectives and goals. Concurrently, a paradigm shift can also be observed with an influx of private players on the space scene taking over the role previously occupied predominantly by government agencies. Using the ISS as an impressive long-term international cooperation project, it is absolutely crucial to commence a dialog between agencies as well as industry and private and commercial partners, to discuss and plan for the future of manned space for the post-ISS era.

For this means, the Low Earth Orbit is considered to be a highly attractive option, with the potential to offer a low-cost destination for not only satellites, but also for a potential new infrastructure. The proposed Discussion Panel will seek to gauge opinions on this highly relevant topic from an international Panel of leaders within the space segment, allowing a platform for the exchange of ideas and discussions on the next steps required in order to initiate the necessary political, conceptual, technical and economic processes for the development of a follow-on platform in LEO.

Organised by:
German Aerospace Center (DLR)

Speakers:

William H. Gerstenmaier
Associate Administrator for the Human Exploration and Operations Directorate,
National Aeronautics and Space Administration (NASA),
United States

Oliver Juckenhöfel
Vice President On-Orbit Services and Exploration,
Airbus Defence and Space,
Germany

Sergey Krikalev
Executive Director for Manned Space Flight Programs,
ROSCOSMOS,
Russian Federation

David Parker
Director of Human Spaceflight and Robotic Exploration,
European Space Agency (ESA),
France

Mark Sirangelo
Corporate Vice President,
Sierra Nevada Corporation,
United States

Koichi Wakata
JAXA Astronaut (1996, 2000, 2009, 2013) & ISS Program Manager,
Japan Aerospace Exploration Agency (JAXA),
Japan

MODERATOR
Hansjörg Dittus
Executive Board Member for Space Research and Technology,
German Aerospace Center (DLR),
Germany

15:30 - 16:00 GNF – New Trends of Commercial Developments in Space Domain

Location: Adelaide Convention Centre – Hall C

Glavkosmos (Joint Stock Company) is a subsidiary of ROSCOSMOS State Space Corporation. The key objectives of the company are the promotion of Russian space industry achievements in the world market and management of challenging space projects. For more than thirty years, Glavkosmos has evolved from a ministry department to a global company which now plays an important role in the international activities of the Russian space industry. The company is an operator for Soyuz-2 commercial launches, an official distributor of Earth observation data obtained from the Russian satellites, and a supplier of solutions in satellite building, operating of space systems, telecommunication systems and scientific research. Glavkosmos is a unified point of contact for cooperation between the Russian companies of the space industry and foreign customers. Under Glavkosmos guidance, more than 90 secondary payloads have been launched, 17 Soyuz-ST launches have been executed from the Guiana Space Center. For over 30 years of work, Gkavkosmos has managed upwards of 120 international contracts. At the IAC-2017, Glavkosmos will organise a roundtable to discuss cooperation between the Russian space companies, Glavkosmos, and foreign partners. The key topics for discussion will be:

- the export policy in the Russian space industry;
- commercialization;
- a new launch services operator – GK Launch Services;
- development of a smallsat bus for customers; and
- commercial manned space flight programs.

Organised by:
Glavkosmos

Speakers:

Alexandr Baklanov
Deputy General Director of JSC SRC Progress,
Progress Space Rocket Center,
Russian Federation

Natalia Lokteva
Director of the Departments of International Cooperation,
ROSCOSMOS,
Russian Federation

Konstantin Naumov
First Deputy General Director for Economic and Financial Affairs,
Progress Space Rocket Center,
Russian Federation

Aleksandr Serkin
Director General,
GK Launch Services,
Russian Federation

MODERATOR
Denis Lyskov
Director General,
Glavkosmos,
Russian Federation

16:00 - 17:00 GNF – SpaceGen Entrepreneurs

Location: Adelaide Convention Centre – Hall C

The SpaceGen Entrepreneurs is an event organised by the Space Generation Advisory Council designed to connect entrepreneurs and potential entrepreneurs with startup veterans and Venture Capitalists, Investors, Business Angels and Business Incubators.

The space industry is on the brink of a new era defined by large technological transformations and changes in the business models. The paradigm of a Government-led industry is evolving into a scenario with more players in which the commercial activities, start-ups and private initiatives are gaining market share while opening the access to space to more countries. This rapid advancement of technologies has brought new opportunities and markets. From the revolution of cubesats to planned satellite constellations broadcasting internet worldwide to 3D printing in space to enhanced international collaboration, the space landscape is evolving at a fast pace. The SpaceGen Entrepreneurs will feature high-calibre entrepreneurs, business investors and startup experts that will analyse how to capitalize new commercial opportunities in the space industry, discuss the most effective ways to succeed in startup ventures and share the human story behind space entrepreneurs.

The SpaceGen Entrepreneurs format is the following:

- **Startup ecosystem panel (30 min):** the panel will feature several prominent space entrepreneurs and investors from the space startup world sharing their experiences and tips for success.
- **Entrepreneur's TED-style talk (30 min):** Three inspiring entrepreneurs from all over the globe will share the personal stories behind their ventures. Learn about the challenges they overcame, their experiences in the start-up world, and how they found their path to success.
- **Networking cocktail (1h)**: after the event there will be a networking cocktail for entrepreneurs and potential entrepreneurs to meet with investors, VC's, business incubators and members of the space startup landscape.

Startup Ecosystem Panel:

Peter Beck
Founder, CEO and CTO,
Rocket Lab,
United States

Carissa Christensen
CEO,
Bryce Space and Technology,
United States

Troy McCann
Founder and Managing Director,
MoonshotX,
Australia

Marc Serres
Director of Space Affairs,
Ministry of the Economy,
Luxembourg

MODERATOR
Arnau Pons
Space Generation Advisory Council,
Purdue University
United States

Entrepreneur's TED-Style Talk:

Deepak Atyam
Co-Founder,
Tri-D Dynamics,
United States

Anastasiia Volkova
CEO and Founder,
FluroSat,
Australia

Marco Witzmann
Co-Founder and CEO,
Valispace,
Germany

16:00 - 17:30 GNF – Deep Space Exploration Post 2024 Scenarios

Location: Adelaide Convention Centre – Hall D

Human and Robotics Exploration is a pillar of any space strategy. After 2024 new scenarios will be possible, basing on a wider complexity of the involved stakeholders.

The preparation of the future exploration roadmap strongly depends on enabling technologies and lesson learnt from the previous investments. However, new stakeholders are ready to enter the game and a global policy to achieve the best results in the shorter time is expected.

ASI, as one of the stronger supporter of the exploration program, considers crucial to understand the driving parameters of this evolution to establish a new governance and exploit all the possible capabilities in order to achieve synergies and cooperation at

global level. In this analysis, it is important to highlight the different roles of institutional and industrial partners that, for the first time, can contribute together to focus the critical path for the space colonization. In particular we consider the following topics as top priorities:

- Post 2024 scenario
- Role of ISS
- Deep Space Habitats
- Atmospheric Re-entry
- Mars exploration
- Sample return

Invited lecturers will present their proposals and perspectives for the post 2024 scenario.

Organised by:

Italian Space Agency (ASI)

Speakers:

Roberto Battiston
President,
Italian Space Agency (ASI),
Italy

Simonetta Di Pippo
Director,
United Nations Office for Outer Space Affairs (UNOOSA),
Austria

Pascale Ehrenfreund
President,
German Aerospace Center (DLR),
Germany

William H. Gerstenmaier
Associate Administrator for the Human Exploration and Operations Directorate,
National Aeronautics and Space Administration (NASA),
United States

Jun Gomi
Director of Preparatory Office for the 2nd International Space Exploration Forum (ISEF2),
Japan Aerospace Exploration Agency (JAXA),
Japan

Igor Komarov
Head,
ROSCOSMOS,
Russian Federation

Sylvain Laporte
President,
Canadian Space Agency (CSA),
Canada

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

Johann-Dietrich Woerner
Director General,
European Space Agency (ESA),
France

Tian Yulong
Secretary General,
China National Space Administration (CNSA),
China

MODERATOR
Maria Cristina Falvella
Head of Strategies and Industrial Policy Unit,
Italian Space Agency (ASI),
Italy

17:00 - 17:45 GNF – The 50th Anniversary of the Outer Space Treaty: Global Governance for Space Activities

Location: Adelaide Convention Centre – Hall C

The Outer Space Treaty serves as the constitution of international space law and this year marks its 50th anniversary. The United Nations Committee on the Peaceful Uses of Outer Space (COPUOS) is the international body where the Outer Space Treaty and the other instruments under the legal regime of outer space were negotiated. For those past 50 years COPUOS has continuously served as the only intergovernmental platform for fostering global governance of outer space activities. Regardless of the significant developments in space technology and applications, the Outer Space Treaty has long been contributing in areas such as ensuring the peaceful uses of outer space, providing freedom of exploration and utilization by States, and preventing harmful contamination of celestial bodies. The Treaty manifests international responsibility for national space activities, including by non-governmental entities. As more actors, including States, intergovernmental and non-governmental entities, as well as industry and private sector, increasingly engage in space activities, there will be an increasing need to protect the space environment and enhance the safety of space operations, the security of space assets, space systems and critical infrastructures, and the sustainability of outer space activities. The United Nations Office for Outer Space Affairs (UNOOSA) and the International Institute of Space Law (IISL) will co-organise a panel discussion to celebrate the 50th anniversary of the Outer Space Treaty, discuss the safety, security and sustainability of outer space activities, and bring attention to science, technology, law and policy development. The panel discussion will reflect on global governance of outer space activities in the broader context of space security and the long-term sustainability of outer space activities, and will reflect on the importance of frameworks for the safety of space operations. It will address how UNISPACE+50 under the framework of the 4 pillars, Space Economy, Space Society, Space Accessibility and Space Diplomacy, may contribute to the global governance of outer space activities.

Organised by:

United Nations Office for Outer Space Affairs (UNOOSA)

Speakers:

Peter Jankowitsch
President,
International Academy of Astronautics (IAA),
Austria

Peter Martinez
Professor,
SpaceLab,
University of Cape Town,
South Africa

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

MODERATOR
Simonetta Di Pippo
Director,
United Nations Office for Outer Space Affairs (UNOOSA),
Austria

17:45 - 18:45 Plenary 7: Next Generation On-Orbit Satellite Servicing and Refuelling Programmes

Location: Adelaide Convention Centre – Hall C

Satellite servicing is creating a paradigm-shift in the space industry and could potentially transform in-orbit architectures. It changes the economics of satellite fleet management by providing commercial satellite operators and government agencies with more flexibility in the timing of replacement satellites and will enable a new generation of spacecraft that can be assembled on orbit and can share existing bus resources.

The panel will address advances in remote maneuvers, the mechanics of on orbit operations and how these services will increase resilience. The innovative missions that will be discussed will inspire new ways of thinking about both GEO and LEO orbit.

Speakers:

Shahida Barick
Head of Satellite Operations,
Effective Space Solutions (ESS),
United Kingdom

Robert Feierbach
Vice President, Business Development,
Space Infrastructure Services (SIS),
United States

Michel Frezet
Head of On-Orbit Servicing,
Airbus Defence and Space,
France

Joerg Kreisel
CEO,
JKIC,
Germany

Peter Swan
President,
International Space Elevator Consortium,
United States

MODERATOR
Tony Colucci
Vice President of Business Development,
Space Systems Loral (SSL),
United States

18:45 - 19:15 IAF World Space Award Highlight Lecture

Location: Adelaide Convention Centre – Hall C

Charles Bolden
2017 IAF World Space Award Recipient,
President/CEO,
The Bolden Consulting, Group LLC ,
United States

MODERATOR
V. Koteswara Rao
VP Honours and Awards,
International Astronautical Federation (IAF),
India

19:30 - 21:00 Young Professionals Networking Event (restricted to Young Professionals)

Location: Adelaide Convention Centre - Hall M & Foyer M

Thursday, 28 September

07:00 - 08:30 IAF International Platform for Diversity and Equality in Astronautics IDEA & Women in Aerospace Europe WIA-E – Joint Breakfast

Location: Adelaide Convention Centre – Foyer E

A Gender Diverse Space Workforce – A Key for Unlocking Imagination, Fostering Innovation and Strengthening Security

See more on page 110

08:30 - 09:30 Plenary 8: From Up There to Down Here Big Space Data Driving Sustainable Development and Economic Growth on Earth

Location: Adelaide Convention Centre – Hall C

Plenary 8 will explore how the dramatically expanding, diverse “big space data” sets from satellite based Earth observations can be leveraged to support global sustainable development and economic growth on Earth and, ultimately, beyond it.

Having the best choices for our common future depend on putting space observations to work down here on Earth through efforts to raise living standards, and give more people the opportunity to realize their potential. This economic growth must be socially and environmentally sustainable, if it is to translate into permanent, rather than transient, benefits.

Ultimately, the same sorts of challenges we face in ensuring sustainable development here on Earth will be ones we need to face as we start to scale-up exploration and development, of other planets. They may help us create the necessary conditions for realizing the ideas we have now while creating space for ideas that have not even been thought of yet.

Speakers:

Aditya Agrawal
Director of Data Ecosystems Development,
Global Partnership for Sustainable Development Data (GPSDD),
United States

Brendan Bouffler
Manager of Amazon Web Services Research Cloud Program,
Amazon Web Services,
United Kingdom

Grega Milcinski
Chief Executive Officer and Co-Founder,
Sinergise,
Slovenia

Stuart Minchin
Chief of Environmental Geoscience Division,
Geoscience Australia,
Australia

MODERATOR
Harry Cikanek
Director (acting) of Center for Satellite Applications and Research,
US National Oceanic and Atmospheric Administration,
United States

Start time: 09:45 Technical Sessions

No	Description	Room
A1.6	Astrobiology and Exploration	City Room 2
A3.4A	Small Bodies Missions and Technologies (Part 1)	Hall N
A4.2	SETI 2: SETI and Society	Hall B
A6.5	Space Debris Removal Issues	Hall E1
B1.6	Big Data, Data Cubes and new platforms to exploit large-scale, multi-temporal EO Data	Hall E2
B2.6	Near-Earth and Interplanetary Communications	Meeting Room L3
B3.5	Astronaut Training, Accommodation, and Operations in Space	City Room 3
B4.6A	Generic Technologies for Small/Micro Platforms	Panorama Room 1
C1.6	Mission Design, Operations & Optimization (1)	Hall A
C2.6	Space Environmental Effects and Spacecraft Protection	Panorama Room 2
C4.5	Propulsion Technology (2)	Hall E3
D1.4B	Space Systems Engineering - Methods, Processes and Tools (2)	Riverbank 3
D2.5	Technologies for Future Space Transportation Systems	Hall O
D3.4	Space Technology and System Management Practices and Tools	Riverbank 4
D5.2	Knowledge management and collaboration in space activities	Riverbank 5
D6.3	Enabling safe commercial spaceflight: vehicles and spaceports	Riverbank 2
E1.7	New Worlds - Non-Traditional Space Education and Outreach	Panorama Room 3
E4.3A	History of Australia's Contribution to Astronautics	Meeting Room L2
E5.4	Space Assets and Disaster Management	City Room 1
E7.6-E3.5	32nd Joint IAA/IISL Round Table: Technological and legal challenges for on-orbit servicing	City Room 4

09:30 - 10:30 GNF – Advancing Australia's Space and Spatial Capability

Location: Adelaide Convention Centre – Hall C

The Australian spatial sector launched its 2026 Spatial Industry Transformation and Growth Agenda (2026Agenda) Action Plan in April 2017. The 2026Agenda is a 10-year rolling Action Plan and roadmap, developed in consultation with more than 500 individuals of business, government, research, academia and spatial-user organisations in Australia.

The Action Plan summarises the key initiatives that will transform the current spatial sector in Australia. Including:

- The development of a nationwide framework and roadmap setting out all major public spatial infrastructure developments and supporting analytical capabilities for the next five years, including:
  - National Positioning Infrastructure (NPI)
  - Foundational Spatial Data Framework (FSDF) and Location Intelligence Knowledge Platform (LINK)
  - Nationwide Spatial Data Infrastructure (NSDI)
  - Australian Geoscience Data Cube/ Digital Earth Australia (DEA)
  - Land Registries Reform
  - Visualisation Engines and Globes

- Opening spatial to new sectors through the analysis of their problems, challenges and value chains. The high priority growth sectors are: transport, agriculture, health, defence and security, energy, mining and the built and natural environment.

  The 2026Agenda has identified the need to provide Australia with a fully integrated upstream and downstream national space and spatial capability through the creation of new structures and enhanced national leadership. This is important to ensure continued and sustainable access to national critical infrastructure, including global positioning systems and satellite earth observation data, for which Australia is currently completely dependent on foreign states and corporations.

  In his foreword, the Hon Angus Taylor MP, Australian Government Assistant Minister for Cities and Digital Transformation, challenges the industry "to take this 2026Agenda forward and become a leading example of innovation and leadership for the nation".

  This national whole-of-sector initiative has been coordinated by a Working Group jointly chaired by representatives of the Spatial Business Association of Australia (SIBA) (industry's peak body) and the Australian Collaborative Research Centre for Spatial Information (CRCSI) (a leading national spatial research centre), and including representatives from leading government organisations, including:
  - ANZLIC – the Spatial Information Council
  - Australian Earth Observation Community Coordination Group (AEOCCG)
  - Data61 (CSIRO)
  - Landgate (Government of Western Australia)
  - Geoscience Australia
  - Queensland Department of Natural Resources and Mines
  - Department of the Prime Minister and Cabinet (Australian Government)

The 2026 Agenda Action Plan, along with similar proposals included in the Australian Earth Observation Community Plan issued by the AEOCCG and the White Paper: Advancing Australia in Space issued by the Space Industry Association of Australia's (SIAA), demonstrates the step change that the Australian space and spatial sector is undergoing and that will transform Australia's capabilities and industries in the future.

Join us in this session to hear about Australia's plan for the future of space and spatial, learn about it from a panel of experts directly involved in making this change happen.

Organised by:

Collaborative Research Centre for Spatial Information (CRCSI)

Speakers:

Andrea Boyd
ISS Flight Operations Engineer,
European Space Agency (ESA),
Germany

Phil Delaney
Executive Officer,
2026 Spatial Industry Transformation and Growth Agenda,
Australia

Gary Maguire
Senior Geospatial Intelligences Officer,
Government of South Australia,
Australia

Naomi Mathers
Deputy Chair,
Space Industry Association of Australia (SIAA),
Australia

Stuart Minchin
Chief of the Environmental Geosciences Division,
Geoscience Australia,
Australia

Stuart Phinn
Chair,
Australian Earth Observation Coordinating Group (AEOCCG),
Australia

Fabrice Triffaut
Managing Director of Intelligence Australia,
Airbus Defence and Space Geo Australia,
Australia

Peter Woodgate
Chief Executive Officer,
Australia and New Zealand Cooperative Research Centre for Spatial Information (CRCSI),
Australia

09:30 - 10:30 GNF – Promoting Space Access through Global Partnerships

Location: Adelaide Convention Centre – Hall D

Global partnerships have shaped and molded our presence in space and will continue to be a driving factor as the industry expands from government-sponsored activities to commercial frameworks. This panel aims to explore various business models that respond to the needs of both the public and private sectors. We'll be hearing from both space agencies and private companies who will share their experiences and future plans aimed at fostering international cooperation and progress.

Organised by:
Sierra Nevada Corporation

Speakers:

Jorge Del Rio Vera
Scientific Affairs Officer,
United Nations Office for Outer Space Affairs (UNOOSA),
Austria

Robert Lightfoot
Associate Administrator & Acting-Administrator,
National Aeronautics and Space Administration (NASA),
United States

Minoo Rathnasabapathy
Executive Director,
Space Generation Advisory Council (SGAC),
Austria

Eric Stallmer
President,
Commercial Spaceflight Federation,
United States

Johann-Dietrich Woerner
Director General,
European Space Agency (ESA),
France

MODERATOR
Mark Sirangelo
Corporate Vice President,
Sierra Nevada Corporation,
United States

10:30 - 11:30 GNF – Pushing the Boundaries of Research – International Science 'Made in Germany'

Location: Adelaide Convention Centre – Hall C

Science is a source of innovation that drives the development of new technologies and new discoveries, which helps enable the progression of many future space activities. Conversely, new data and knowledge has been gained with almost every mission in the Solar System and therefore, various scientific fields have been revolutionized by having dedicated space missions such as astrophysics or planetary exploration. Hence, Science has been both a major driver and beneficiary of the space age. Three levels of scientific activities can be distinguished: science from space, science in space and science of space. Germany has always been a contributor to major space missions pushing the boundaries of research, which is highlighted through its globally-leading science activities. However, space science and research works best through international collaboration; hence Germany attaches importance to joint activities with its European and international partners. This is for example reflected by the country's leading contribution to the European involvement in the International Space Station (ISS). This panel will discuss current German contributions to space sciences and present some of its visions for future developments. The panel will be moderated by Dr Gerd Gruppe from DLR.

Organised by:
German Aerospace Center (DLR)

Speakers:

Marc Avila
Executive Director,
Center for Applied Space Technology and Microgravity (ZARM),
Germany

Jens Große
System Engineer MAIUS/ BECCAL Mission,
University of Bremen-Chair Space Technology,
Germany

Matthias Motzigemba
Director, Laser Products,
TESAT Spacecom GmbH,
Germany

Stephan Ulamec
PHILAE Project Manager,
German Aerospace Center (DLR),
Germany

MODERATOR
Gerd Gruppe
Member of the Executive Board,
German Aerospace Center (DLR),
Germany

10:30 - 11:30 GNF – Space Mining – Law, Politics, Perspectives

Location: Adelaide Convention Centre – Hall D

The rapid development of technology opens new horizons for the exploration and use of outer space. What seemed to be futuristic and science fiction only a few years ago has become a tangible option: the exploration and use of resources of celestial bodies. Despite the considerable technical challenges still ahead, this new type of space activity has already attracted the interest of businesses and investors. It is inspiring scientists, engineers, and politicians. On the other hand, legal and political concerns are also emerging. Should it be allowed to exploit resources of celestial bodies? Are space resources limited natural resources, or does the abundance and limitlessness of outer space appear this concept to be inappropriate and inapplicable? Should there by a distinction between more or less limited resources, such as water on the Moon and metals or gases in the Asteroid belt? What is the relationship between the "freedom of use" principle enshrined in the Outer Space Treaty, and the duty to carry out space activities "for the benefit and in the interest of all countries" contained in that same treaty? Is mining of space resources compatible with the prohibition of appropriation of outer space? The Global Networking Forum will address the various challenges related to space resource exploration and use. Experts in different disciplines will contribute with their expertise in the fields of space technology, astronomy, mining, politics, and law. The composition of the panel in terms of interdisciplinary topics and speakers is tailored as to provide an insight into the legal, economic, telecommunication, scientific and regulatory aspect of resource mining. Among the speakers there will be two speakers with legal background, two speakers will be presenting the scientific perspective and one speaker will represent the evolving space mining industry.

Organised by:
International Institute of Space Law (IISL)

Speakers:

Sophia Casanova
Vice-President,
Australian Society of Mining Science,
Australia

Ian Crawford
Scientist & Professor,
Birkbeck College,
United Kingdom

Olavo de Neto Bittencourt
Professor,
Catholic University of Santos,
Brazil

Steven Freeland
Director,
International Institute of Space Law (IISL),
Australia

Yvon Henri
Chief of the Space Service Department,
International Telecommunication Union (ITU),
Switzerland

Sagi Kfir
Co-Founder,
Deep Space Industries,
United States

11:30 - 12:30 GNF – Reusable Launch of Small Satellites Using Scramjets

Location: Adelaide Convention Centre – Hall C

Global Networking Forum
Meet. Share. Connect.

At present, almost all small satellites are launched using a ride-share service that piggy-backs onto a larger customer. The small satellite operator has no control over the launch. A situation that is not very satisfactory for either commercial or scientific activities. There is therefore a significant commercial opportunity for the development of dedicated launchers for small satellites. A substantially reusable system will decrease costs if the technology is right and minimal refurbishment is needed between each flight. In addition, introduction of an air-breathing facet to space launch, and therefore some aspects of aircraft-like operations, will improve performance and remove the rigidity of fully rocket based systems. The SPARTAN reusable satellite system has been developed by the Centre for Hypersonics at The University of Queensland, Australia (UQ) in response to this opportunity. It is a 3-stage rocket-scramjet-rocket system that includes;

1. A reusable fly-back rocket booster that has been developed by UQ and Australian Start-up company Australian Droid & Robot,
2. An airbreathing second stage scramjet called SPARTAN that has been developed by UQ. The scramjet powered vehicle is inherently reusable, and its high Lift-to-Drag ratio enables it to return to base for the next launch,
3. A small third stage expendable rocket.

The keynote lecture will describe the performance and characteristics of SPARTAN, and how it could revolutionise the rapidly changing business of satellite launch.

Organised by:

China Aerospace Science and Industry Corporation (CASIC)

CASIC 中国航天科工集团公司 CHINA AEROSPACE SCIENCE & INDUSTRY CORP.

Speakers:

Michael Smart
Professor, Head, School of Mechanical and Mining Engineering,
The University of Queensland,
Australia

MODERATOR
Riheng Zheng
Chief Engineer,
China Aerospace Science and Industry Corporation (CASIC),
China

11:30 - 12:30 GNF – The Growth Challenges of Space Start-Ups: The Role of Private and Public Investors

Location: Adelaide Convention Centre – Hall D

Global Networking Forum
Meet. Share. Connect.

In recent years the number of start-ups developing new concepts and technologies in space both in upstream and downstream has been increasing. Several countries have announced incubation and acceleration programmes to support these start-ups. Investment in space companies is rising and the first specific instruments to support space ventures have been created. The participation of private investors is gaining relevance and seems to be extremely important for the consolidation of the business models of the space start-ups. The panel, consisting of space start-ups, private investors and agencies' representatives will open a discussion on the growth and consolidation challenges of these start-ups. The open dialogue will answer questions on the main issues that space start-ups identify when dealing with investors, the view of the investors on start-ups that may have a longer ROI timeline and with business models that still need to be proven, as well as the role of the public organisations to enable the growth of start-ups, among others. Join this conversation too!

Organised by:

Space Generation Advisory Council (SGAC)

SPACE GENERATION ADVISORY COUNCIL

Speakers:

Victoria Alonsopérez
Founder,
Chipsafer,
Uruguay

Chris Boshuizen
Entrepreneur in Residence,
Data Collective VC,
Australia

Guillaume Girard
Partner & COO,
Zero 2 Infinity SL,
Germany

Flavia Tata Nardini
CEO,
Fleet,
Australia

MODERATOR
Lluc Diaz
Technology Transfer Office,
European Space Agency (ESA),
The Netherlands

12:45 - 13:45 GNF – The Status of Citizen Science in Global Earth Observation Systems

Location: Adelaide Convention Centre – Hall D

Global Networking Forum
Meet. Share. Connect.

As part of long-term collaboration involving the IAF Young Professionals Programme and the IAF Earth Observation Committee's GEOSS Subcommittee, this GNF is devoted to demonstrating the value of Citizen Science and crowdsourcing in connection with Earth observation-related topics. The focus is on linking ground-based with space-based measurements. The idea of crowdsourcing is not new. The United States National Weather Service established its "Cooperative Observer Program" in 1890 and now has over 8700 volunteers making observations and sharing data. With the advent of smart phones and the Internet, opportunities for collecting and sharing crowd sourced environmental data are expanding exponentially. In this forum, we will explore ideas, and examples of how crowd sourced data can be effectively incorporated into operations and research. Ideas for crowdsourcing will be used to structure a combined YPP Global Forum/Earth Observation Technical Session at IAC Bremen.

Organised by:

IAF Workforce Development Young Professional Programme Committee (WD-YPP)
IAF Subcommittee on the Global Earth Observation System of Systems (GEOSS)

WORKFORCE DEVELOPMENT/ YOUNG PROFESSIONALS PROGRAMME COMMITTEE (WD/YPP)

SUBCOMMITTEE ON THE GLOBAL EARTH OBSERVATION SYSTEM OF SYSTEMS (GEOSS)

Speakers:

James Graf
Deputy Director for Earth Science and Technology,
NASA Jet Propulsion Laboratory,
United States

Isabelle Kingsley
PhD candidate,
University of New South Wales,
Australia

Danielle Wood
Researcher in Engineering and Space Policy,
Johns Hopkins University,
United States

MODERATOR
Jessica Culler
Science Communicator,
WD/YPP Committee,
United States

12:45 - 13:15 Interactive Presentations Award Ceremony

Location: Adelaide Convention Centre - Halls J & K2

Held on the fourth day of IAC, the IP Award Ceremony is the must-attend event of the congress.

Discover the 5 category winners at this prestigious ceremony attended by over 400 presenters, Members of the International Programme Committee and delegates. The prize-giving ceremony will be followed by a cocktail to meet and celebrate the winners. All the interactive presentations will be presented after the ceremony at 13:15.

The interactive presentation session aims at stimulating discussions concerning the contribution. The presenters have been encouraged to emphasize their contributions by means of embedded multimedia content, like for instance, videos, slide shows, animated graphs, 3D rotation, and straight forward demo on specific software and also zooms. The presenters will be available during the whole duration of the session in order to answer questions and have scientific exchanges with the participants of the Congress.

Do not miss out on this great opportunity to meet with the presenters and make new connections.

Please note that this event is open to all IAC participants.

13:15 - 14:45 Interactive Presentations Session & Cocktail Reception

Location: Adelaide Convention Centre - Halls J & K2

No	Symposium	Room
A1.IP	SPACE LIFE SCIENCES SYMPOSIUM	Hall J&K2
A2.IP	MICROGRAVITY SCIENCES AND PROCESSES SYMPOSIUM	Hall J&K2
A3.IP	SPACE EXPLORATION SYMPOSIUM	Hall J&K2
A5.IP	20th IAA SYMPOSIUM ON HUMAN EXPLORATION OF THE SOLAR SYSTEM	Hall J&K2
A6.IP	15th IAA SYMPOSIUM ON SPACE DEBRIS	Hall J&K2
A7.IP	SYMPOSIUM ON FUTURE SPACE ASTRONOMY AND SOLAR-SYSTEM SCIENCE MISSIONS	Hall J&K2
B1.IP	EARTH OBSERVATION SYMPOSIUM	Hall J&K2
B2.IP	SPACE COMMUNICATIONS AND NAVIGATION SYMPOSIUM	Hall J&K2
B3.IP	HUMAN SPACEFLIGHT SYMPOSIUM	Hall J&K2
B6.IP	SPACE OPERATIONS SYMPOSIUM	Hall J&K2
C1.IP	ASTRODYNAMICS SYMPOSIUM	Hall J&K2
C2.IP	MATERIALS AND STRUCTURES SYMPOSIUM	Hall J&K2
C3.IP	SPACE POWER SYMPOSIUM	Hall J&K2
C4.IP	SPACE PROPULSION SYMPOSIUM	Hall J&K2
D1.IP	SPACE SYSTEMS SYMPOSIUM	Hall J&K2
D2.IP	SPACE TRANSPORTATION SOLUTIONS AND INNOVATIONS SYMPOSIUM	Hall J&K2
D3.IP	15th IAA SYMPOSIUM ON BUILDING BLOCKS FOR FUTURE SPACE EXPLORATION AND DEVELOPMENT	Hall J&K2
E1.IP	SPACE EDUCATION AND OUTREACH SYMPOSIUM	Hall J&K2
E3.IP	30th IAA SYMPOSIUM ON SPACE POLICY, REGULATIONS AND ECONOMICS	Hall J&K2
E5.IP	28th IAA SYMPOSIUM ON SPACE AND SOCIETY	Hall J&K2
E6.IP	BUSINESS INNOVATION SYMPOSIUM	Hall J&K2
E7.IP	60th IISL COLLOQUIUM ON THE LAW OF OUTER SPACE	Hall J&K2

13:45 - 14:45 GNF – Understanding the Universe and Improving Life on Earth with Australian Astronomy

Location: Adelaide Convention Centre – Hall D

The proposed event is a panel discussion featuring leading Australian astronomy figures covering Australia's astronomy capability, and its contribution to our understanding of the Universe. Through established optical and radio astronomy facilities, Australia has made a sizeable contribution to global astronomy. Australia's Parkes radio telescope is responsible for discovering half of the more than 2000, known pulsars and is leading the chase in exploring the enigmatic fast radio bursts discovered in 2007. Australia is investing heavily in the next generation of international "billion-dollar class" telescopes. From around 2020, Australia will co-host the Square Kilometer Array (SKA) radio telescope, humanity's best chance so far at seeing the first light from the early Universe, testing Einstein's theory of general relativity and discovering earth-like planets. It is also a major contributor to the Giant Magellan Telescope (GMT) which will explore the formation of astronomical structures and extrasolar planetary systems from a mountain top in Chile. Developing this next generation of telescopes will produce new high-tech instrumentation relevant to the space industry and broader technologies with commercial appeal such as those related to big data management. With their huge collective experience, this panel of leading figures from next-generation Australian astronomy will provide deep insights on the future of ground-based astronomical observation in the southern hemisphere, including:

- major discoveries about space and fundamental physics made possible by the next generation of telescopes;
- the technological and scientific challenges of exploring the far reaches of the galaxy;
- technological linkages between the astronomy and space related industry; and
- the value of telescope development breakthroughs to broader society.

Organised by:

Australian Government's Square Kilometre Array Office

Speakers:

Matthew Bailes
Director,
ARC Centre of Excellence for Gravitational Wave Discovery,
Swinburne University of Technology,
Australia

Alan Duffy
Professor,
University of Swinburne,
Australia

Lisa Kewley
Director,
ASTRO 3D, Research School of Astronomy & Astrophysics,
The Australian National University,
Australia

Sarah Pearce
Deputy Chief,
CSIRO Astronomy and Space Science,
Australia

Steven Tingay
Executive Director,
Curtin Institute of Radio Astronomy,
Australia

Chris Tinney
Head of the Exoplanetary Science Research Group,
University of New South Wales,
Australia

13:45 - 15:15 GNF – ESA's Jam Session & Moon Village Kick-Off

Location: Adelaide Convention Centre – Hall C

By Moon Village we do not mean some development planned around a cluster of houses, some shops, a pub and a community centre. Rather, the term "village", in this context, refers to the following key notions: a village community is what emerges when a group of people join forces in one place without any concrete plans for the future and without first sorting out every detail, instead simply come together with a view to sharing interests and capabilities. It is this principle that forms the basis for the Moon Village concept.

Moon Village is open to any and all interested parties, private or public – villagers of every nationality are more than welcome. There are no stipulations as to the form their participation might take: robotic and astronaut activities are equally sought after. One might envisage not only scientific and technological activities taking place there but also activities based on exploiting resources, and even tourism. It is precisely the open nature of the concept which would allow many nationalities to go to the Moon and take part while leaving behind them on Earth any differences of opinion they may have. But you would no longer have to worry about the need for a common docking port.

If you are interested in being part of the Moon Village community, please send us an e-mail (MoonVillage@esa.int) explaining your ideas and possible contributions you wish or plan towards building the Moon Village. You'll receive a "Declaration of Interest" to sign, which you can send us back beforehand or hand it over at the end our session in Adelaide. The event will be closed with a glass of Champagne.

Organised by:
European Space Agency (ESA)

Speaker:

Johann-Dietrich Woerner
Director General,
European Space Agency (ESA),
France

14:45 - 15:45 GNF – Earth Observation – Trends and Paradigm Shifts

Location: Adelaide Convention Centre – Hall D

Key trends currently impacting Earth Observation include: exponential growth in availability of EO data; the impact of big data and cloud processing; the entrance of Google and Amazon into the field; the multiplication of national initiatives in EO, the emergence of venture-capital funded micro-satellite EO constellations in the US; and the expanding use of drones for civil and security applications. In this rapidly changing context EO research missions are driven by a stable, unifying paradigm, that of Earth System Science. From a wider perspective, systemic changes in how science is organised (Open Science), how business is conducted (digital economy), and how society is responding to global challenges (Climate, Water, Food, Security) are re-defining the boundary conditions for EO and ESA's programmes. With more than 89,000 registered Sentinel data users worldwide, 12 Petabytes of data downloaded by users from ESA data access infrastructure, Copernicus is de-facto a game changer in Earth Observation. Data availability at this scale, frequency, and quality, with a free and open data policy, constitutes a fundamental paradigm change in EO, for Europe and globally. Combined with observations from national, commercial, meteorological and research missions, and data from international partners, it is driving a quasi-exponential growth in availability of EO data, which opens new avenues for research in Earth System Science, enables innovative applications, and creates new prospects for commercial services. The Session will present the key strategic issues faced by Earth Observation in the current international context and will encourage an open discussion among participants on the Trends and paradigms and the way for key actors such as Space Agencies and industry and Academia to face these new challenging times

Organised by:
European Space Agency (ESA)

Speakers:

Josef Aschbacher
Director of Earth Observation Programmes,
European Space Agency (ESA),
Italy

Brendan Bouffler
Manager of Amazon Web Services Research Cloud Program,
Amazon Web Services,
United Kingdom

Peter Platzer
Chief Executive Officer,
Spire Global Inc.,
United States

Robbie Schingler
Co-Founder and Chief Strategy Officer,
Planet,
United States

Nicola Zaccheo
Chief Executive Officer,
SITAEL S.p.A.,
Italy

Start time: 14:45 Technical Sessions

No	Description	Room
A2.5	Facilities and Operations of Microgravity Experiments	Hall B
A3.5	Solar System Exploration	Hall N
A6.6	Space Debris Removal Concepts	Hall E1
B1.5	Earth Observation Applications and Economic Benefits	Hall E2
B2.8-GTS.3	Space Communications and Navigation Global Technical Session	Riverbank 2
B3.6-A5.3	Human and Robotic Partnerships in Exploration - Joint session of the Human Spaceflight and Exploration Symposia	City Room 3
B4.6B	Generic Technologies for Nano/Pico Platforms	Panorama Room 1
B5.2	Integrated Applications End-to-End Solutions	Meeting Room L3
B6.2	New Space Operations Concepts and Advanced Systems	City Room 4
C1.7	Mission Design, Operations & Optimization (2)	Hall A
C2.7	Space Vehicles – Mechanical/Thermal/Fluidic Systems	Panorama Room 2
C3.4	Small and Very Small Advanced Space Power Systems	City Room 2
C4.6	New Missions Enabled by New Propulsion Technology and Systems	Hall E3
D2.6	Future Space Transportation Systems Verification and In-Flight Experimentation	Hall O
D3.3	Novel Concepts and Technologies to Enable Future Building Blocks in Space Exploration and Development	Riverbank 4
D4.3	Conceptualizing Space Elevators and Tethered Satellites	Riverbank 3
D5.3	Prediction, Measurement and Effects of space environment on space missions	Riverbank 5
E1.9	Space Culture – Public Engagement in Space through Culture	Panorama Room 3
E4.2	Scientific & technical histories	Meeting Room L2
E5.5	Space Societies, Professional Associations and Museums	City Room 1

15:15 - 15:45 GNF – Orbital ATK and the Future of Space Logistics

Location: Adelaide Convention Centre – Hall C

In this session, Former NASA astronaut and Orbital ATK Space Systems Group President Frank Culbertson will discuss how space logistics technologies are expanding the horizons of human discovery and exploration. He will share how Orbital ATK is pioneering critical space logistics innovations that support human spaceflight, satellite servicing, and cislunar exploration.

Organised by:

Orbital ATK Space Systems Group

Speaker:

Frank L. Culbertson
President & General Manager,
Orbital ATK Space Systems Group,
United States

15:45 - 16:45 GNF – The Value of Being Part of Space Exploration

Location: Adelaide Convention Centre – Hall D

With twenty years of achievements in space behind it, the United Arab Emirates (UAE) continues to invest in human capital, develop its satellite operators companies, research centers, and earth observations capabilities, as well as related infrastructures and facilities in order to further develop its space sector. In 2014, the UAE joined the space exploration community with an ambitious Emirati Mars Mission (EMM) program and its "Hope" probe" a Spacecraft destined to orbit Mars in 2021 to coincide with the 50th anniversary of the setting up of the UAE as a nation. In 2017, The UAE announced the UAE Astronaut program and the Mars2117 project to build the first city on Mars by 2117.

The UAE Space Agency (UAE SA) and Mohammed Bin Rashid Space Centre (MBRSC), are preparing short and long terms plans for the implementation of the Mars2117 project. In the short term the UAE will develop an initial detailed plan covering the activities that should take place over the next five years, dealing with all technological, logistical and technical aspects of the project to pave the way for developing a comprehensive road map with a clear path towards achieve the ultimate goals of Mars2117.

The first steps in this plan has already started by mobilizing the interest within the UAE in planetary explorations, space science and technology through EMM with its unique and noble objectives to gain a better understanding of the Martian atmosphere and the interaction between its various layers, with the aim to achieve an unprecedented global coverage both special and temporal. The project has already succeeded in utilizing and building on the existing space sector capabilities which rely extensively on UAE nationals, exemplified by MBRSC whose are the prime contractor to the UAE SA for EMM.

The UAE recognizes that international collaboration is essential in such colossal programs, not just in assuring higher chances for their success but to use it as an opportunity to consolidate the cooperative spirits between nations across the world for achieving the best possible outcome for humanity as a whole and emphasizing the peaceful uses of outer-space for the benefit of all Humanity.

The panel will give an overview and outline of the strategy and plans to that will ensure the success of such ambitious activities, and how the momentum can be maintained with such unprecedented long-term vision that will cross over generations.

Organised by:

The United Arab Emirates Space Agency (UAESA)
Mohammed Bin Rashid Space Centre (MBRSC)

Speakers:

Mohammed Al Ahbabi
Director General,
The United Arab Emirates Space Agency,
United Arab Emirates

Saeed Al Gergawi
Mars 2117 Program Executive Manager,
Mohammed Bin Rashid Space Centre,
United Arab Emirates

Salem Humaid Al Marri
Assistance DG for Science & Technology Sector,
Mohammed Bin Rashid Space Centre,
United Arab Emirates

Omran Anwar Sharaf
Senior Director,
Hope Probe Department,
Mohammed Bin Rashid Space Centre,
United Arab Emirates

15:45 - 16:45 GNF – Space and Sustainable Development Goals

Location: Adelaide Convention Centre – Hall C

On September 25th 2015, countries adopted a set of 17 goals – the Sustainable Development Goals (SDGs) – to end poverty, protect the planet, and ensure prosperity for all as part of a new sustainable development agenda. Space science and technology can play a vital and innovative role in achieving the SDGs. Meet the prominent speakers from major space agencies and international organizations to discuss with the audience the role of space in achieving the SDGs from a broad perspective in areas such as climate change, water, forest, health, economy, innovation, education and women, through space programmes including Earth observations, ISS, space exploration and science.

Organised by:

Japan Aerospace Exploration Agency (JAXA)
Group on Earth Observations (GEO)
United Nations Office for Outer Space Affairs (UNOOSA)
IAF Earth Observation Committee & GEOSS Subcommittee
IAF Committee for Liaison with International Organisations and Developing Nations (CLIODN)

Speakers:

Gale Allen
Deputy Chief Scientist,
National Aeronautics and Space Administration (NASA),
United States

Aditya Agrawal
Director for Data Ecosystems Development,
Global Partnership for Sustainable Development Data (GPSDD),
United States

Josef Aschbacher
Director of Earth Observation,
European Space Agency (ESA),
Italy

Jorge Del Rio Vera
Scientific Affairs Officer,
United Nations Office for Outer Space Affairs,
Austria

Seishiro Kibe
Advisor,
Japan Aerospace Exploration Agency (JAXA),
Japan

Stuart Minchin
Chief of the Environmental Geosciences Division,
Geoscience Australia,
Australia

Chiaki Mukai
Senior Advisor,
Japan Aerospace Exploration Agency (JAXA),
Japan

16:45 - 17:45 GNF – Space Optics: Next Steps of Optical Communications Enhancing Our Interconnected World

Location: Adelaide Convention Centre – Hall D

As the space communication technologies advance, optical communications are considered to be at the forefront of paving the way of a space data highway. With space qualified lasers becoming available on the market, quantum cryptography is likely to be another major game changer, as it can provide unbreakable security for data transmission using the laws of quantum physics e.g. by entangled photon sources. Industry 4.0, autonomous driving, connectivity in flight and numerous other – not yet invented - applications and services will need fast, reliable and secure global communication and data access means – optical fibers in space will help to unlock mankind's imagination by boosting communications for an interconnected world. The global interest in optical high-speed space communications has reached such a level that it is important to inform the IAF GNF community about this innovative technology and its potential applications and future evolutions.

Organised by:
IAF Space Communications and Navigation Committee (SCAN)

Speakers:

Gerd Rudolf Kraft
Head of the Department of Commercialisation,
German Aerospace Centre (DLR),
Germany

Matthias Motzigemba
Director Laser Products,
TESAT Spacecom GmbH,
Germany

Phil Stimson
Research Leader,
Australia Assured Communications National Security Group,
Australia

Steve Townes
Chief Technologiest of the Interplanetary Network Directorate,
National Aeronautics and Space Administration (NASA),
United States

Shiro Yamakawa
Optical Engineer,
Japan Aerospace Exploration Agency (JAXA),
Japan

MODERATOR
Norbert Frischauf
Scientist,
SCaN Member,
Austria

CO-MODERATOR
Stephanie Wan
SCaN Member,
United States

16:45 - 17:45 GNF – New Generation Recoverable Satellite — An Advanced Space Platform for Space Environment Utilization

Location: Adelaide Convention Centre – Hall C

Recoverable Satellite is the best way for space environment utilization on account of its high level of microgravity, recoverability, remote support for on orbit experiment. CAST has been actively developing the New Generation Recoverable Satellite as the advanced platform for space environment utilization. The new platform is highly improved in microgravity, flying duration, power supplying, payload interface, ect. China's New Generation Recoverable Satellite as well as the experiments we carried out on recoverable satellite will be introduced in the forum. Also, some relative topics will be discussed in the forum.

Organised by:
China Academy of Space Technology (CAST)

Speakers:

Qi Kang
Professor,
Institute of Spacecraft System Engineering (CAST),
China

Xin Liu
Director Designer,
Institute of Spacecraft System Engineering (CAST),
China

MODERATOR
Li Ming
Vice President,
China Academy of Space Technology (CAST),
China

17:45 - 18:45 Highlight Lecture 2: The Great Barrier Reef: Assessing its Health from Space

Location: Adelaide Convention Centre – Hall C

Stretching for over 2300 km, Australia's Great Barrier Reef (GBR) is one of the great natural wonders of the world. It is home to a vast number of marine species and provides recreational opportunities for visitors from all over the globe. The Reef hosts more than 600 different types of soft and hard coral, and fish and mollusk species number in the thousands. This vast number of ecological communities make it one of the most complex natural ecosystems in the world.

This gem of the world is under severe attack. Coral bleaching is devastating the very fabric of the reef with ominous consequences for the species that inhabit the reef. It only takes an increase of one degree Celsius in the local water for approximately one month to generate a bleaching event. Presently, the GBR is undergoing another severe bleaching event.

Heat from the atmosphere is finding its way into the ocean contributing to ocean warming. Satellite observations are helping to monitor the health of the GBR indirectly by measuring various ocean parameters and directly by studying the reef itself. This highlight lecture will discuss: 1) the history of the reef; 2) the health of the reef; 3) the causes of the attack; 4) how we can measure and track the conditions from space; and 5) what the prognosis is for the reef and the species that reside there..

Speaker:

Paul Hardisty
Chief Executive Officer,
Australian Institute of Marine Science,
Australia

MODERATOR
Chiaki Mukai
Senior Advisor,
JAXA,
Vice President
Tokyo University of Science,
Japan

19:00 - 22:30 IISL Dinner (upon invitation only)

Location: State Library of South Australia

Friday, 29 September

07:30 - 08:30 LBN 1: We Are Explorers: Late-Breaking News About Mars Base Camp and the Deep Space Gateway

Location: Adelaide Convention Centre – Hall C & D

We Are Explorers – and the Time is Now

Never before in history have we had the technology and global interest to move human exploration out to the Moon and Mars. Lockheed Martin's blueprint for exploration includes Mars Base Camp, a detailed orbital mission reference architecture for the start of Martian system exploration. By relying on existing technologies and available systems, this mission could be fielded as early as the late 2020's. On Friday, Lockheed Martin will show how the recently announced Deep Space Gateway will prove out the technologies needed for the build-up of the Mars Base Camp Deep Space Transport elements, emphasizing the science value, international partnership opportunities, and commercialization paradigms enabled by NASA's exploration vision. Lockheed Martin will also unveil their highly-anticipated lander – a reusable, single stage aero-spacecraft based on already-flown vehicles which can revolutionize our thinking about Mars surface access, while enabling a water-based economy in cis-lunar space and enabling a commercial lunar surface infrastructure within the next decade

Speakers:

Robert Chambers
Program Strategy Lead for Orion Production,
Lockheed Martin,
United States

Tim Cichan
Space Exploration Architect,
Lockheed Martin,
United States

Danielle Richey
Advanced Programs Exploration Architect,
Lockheed Martin,
United States

08:30 - 09:00 LBN 2: Late Breaking News: When Innovation Becomes Sustainable – Sky and Space Global Conducted First Ever Voice Call Using its Nano Satellites

Location: Adelaide Convention Centre – Hall C & D

First ever voice call has been successfully conducted using nano-satellite technology, a standard smartphone and SAS proprietary hardware and application.

Performing the first ever phone call facilitated by nano-satellites marks a major milestone for the telecoms and satellite communications industries.

This technology will enable the delivery of low cost satellite connectivity in remote locations and emerging markets that have no access to a communications network infrastructure.

Until recently nano-satellites have been predominantly used for earth observation and imagery but with advancements in miniature space technology their capabilities have become increasingly sophisticated in recent years. Sky and Space Global is the first company to successfully use narrowband connectivity provided by nano-satellites to deliver a voice call.

What is unique about the Sky and Space Global service offering is that it delivers phone call, text and data services at a fraction of the cost of traditional satellite communications providers.

Along with enabling a voice call, the 3 Diamonds Nano-satellites, which Sky and Space Global launched into space in late June 2017, have also demonstrated their capability to facilitate the exchange of text messages, voice recordings and images between different users. As part of this process, SAS has successfully tested the "store and forward" capability of its technology, which includes sending a message to the satellite, keeping it in satellite memory and downloading it to a receiver.

The company has also demonstrated that its services can provide indoor connectivity, by enabling users to install a Radio Frequency (RF) section on a roof top or another outdoor area and connecting it to an indoor Wi-Fi hot-spot to add multiple users to the network.

Speaker:

Meir Moalem
CEO & Managing Director,
Sky and Space Global,
United Kingdom

09:30 - 11:00 GNF – Astronauts Event

Location: Adelaide Convention Centre – Riverbank 7 & 8

Global Networking Forum
Meet. Share. Connect.

Astronauts from all over the world will be sharing their experiences in space and answering questions from the audience.

This event will be open to the general public.

Frank L. Culbertson
President & General Manager,
Orbital ATK Space Systems Group,
United States

Sergey Krikalev
Executive Director for Manned Space Flight Programs,
ROSCOSMOS,
Russian Federation

Michael Lopez-Alegria
Principal,
MLA Space, LLC,
United States

Sandy Magnus
Executive Director,
American Institute of Aeronautics and Astronautics (AIAA),
United States

Pamela A. Melroy (Pam)
Senior Advisor, Space Strategy,
Nova System,
United States

Chiaki Mukai
Senior Advisor,
Japan Aerospace Exploration Agency (JAXA),
Japan

Dumitru Dorin Prunariu
First Romanian Cosmonaut and Founder,
Asteroid Foundation,
Romania

MODERATOR
Alice Gorman
Senior Lecturer at the College of the Arts, Humanities and Social Sciences,
Flinders University,
Australia

Start time: 09:00 Technical Sessions

No	Description	Room
A1.7	Life Support, habitats and EVA Systems	City Room 2
A2.6	Microgravity Sciences Onboard the International Space Station and Beyond - Part 1	Meeting Room L1 (a&b)
A3.2C	Moon Exploration – Part 3	Hall N
A5.4-D2.8	Joint-session: Space Transportation Solutions for Deep Space Missions	Hall O
A6.7	Operations in Space Debris Environment, Situational Awareness	Hall E1

B1.4	Earth Observation Data Management Systems	Hall E2
B3.7	Advanced Systems, Technologies, and Innovations for Human Spaceflight	City Room 3
B4.8	Small Spacecraft for Deep-Space Exploration	Panorama Room 1
B5.1	Tools and Technology in Support of Integrated Applications	Meeting Room L3
B6.3	Mission Operations, Validation, Simulation and Training	City Room 1
C1.8	Orbital Dynamics (1)	Riverbank 6 (a&b)
C2.8	Specialised Technologies, Including Nanotechnology	Panorama Room 2
C4.7-C3.5	Joint Session on Advanced and Nuclear Power and Propulsion Systems	Hall E3
D1.5	Lessons Learned in Space Systems: Achievements, Challenges, Best Practices, Standards.	Riverbank 3
D2.8-A5.4	Space Transportation Solutions for Deep Space Missions	Hall O
D4.5	Space Mineral Resources, Asteroid Mining and Lunar/Mars insitu	Riverbank 4
D5.4	Cyber-security threats to space missions and countermeasures to address them	Riverbank 5
E1.1	Ignition - Primary Space Education	Panorama Room 3
E2.4	Educational Pico and Nano Satellites	Riverbank 2
E3.6	Strategic Risk Management for successful space programmes	City Room 4
E7.5	Current Developments in Space Law	Meeting Room L2

Start time: 11:00 Technical Sessions

No	Description	Room
A1.8	Biology in Space	City Room 2
A2.7	Microgravity Sciences Onboard the ISS and Beyond	Meeting Room L1 (a&b)
A3.4B	Small Bodies Missions and Technologies (Part 2)	Hall N
A6.10-B4.10	Joint Small Satellite/Space Debris Session to promote the long-term sustainability of space	Hall E2
A6.8	Policy, Legal, Institutional and Economic Aspects of Space Debris Detection, Mitigation and Removal (joint session with Space Security Committee)	Hall E1
A7.3	Technology Needs for Future Missions, Systems, and Instruments	Riverbank 5
B2.7	Advanced Technologies for Space Communications and Navigation	Meeting Room L3
B4.7	Highly Integrated Distributed Systems	Panorama Room 1
C1.9	Orbital Dynamics (2)	Riverbank 6 (a&b)
C2.9	Advancements in Materials Applications and Rapid Prototyping	Panorama Room 2
C4.10	Propulsion Technology (3)	City Room 4
C4.8-B4.5A	Joint Session between IAA and IAF for Small Satellite Propulsion Systems	Hall E3
D1.6	Cooperative and Robotic Space Systems	Riverbank 3
D2.9-D6.2	Joint-Session Creating Safe Transportation Systems for Sustainable Commercial Human Spaceflight	Hall O
D4.4	Strategies for Rapid Implementation of Interstellar Missions: Precursors and Beyond	Riverbank 4
E1.2	Lift Off - Secondary Space Education	Panorama Room 3
E4.3B	“Can you believe they put a man on the Moon?”	Meeting Room L2
E7.7-B3.8	Joint IAF/IISL Session on Legal Framework for Collaborative Space Activities	City Room 3
E8.1	Multilingual Astronautical Terminology	City Room 1

11:00 - 12:00 GNF – Global Real Time Data Exchange Satellite Constellation Project

Location: Adelaide Convention Centre – Hall D

What we are going to present to the world in this GNF, it’s our latest progress of the first global narrow-band data exchange satellite constellation developed by affiliated companies of China Aerospace Science and Technology Corporation (CASC). Now most of planet on earth is still lack of methods of communication, when you on the sea, in the air or rural area, it is very difficult for you or your assets to establish connection with outside world. Combines with inter-satellite link technology, our two-way real-time communication system will establish an interpersonal and M2M communication solution for all the users in the world. Our slogan is we are always online.

Data Exchange satellite (De-Sat) constellation consists of global network of 60 LEO small satellites and accompanying ground infrastructures. De-Sat system enable industry and public users to track, monitor, control and communicate with fix and mobile assets located anywhere on earth in real-time. Combine with inter-satellite link technology, we believe our system can provide the most cost-effective communication services with the largest coverage in the world. De-Sat devote itself to establish a global communication network to promote international communication interconnection and information sharing, and to assist mankind to build an information silk road. As a multi-function and wide-ranging constellation system, De-Sat Integrates data acquisition, data exchange, mobile broadcast, ADS-B, AIS and navigation augmentation functions, we dedicate ourselves to improve industry assets visibility and productivity, and connect people on this planet with one constellation in a very low cost.

Data acquisition and data exchange system can serve government agencies, army (Ground and Air force), and Industry enterprises, in the area of Water Conservancy, Earthquake, Meteorology, Environmental Protection, Transportation, Marine, and Forestry etc.

We can provide services as follow:

a. Global asset state supervision and control;
b. Personnel and Goods positioning;
c. Communication Service (Real-Time);
d. Emergency Rescue.

AIS Payload, Meet the shipping global AIS communication demand, ensure the safety of a variety of navigation application, to protect the Marine environment and efficient freight without any blind area around global. By ship AIS may also complete the sea rescue and maritime traffic management. To capture AIS signal in real-time and perform data demodulation, using international standard system which accords with ITU-R M.1371-5.

- What is ADS-B payload, ADS-B provides specialized air traffic management and air traffic control services.
- Automatic – It's always ON and requires no operator intervention
- Dependent – It depends on an accurate GNSS signal for position data
- Surveillance – It provides "Radar-like" surveillance services, much like RADAR
- Broadcast – It continuously broadcasts aircraft position and other data to any aircraft, or ground station equipped to receive ADS-B
- Navigation Augmentation, which can achieve accurate positioning of sub-meter level, so it will be widely used in agriculture, city mapping and accurate navigation.

First, we are going to launch 12 satellites of this constellation in 2019, and by the year 2021, after constellation network complete, there will be a global coverage real-time communication system serve the human race, every single person can use this technology everywhere on this planet with

Organised by:
China Great Wall Corporation

Speaker:

MU Jia
Deputy General Manager,
China Great Wall Industry Corporation,
China

14:00 - 15:00 GNF – Elon Musk Presentation

Location: Adelaide Convention Centre – Halls A, B, C & D

Following up on his presentation at the last year's IAC in Guadalajara, Elon Musk, CEO and Founder of SpaceX, will give an update on his plans for "Making Humans a Multiplanetary Species".

Organised by:
SpaceX

Speaker:

Elon Musk
CEO and Founder,
SpaceX,
United States

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

16:00 - 17:00 Closing Ceremony

Location: Adelaide Convention Centre – Halls A, B, C & D

The Closing Ceremony provides a formal end to the activities of the IAC. There will be a video summary of the week's highlights, presentation of awards, and at the end of the ceremony, the Congress flag will be handed over to the next host country – Germany.

The video of the winner for the #MYIAC2017 competition will be shown during the closing ceremony.

18:30 - 22:00 Gala Dinner

Location: Adelaide Oval – War Memorial Drive, William Magarey Room (enter via South gate)

The Congress Dinner will be a night of sophistication and elegance. Held in the stunning William Magarey Room at the Adelaide Oval, guests will enjoy the carefully selected food and wine options whilst celebrating the successes of the 2017 Congress. This will be the last social event of the Congress and a night not to be missed.

The ticket will cost $140 per person and can be bought at the registration desk.

4.3 Meetings Schedule

Time	Event	Room
Friday, 22 September 2017		
08:00-18:00	Space Generation Congress	University of Adelaide
09:00-16:00	Educators Professional Development Workshop	Hetzel Lecture Theatre of the State Library of South Australia
Saturday, 23 September 2017		
08:30-17:40	Space Generation Congress	University of Adelaide
09:00-16:00	Educators Professional Development Workshop	Hetzel Lecture Theatre of the State Library of South Australia
09:30-16:30	International Project/Programme Management Committee	Skyway Room 1
10:00-12:00	IAF/IAA/IISL Advisory Committee on History Activities Meeting	Riverbank Room 8 b
10:00-12:30	IAF Finance Committee Meeting	Riverbank Room 1
10:00-13:00	IAA Space Debris Committee Meeting	Panorama Room 1
12:30-13:00	IAA Commission Plenary Session	Panorama Room 2
13:00-15:00	IAF Technical Activities Committee Meeting	Riverbank Room 6 a
13:00-15:00	IAF Next Generation Coordination Committee Meeting	Skyway Room 2
13:00-16:00	IAA Commission 1 Meeting Space Physical Sciences	Panorama Room 1
13:00-16:00	IAA Commission 2 Meeting Space Life Sciences	Panorama Room 3
13:00-16:00	IAA Commission 3 Meeting Space Technology & System Development	Panorama Room2
13:00-16:00	IAA Commission 4 Meeting Space System Operation & Utilization	City Room 1
13:00-16:00	IAA Commission 5 Meeting Space Policy, Law & Economy	City Room 2
13:00-16:00	IAA Commission 6 Meeting Space & Society, Culture & Education	City Room 3
15:00-16:30	IPC Steering Group Meeting Part 1	Riverbank Room 6 a
16:00-18:00	IAA Scientific Activities Committee Meeting	City Room 3
17:00-18:30	IPC General Meeting	Hall M
Sunday, 24 September 2017		
08:00-18:00	IPMC YP Workshop	Meeting Room L 2&3
08:15-13:30	Cross-Cultural Communications and Presentation Workshop	City Room 3&4
09:00-11:45	IAA Academy Day	Panorama Room 1&2
09:00-12:00	IAF Space Education and Outreach Committee Meeting	Meeting Room L 1 b
09:00-13:00	IAC Hosts Summit	Riverbank Room 3
09:30-17:00	International Meeting for Members of Parliaments	Hall M
10:00-16:00	SGAC Workshop on Communicating Space Activities Using Visual Stories	Riverbank Room 1
10:00-17:30	SGAC Workshop on Human Space Settlement	Meeting Room L 1 a
11:00-12:00	IAC 2017 Kick-off Press Conference	Panorama Suite
12:00-13:00	Press briefing	Panorama Suite
12:00-14:00	IAF Workforce Development / YPP Meeting	Riverbank Room 6 b
13:00-14:00	IAA Regular Meeting	Panorama Room 1&2
13:00-15:00	IAF Space Life Sciences Committee Meeting	Riverbank Room 8 a
13:00-15:00	IAF Earth Observation Committee Meeting	Meeting Room L 1 b

Time	Event	Room
14:00-17:00	IAF Astrodynamics Committee Meeting	Skyway Room 1
14:00-17:00	IAF Bureau Meeting Session 1	Panorama Suite
14:00-18:00	IAF Materials and Structures Committee Meeting	Riverbank Room 6 b
14:15-16:15	Next Generation Plenary Preparatory Meeting	Skyway Room 2
14:15-17:30	IAA Academy Day	Panorama Room 1&2
15:00-17:00	IAF Space Propulsion Committee Meeting	Riverbank Room 8 a
15:00-17:00	IAF GEOSS Subcommittee Meeting	Meeting Room L 1 b
15:00-17:00	IAA Board of Trustees	Panorama Room 3
16:00-18:00	IAF Commercial Spaceflight Safety Committee Meeting	Riverbank Room 8 b
16:00-19:00	IAF Space Transportation Committee Meeting	Riverbank Room 6 a
16:30-18:30	SGAC Advisory Board Meeting	Riverbank Room 1
18:00-19:00	IAF ESL/YSL Meeting	Riverbank Room 6 b
19:00-19:30	YP Networking Event	Hall M
Monday, 25 September 2017		
07:00-09:00	IAF Space Exploration Committee Meeting	Riverbank Room 6 a
08:00-09:00	Heads of Agencies Plenary Preparatory Meeting	Skyway Room 1
09:00-10:30	Opening Ceremony	Hall A,B,C&D
10:45-11:45	Exhibition Opening and VIP Tour	Hall F-K
11:00-13:30	IAF Space Systems Committee Meeting	Skyway Room 1
12:15-14:15	International Space Education Board Meeting	Skyway Room 2
13:00-18:00	IISL Board of Directors	Riverbank Room 1
13:30-15:00	PE 1 - Heads of Agencies	Hall C&D
15:00-15:15	GNF Opening	Hall C&D
15:00-18:00	IAF General Assembly	Hall M
15:15-16:00	Heads of Agencies Press Conference	Panorama Suite
15:15-16:15	GNF: Commercial Nano-Satellites Constellation – The SAS Story	Hall C&D
16:00-18:00	IAF Space Economy Committee Meeting	Skyway Room 3
16:45-17:30	GNF: Strategic Partnership of Energia and Boeing in Space	Hall C&D
17:30-18:00	GNF: EU Ambitions in Space	Hall C&D
17:30-18:15	International Space Education Board 2017 Meeting	Riverbank Room 8 b
17:45-18:45	NASA Meeting with US Students & YPs	Riverbank Room 8 a
18:00-18:15	GNF: What Future Role for Europe in Exploration?	Hall C&D
18:15-19:30	PE 2 - Host Plenary - The Space Industry's Economic and Social Impact	Hall C&D
Tuesday, 26 September 2017		
07:30-09:30	Australian National University Meeting	Riverbank Room 8 a
08:00-12:00	International Space Educator Board Meeting	Riverbank Room 6 a
08:00-18:00	IAF Nomination Committee	Skyway Room 5
08:30-09:30	PE 3 - Space Traffic Management – Global Challenges to Protect the Strategic Domain of Space	Hall C
09:00-10:00	IAF Congress and Symposia Advisory Committee	Skyway Room 2
09:30-10:00	GNF: Deep Dive: Space Communications and Surveillance for National Security	Hall D
09:45-12:45	IAA Seti Permanent Committee Meeting	Riverbank Room 8 b

Time	Event	Room
10:00-10:30	GNF: Deep Dive: Reusability of Launch Vehicles & Small Sats	Hall D
10:00-12:00	IAF Regional Group of Latin America and the Caribbean (GRULAC) Meeting	Riverbank Room 1
10:30-11:00	GNF: Deep Dive: Space Situational Awareness	Hall D
11:00-11:30	GNF: Deep Dive: Impact of Constellations	Hall D
11:00-12:30	Next Generation Plenary Rehearsal	Hall C
11:30-12:00	GNF: Deep Dive: Near-Earth Objects	Hall D
12:00-12:30	GNF: Deep Dive: Clean Space	Hall D
12:00-13:00	IAF Satellite Commercial Applications Committee Meeting	Riverbank Room 1
12:00-14:00	IAF Space Operations Committee Meeting	Riverbank Room 8 a
12:45-14:00	IAA Small Satellite Mission Program Committee Meeting	Riverbank Room 8 b
12:45-14:45	IAA Study Group 3.26 Space Mineral Resources	City Room 4
13:00-14:30	IAA Acta Astronautica Editoral Board Meeting	Riverbank Room 1
13:00-18:00	IISL Moot Court Competition (Semi Finals)	Meeting Room L 1 a & L 1 b
13:30-14:30	PE 4 - 50 Ways to Leave Your Earth	Hall C
14:00-16:00	IAF Space Security Committee Meeting	Riverbank Room 8 a
14:00-17:00	International Space Education Board Heads of Education Meeting	Riverbank Room 8 b
14:30-15:30	GNF: Disruption of New Starts on the Asia Pacific Space Turf	Hall D
14:30-16:30	IAF Knowledge Management Technical Committee Meeting	Riverbank Room 1
15:00-17:00	ISEF2 Planning Meeting	Riverbank Room 6 a&b
15:30-16:30	GNF: Opening the Market Aperture for New Start Opportunities	Hall D
15:45-16:45	HLL1 Rehearsal	Hall C
16:30-17:30	IAF Nomination Committee - Open Consultation Session for Members	Skyway Room 5
16:30-17:30	GNF: Space 4.0 – Building a Space Entrepreneurship Ecosystems	Hall D
16:30-18:30	IAF Integrated Applications Technical Committee Meeting	Riverbank Room 1
17:00-18:00	IAF Knowledge Management Technical Committee Work Group Meeting	Riverbank Room 8 b
17:45-18:45	HLL 1 - Flight by Light with Bill Nye LightSail and Innovations in Solar Sailing	Hall C
18:45-19:45	HLL 1 Press Conference	Panorama Suite
19:00-20:00	YP Networking Event	Hall M
Wednesday, 27 September 2017		
08:00-18:00	IAF Nomination Committee	Skyway Room 5
08:30-09:30	PE 5 - Next Generation Plenary - Innovative Methods for Assured and Secure Access to Space	Hall C
09:00-18:00	Inter Agencies Space Debris Coordination Committee Meeting	Meeting Room L 1 a
09:15-12:15	World Space Week Assosiation Board of Directors Meeting	Riverbank Room 8 b
09:30-10:30	GNF: Space Technology Education and Training Exchange Platform Open to the World	Hall C
09:30-11:30	GNF: The Evolving Relation Between Public Procurement and Industry on Space and Defence Programmes with Strategic Perspectives Towards Respecting Costs and Schedules on Large Contracts	Hall D
10:00-11:30	IAF Industry Relations Committee Meeting	Riverbank Room 8 a

Time	Event	Room
10:00-12:00	IAF Space Universities Administrativ Committee Meeting	Meeting Room L 1 b
10:30-11:00	GNF: Spaceport Norway 2018: Towards a Space Society	Hall C
11:00-11:30	GNF: SpaceTech - Space Systems and Business Engineering	Hall C
11:30-12:00	GNF: 0G Summit – Space Diplomacy in the Age of NewSpace	Hall C
11:30-12:30	GNF: The Role of Space Agencies in Support of Emerging Countries	Hall D
12:00-12:30	GNF: Shaping the Future with Ariane 6	Hall C
12:45-14:45	IISL General Assembly	Meeting Room L 2
13:00-15:00	PE 8 Rehearsal	Skyway Room 2
13:00-18:00	IISL Board Meeting	Meeting Room L 1 b
13:30-14:30	PE 6 - MoonMars Villages for Science, Technology, Innovation, Cooperation, Security and Inspiration	Hall C
14:00-17:00	Internatinal Space Education Board Heads of Education Meeting	Riverbank Room 8 b
14:30-15:30	GNF: Reducing Diversity Gaps – Inducing Space Environment Dynamic with Benefits for a Country´s Economy, Education, Strategy and Sovereignty	Hall C
14:30-16:00	GNF: A Low Earth Orbit Space Station - the Way Forward	Hall D
14:45-15:45	PE 6 Press Conference	Panorama Suite
14:45-18:00	IAF Human Spaceflight Committee Meeting	Riverbank Room 8 a
15:00-17:00	IAF Enterprise Risk Management Committee Meeting	Skyway Room 2
15:30-16:00	GNF: New Trends of Commercial Developments in Space Domain	Hall C
15:30-17:00	IAF Honors and Awards Committee Meeting	Hall M
16:00-17:00	GNF: SpaceGen Entrepreneurs	Hall C
16:00-17:30	GNF: Deep Space Exploration Post 2024 Scenarios	Hall D
17:00-17:45	GNF: The 50th Anniversary of the Outer Space Treaty: Global Governance for Space Activities	Hall C
17:45-18.45	PE 7 - Next Generation On-Orbit Satellite Servicing and Refuelling Programs	Hall C
18:45-19.30	IAF World Space Award Highlight Lecture: Growing Opportunities for International Cooperation in Science and Astronautics	Hall C
19:30-20.30	YP Networking Event	Hall M
Thursday, 28 September 2017		
08:00-18:00	IISL Moot Court Competition (Finals)	National Court of Australia
08:00-18:00	IAF Nomination Committee	Skyway Room 5
08:30-09:30	PE 8 - From Up There to Down Here Big Space Data Driving Sustainable Development and Economic Growth on Earth	Hall C
09:00-10:30	IAF CLIODN Meeting	Meeting Room L 1 b
09:00-11:00	IAF Space Societies Committee Meeting	Riverbank Room 1
09:00-11:00	IAF Entrepreneurship and Investment Committee Meeting	Skyway Room 2
09:00-11:30	Space Education and Outreach Committee Meeting	Meeting Room L 1 a
09:00-12:30	IAF Bureau Meeting Session 2	Panorama Suite
09:30-10:30	PE8 Press Conference	Hall M
09:30-10:30	GNF: Advancing Australia's Space and Spatial Capability	Hall C
09:30-10:30	GNF: Promoting Space Access through Global Partnerships	Hall D
10:30-11:30	GNF: Pushing the Boundaries of Research – International Science 'Made in Germany'	Hall C

Time	Event	Room
10:30-11:30	GNF: Space Mining – Law, Politics, Perspectives	Hall D
11:00-13:00	IAF Space Museums Committee Meeting	Riverbank Room 1
11:30-12:30	GNF: The Growth Challenges of Space Start-Ups: The Role of Private and Public Investors	Hall D
11:30-12:30	GNF: Reusable Launch of Small Satellites Using Scramjets	Hall C
12:30-14:30	IAA History Committee Meeting	Riverbank Room 6 a
12:45-13:15	Interactive Presentations Award Ceremony	Hall J&K2
12:45-13:45	GNF: The Status of Citizen Science in Global Earth Observation Systems	Hall D
12:45-14:00	IAA/IISL Scientific Legal Liaison Committee Meeting	Riverbank Room 6 b
12:45-14:45	IAA Study Group 3.24 - Road to Space-Elevator Era	Riverbank Room 3
13:00-15:00	IAF Space Communications and Navigation Committee Meeting	Riverbank Room 1
13:15-14:45	Interactive Presentations Session & Cocktail Reception	Hall J&K2
13:30-17:00	International Space Education Board Meeting	Skyway Room 2
13:45-15:15	GNF: ESA DG Jam Session and Moon Village Kick-Off	Hall C
13:45-15:45	GNF: Understanding the Universe and Improving Life on Earth with Australian Astronomy	Hall D
14:00-15:30	Highlight Lecture 2 Meeting	Riverbank Room 6 b
14:45-15:45	GNF: Earth Observation - Trends and Paradigm Shifts	Hall D
15:00-17:00	IPC Steering Group Meeting Part 2	Riverbank Room 1
15:15-15:45	GNF: Orbital ATK and the Future of Space Logistics	Hall C
15:30-17:30	SGAC Executive Council Meeting	Riverbank Room 6 b
15:45-16:45	GNF: The Value of Being Part of Space Exploration	Hall D
15:45-16:45	GNF: Space and Sustainable Development Goals	Hall C
16:00-18:00	Young ESA Diversity Award	Hall K 1
16:30-17:30	IAF Congress and Symposia Advisory Committee Interview with IAC 2020 Bidders	Riverbank Room 1
16:45-17:45	GNF: Space Optics: Next Steps of Optical Communications Enhancing Our Interconnected World	Hall D
16:45-17:45	GNF: New Generation Recoverable Satellite — An Advanced Space Platform for Space Environment Utilization	Hall C
17:00-18:00	IAF Committee for the Cultural Utilisation of Space Meeting	Meeting Room L 1 a
17:00-19:00	IAF Astrodynamics Committee Meeting	Skyway Room 1
17:45-18:45	HLL 2 - The Great Barrier Reef Assessing its Health from Space	Hall C
Friday, 29 September 2017		
07:30-08:30	LBN1: We are Explorers: Late-Breaking News about Mars Base Camp and the Deep Space Gateway	Hall C&D
08:30-09:00	LBN2: When Innovation Becomes Sustainable - Sky and Space Conducted First Ever Voicecall Using its Nano Satellite	Hall C&D
09:00-13:00	IAF General Assembly	Hall M
09:30-11:00	GNF: Astronauts Event	Riverbank Room 7&8
11:00-12:00	GNF: Global Real-Time Data Exchange Satellite Constellation Project	Riverbank Room 7&8
13:00-13:30	IAF Bureau Meeting	Riverbank Room 1
14:00-15:00	GNF: SpaceX Presentation by Elon Musk	Hall A,B,C&D
16:00-17:00	Closing Ceremony	Hall A,B,C&D

5 Students and Young Professionals Events

5.1 Young Professionals Events

All young professionals, please join us at these events included in your registration.

5.1.1 2017 IPMC Young Professionals Workshop

Date: **Sunday 24 September**
Time: **09:00 - 18:00**
Venue: **Adelaide Convention Centre – Room L2 L3**

The goal of the IPMC YP Workshop is to gather inputs from young professionals in the international space community to gain the knowledge they need to better develop and empower the next generation workforce. For that purpose, three working groups conducted research on three different topics:

- Topic 1 – Building the case for the On the Side Projects; A coherent and complete case for implementation of On the side projects in the aerospace sector will be presented.
- Topic 2 – Learning partnership between YPs and senior and/or retired aerospace professionals; A learning partnership plan between YP's and senior and/or retired aerospace professionals with focus on knowledge transfer.
- Topic 3 – Reshaping the space industry into Space 4.0 – YP Recommendations; Clear coherent and realistic recommendations on the evolution of the space industry to adapt to industry 4.0.

The observations and recommendations from these three working groups will be presented and discussed on Sunday 24 September 2017. The IPMC YP Workshop 2017 report will be delivered to the IPMC participants, their member organisations and the other member organisations of the IAF.

We encourage everyone to join us on Sunday 24 September afternoon from 1h30 PM in Adelaide Convention Centre Room L2 L3 for the presentations and Q&A on the three research topics outlined above.

This workshop is sponsored by:

5.1.2 2017 Young Professionals Programme

Sunday, 24 September

19:00 **YPP Networking Reception**
– Hall M/Foyer M

Introduction to the YPP by Kevin Stube (WD/YPP Committee Chair), Jean-Yves Le Gall (IAF President), Naomi Mathers (IPC Co-Chair)

Tuesday, 26 September

19:00 **YPP Panel Discussion and Networking Reception**
– Hall M/Foyer M

Panel Topic: *Space Industry Evolution*

Moderator:
- Andrea Boyd (ESA)

Panelists:
- Jan Wörner (ESA)
- Robert Lightfoot (NASA)
- Kathleen Coderre (Lockheed Martin)
- Guillaume Girard (Zero2Infinity)

Wednesday, 27 September

19:30 **YPP Keynote Address and Networking Reception**
– Hall M/Foyer M

Panel Topic: *Peaceful International Cooperation in Space*

Moderator:
- Minoo Rathnasabapathy (SGAC)

Speaker:
- Jorge Del Rio Vera (UNOOSA)

Thursday, 28 September

12:45 **Panel Discussion in the GNF, jointly organized between YPP and GEOSS**
– Hall D

Panel Topic: The Status of Citizen Science in Global Earth Observation Systems

Moderator:
- Jessica Culler (WD/YPP Committee)

Panelists:
- James Graf (NASA/JPL)
- Isabelle Kingsley (University of New South Wales, Australia)
- Danielle Wood (Researcher)

5.2 Students Events

5.2.1 International Space Education Board (ISEB) Student Programme

Dear Students,

It is with great pleasure that I welcome you to the 68th International Astronautical Congress (IAC) in Adelaide, Australia. The International Education Board (ISEB) has carefully designed a unique program for you to meet with and learn from leading experts, young professionals, and peers from around the world. Please take full advantage of this extraordinary opportunity to broaden your perspective and increase your potential.

The quality of the ISEB program is reflective of the collaborative nature of ISEB Founding Members and Members. These are, respectively, the Canadian Space Agency (CSA), the European Space Agency (ESA), the Japan Aerospace Exploration Agency (JAXA), and the National Aeronautics and Space Administration (NASA); the Centre National d'Etudes Spatiales (CNES), the Victorian Space Science Education Centre (VSSEC), the Korea Aerospace and Research Institute (KARI), the South African National Space Agency (SANSA), and the Agencia Espacial Mexicana (AEM).

This year, ISEB is sponsoring 55 student attendees of the congress. The majority of ISEB activities will be held in the International Student Zone (ISZ). The ISZ will serve as the hub of student activities for the duration of the IAC, and we encourage you to take full advantage of it. Outreach sessions will also take place at the ISZ. We hope you will enjoy this opportunity to give the children of South Australia an invaluable space education experience.

On behalf of the International Space Education Board, I would like to thank the International Astronautical Federation and members of the Local Organizing Committee for their assistance in helping us bring an exciting and fruitful program to this year's ISEB participants.

Sincerely,

Nozomu Sakuraba
Chair, International Space Education Board
Director of the JAXA Space Education Center
Japan Aerospace Exploration Agency

International Space Education Board (ISEB) Student Programme

Sunday, September 24 – ISEB Orientation, Cliftons Adelaide

13:00 – 14:00	**Student Orientation with ISEB HoEs**
14:15 – 17:15	**Cross Cultural Workshop**
17:30 – 19:00	**Outreach Programme Training Session**
19:30 – 21:00	**Icebreaker Reception**

Monday, September 25 – Commencement Day, ACC, ISZ

16:30– 17:30	**Heads of ISEB Agencies Q&A Session at the International Student Zone** (ISZ)

Tuesday, September 26 – ACC, ISZ and SAM

10:00 – 11:30	**Outreach session "Tickle My Droid" 1**
12:00 – 13:00	**Lunchtime Session** (NASA/CSA) **at ISZ***
13:00 – 14:30	**Outreach session "Tickle My Droid" 2**
19:00 – 20:30	**Networking Session at South Australian Museum** (invitation only)

Wednesday, September 27 – ACC, ISZ

10:00 – 11:30	**Outreach session "Tickle My Droid" 3**
12:00 – 13:00	**Lunchtime Session** (JAXA/VSSEC) **at ISZ***
13:00 – 14:30	**Outreach session "Tickle My Droid" 4**

Thursday, September 28 – ACC, ISZ

10:00 – 11:30	**Outreach session "Tickle My Droid" 5**
12:30 – 13:30	**Lunchtime Session** (ESA/KARI) **at ISZ***
13:00 – 14:30	**Outreach session "Tickle My Droid" 6**

Friday, September 29 – ACC, ISZ

12:00 – 13:00	**JAXA student presentation at ISZ***
13:00 – 13:20	**Presentation by ISU representative at ISZ***

*Open to All Students

5.3. IAF Grant and Recognition Programmes for Students and YPs

5.3.1 IAF Young Space Leaders Recognition Programme (YSL)

These awards are issued to students and young professionals who are in the course of their academic or professional activities, and have helped promote astronautics by enhancing outreach opportunities, expanding knowledge of space among the general public or fostering deeper engagement within the international space community. The six winners will be awarded their prizes during the Closing Ceremony of the 68th IAC on 29 September. They will also be invited to the gala dinner as guests of honor of the IAF President, Dr. Jean-Yves Le Gall.

Timiebi Aganaba-Jeanty

Timiebi Aganaba-Jeanty is currently a post-doctoral fellow at the Centre for International Governance Innovation (CIGI), Waterloo, Canada, looking at the intersection of policy and technology tools in support of the implementation of international law. She is currently focused on the potential of blockchain technology to address reporting under the Paris Agreement on Climate Change and the evolution of satellite systems to support national greenhouse gas emissions inventory's.

Timiebi is Associate Chair, Space Policy, Economics and Law at International Space University Space Studies Program and has guest lectured at the Faculty of Law, University of Sherbrooke, Quebec, Canada and the African Regional Centre for Space Science and Technology Education in Nigeria. Timiebi was previously the Executive Director of the World Space Week Association, coordinating the global response to the UN-declared World Space Week. In 2016, there were over 2700 World Space Week events registered in 86 countries. In this this role, she became a member of the Student Education and Outreach Committee of the International Astronautic Federation (IAF). Since 2008, she has presented papers at 4 IAF International Astronautic Congress (IAC) sessions on a variety of issues, primarily on the African Space Policy and other legal and policy issues affecting emerging and aspirant space nations. She will be presenting at the 2017 IAC on "Looking at a global plan to monitor emissions using satellite technology: institutions and cooperation mechanisms." She has also acted as rapporteur at IAC for the Sessions of the International Institute of Space Law.

Formerly a lawyer at the Nigerian Space Agency, Timiebi was a member of the Nigerian delegation to the Legal Subcommittee of the United Nations COPUOS in 2011, and was nominated by the United Nations Office of Outer Space Affairs to represent Africa in its 50th year celebration of women in space, based in part on initiatives she supported in Africa including the establishment of the African Regional Rounds of the IISL Manfred Lachs Space Law Moot Competition and the NASA Space Apps challenge in Nigeria. Timiebi also represented Nigeria as the Next Generation Aviation Professional at the International Civil Aviation Organization in celebration of 70 years of the Chicago Convention. From 2012-2016, Timiebi was a Consultant at Euroconsult, a leading global space consulting firm, where she led the socio-aspects of Impact Assessment studies of the Canadian Space Sector, Led a pipeline of commercialization studies on technology transfer for the Canadian Space Agency, and contributed to reports on Emerging space nations, Earth Observations, and Government Space Markets.

Previously the Director's Assistant at the International Institute of Space Commerce, Timiebi is a member of the technical advisory team on the board of the New York Center for Space Entrepreneurship and was. As well as PhD, She has an LLM Law (McGill, Canada) MSc in Space Management (ISU, France), BL Nigerian Law School, LLB Law (UK).
A recipient of several academic and professional awards, in celebration of International Women`s Day 2016, Timiebi was recognized by a Canadian cultural organization as one of 16 women for "significant contribution to Quebec society" including for her work on the board of the Amal Women's Centre, a Montreal based non for profit supporting women suffering from domestic violence abuse.

Timiebi would like to thank the World Space Week Association and the IAF for nominating and awarding her with this prestigious honor, and for the support she has received from mentors. She hopes to encourage all young people that it is not where you start that matters but where you are going and who you help lift up along the way.

Laszlo Bacsardi

Laszlo Bacsardi obtained M.Sc. degree in computer engineering at Budapest University of Technology and Economics (BME), Budapest, Hungary in 2006. He wrote his PhD thesis on the possible connection between space communications and quantum communications at the BME Department of Telecommunications in 2012. His current research interests are in mobile ad hoc communication, quantum computing and quantum communications.

From 2009, he works at the University of Sopron, Hungary (formerly known as University of West Hungary). Currently, he is Associate Professor and the Head of the Institute of Informatics and Economics. As an Adjunct Assistant Professor, he is member of faculty at the Department of Networked Systems and Services, BME as well.

Dr. Bacsardi is the Secretary General of the Hungarian Astronautical Society (MANT), which is the oldest Hungarian non-profit space association founded in 1956. He is member of the board of a Hungarian scientific newspaper ('World of Nature') and he is the publisher of a non-profit Hungarian space news portal ('Space World'). Furthermore, he is member of Institute of Electrical and Electronics Engineers (IEEE), the American Institute of Aeronautics and Astronautics (AIAA) and the Scientific Association for Infocommunications Hungary (HTE—an IEEE and IEEE ComSoc sister society). He has joined the Space Generation Advisory Council (SGAC) and served as the Hungarian National Point of Contact between 2012-2016. As a member of SGAC's Executive Office, he is currently active as Regional Events Coordinator.

He is member of two committees of the International Astronautical Federation (IAF): IAF Space Communications and Navigation Committee and the IAF Space Societies Committee. Moreover, Dr. Bacsardi is substitute management committee member of the COST Action CA15220 Quantum Technologies in Space which is a four-year-long European research action started in 2016. He has more than 80 publications.

Jessica Culler

Jessica Culler was selected for her first space job at 20 years old, when she began a series of four technical internships at NASA's Johnson Space Center, as she earned a Bachelor of Science degree in Aerospace Engineering. She participated in or managed student programs at three other NASA centers, then went on to get a Master of Business Administration degree. Her knowledge of the space sector paired with well-rounded technical and communications skills brought her to a career in the essential field of sharing the value of astronautics to stakeholders in the public and media. In this capacity, she has been a leader in digital communications and using new media tools to engage external audiences in space like never before. Currently she is the acting news chief at NASA's Ames Research Center in California's Silicon Valley. She develops content and strategy for broadcasting space research to the world.

She first attended the 2004 IAC and Space Generation Congress. Since then, she's attended eight IACs, with duties beyond "participant" at each. She's a member of three IAF committees, has chaired numerous technical sessions, and has moderated, organized and been a panelist on various plenaries.

Culler has a standing history of not only being chosen to participate in highly selective programs for exceptional young people, but also, upon receiving benefits from those experiences, taking action to "pay it forward" to the young people after her, striving to give them more and better opportunities than even what she was honored to receive. In this capacity she has run two NASA Academies after being a research associate in one, hosted International Space University after being a student, mentored the IAC Next Generation Plenary panelists, organized the IAC's International Project/Programme Management Committee Young Professionals Workshop after participating, and organized NASA's second Next Generation Exploration Conference after meeting her future husband when they were both invited participants at the first.

Patrick Hambloch

Patrick Hambloch is an aerospace systems engineer with more than a decade of experience in multi-disciplinary engineering and research. In multiple capacities he has led diverse teams of space professionals, scientists, and engineers from several countries.

He is currently working as research engineer at the Rotorcraft Systems Engineering and Simulation Center at the University of Alabama in Huntsville. In that position he supports experiments on the International Space Station, in the field of Airborne Science, and other engineering projects.

Between 2009 and 2015 Patrick worked at the Microgravity User Support Center (MUSC) of the German Aerospace Center (DLR) in Cologne, Germany. At the MUSC he led a team of engineering and science professionals for the operations of the Materials Science Laboratory (MSL), a science payload onboard the International Space Station. During his time at DLR, the enthusiastic MSL team successfully processed 30 science experiments on orbit. Patrick closely coordinated with different teams around the globe at the European Space Agency, Airbus Defense and Space, NASA, and science investigators in Europe and the United States. Between 2006 and 2007 he was responsible for the design and manufacturing of the electrical harness of the second Young Engineers' Satellite (YES2), which was launched in September 2007 from Baikonur Cosmodrome as part of the Foton-M3 mission.

In the IAF, Patrick currently serves as the Vice Chair of the Workforce Development and Young Professional Program Committee and is also a member of the Knowledge Management Technical Committee. He is also Director of Academic Outreach of the North Alabama chapter of the Project Management Institute.

Patrick Hambloch holds a Master's degree in Space Systems Engineering from TU Delft (Delft, the Netherlands) and a Diplom in Electrical Engineering from Hochschule Niederrhein (Krefeld, Germany). He is also certified as a Project Management Professional (PMP) by the Project Management Institute.

Minoo Rathnasabapathy

Minoo Rathnasabapathy currently serves as the Executive Director of the Space Generation Advisory Council (SGAC), a global non-governmental organization which acts in support of the United Nations Programme on Space Applications, based in Vienna, Austria. Ms. Rathnasabapathy is responsible for leading the operations, business development, strategy, and policy output for SGAC, a network that represents over 10,000 university students and young professionals in 110+ countries.

Before joining SGAC, Ms. Rathnasabapathy worked as an Aerospace Engineer on the structural design optimization for the ARIANE 5 launch system in Augsburg, Germany. She earned her Bachelor's degree in Aerospace Engineering at RMIT University in Melbourne, Australia, and is currently completing her PhD in Aerospace Engineering. Her doctoral thesis investigates the impact dynamics of novel materials used in aerospace structures.

Ms. Rathnasabapathy serves as a member of the World Economic Forum Global Future Council on Space Technology and the Generation-Next Advisory Board for Via Satellite. Besides her interest in the space sector, Minoo enjoys hiking, bungee-jumping, and has a black belt in Shotokan Karate.

Stephanie Wan

Stephanie Wan is a Systems Analyst at Overlook Systems Technologies Inc., providing support to NASA's Space Communication and Navigation (SCaN) Office in Washington, DC. Her leadership experiences through the Space Generation Advisory Council (SGAC) over the past 9 years and passion to connect her global network with creative opportunities led to secondments with the U.S. Department of State (Space and Advanced Technology Office) and the Department of Commerce (National Coordination Office on GPS). She graduated from American University with a Bachelors degree in International Studies, and a Masters degree in International Science and Technology Policy, with a focus in Space Policy from The George Washington University – Space Policy Institute. Her international background and travel interests have led her to live/study abroad in Belgium, China, Japan, and South Korea, as well as learn to speak more than five different languages. Over the course of her career and studies, Stephanie has focused on outreach & strategic communications/engagement, Global Navigation Satellite Systems (GNSS), small satellites, international & inter-agency cooperation, space communications, and emerging space nations.

2008 was her first experience attending the Space Generation Congress (SGC) and IAC in Glasgow, where she first experienced the IAF Young Professionals Programme (YPP) Committee. She is currently involved with the IAF SCaN, Space Education and Outreach, as well as the YPP Committees. Inspired by the IAF YPP's commitment to the next generation, she has been utilizing her IAC experiences to initiate succession planning strategies, student and young professional programs, and fundraise scholarship opportunities within various space organizations.

Besides her current work with the U.S. government, Stephanie has worked with a variety of organizations including: SpaceWorks Commercial, National Council for International Visitors, the Federal Communications Commission, and SRI International. She is currently on the Board of Advisors for Blue Marble Space, and served as SGAC Chair from 2015-2017.

5.3.2 IAF Emerging Space Leaders Grant Programme

Fourteen students and young professionals were chosen by the Emerging Space Leaders Steering Committee composed of six highly experienced space stakeholders. They will attend the 68th International Astronautical Congress and have the opportunity to extend their network, gain knowledge and meet all the relevant people in space industry.

Ahmad Shaqeer Bin Mohamed Thaheer

Malaysia

Ahmad Shaqeer, 25 years old, holds a BSc degree in Aerospace Engineering in 2015 from Universiti Sains Malaysia. During his Bachelor study, he was the President of the School of Aerospace Engineering Society, USM. He develops the structure subsystem for the Malaysia first scientific High-altitude Balloon project and with that, he participates the Global Space Balloon Challenge organized by MIT. Then, he works as a Research Assistant in developing in-house microcontroller for research. He is now a Master's degree candidate in the field of Aerospace Engineering from Universiti Sains Malaysia. He is undergoing a research on the development of Malaysia first nanosatellite focusing on the mission analysis and design. During his MSc study, he co-authors a book chapter titled 'CubeSat Technology in Satellite Development' in the book of 'Advances in Aerospace Science and Technology' published by Nova Science Publisher. He hopes that it will be the foundation for future nanosatellite development in Malaysia. He participates the 3rd Asia-Pacific Space Generation Workshop held in Los Baños, Phillipines to expand his networking capabilities as well understand the current space news and market. His goals are to obtain a PhD in satellite development by the age of 28 and works as an engineer in satellite development project. He hopes that he will be in the team that lifts Malaysia space research and development framework in the future.

Pablo Melendres Claros

Bolivia

Pablo Melendres Claros is an electronics and telecommunication engineer from Bolivia. He´s currently working in the Bolivian Space Agency (ABE) as the Satellite Team Leader. He's in charge of monitoring the subsystems and the execution of all operations of the TKSAT-1 satellite.

In 2012, around 1500 professionals were chosen to apply for a training in Beijing, China to manage the first Bolivian communications satellite. After several tests and interviews, Pablo along with other 63 professionals was selected for the training. He managed to be in the top ten and received additional courses on ground station management.

Last year, he had the opportunity to visit schools in his city, to talk to last-year students about the space, the work the Bolivian Space Agency does, to encourage future professionals to be part of the aerospace revolution and contribute to Bolivia.

In this year´s IAC, he will be presenting his paper with a colleague, about a proposal to unify the Spanish translations of English aerospace terminology, so the Spanish community uses standardized translation in their work. The validated terms will be available for everyone to make aerospace content more accessible for native Spanish speakers.

Abinish Kumar Dutta

Nepal

Abinish Kumar Dutta is currently a final year undergraduate student of Mechanical Engineering at Kathmandu University, Nepal. He is a dedicated space enthusiast and a budding entrepreneur working to promote space education and the development of space technology in his own country and beyond. He helped found Nepal's first aerospace company "ORION Space" with a vision to make space science and technology more accessible to students and adult professionals alike and to develop it into a premier center for aerospace research and a one-stop manufacturer of advanced space products in the future. As the company's project manager, he has successfully helped initiate Nepal's first nanosatellite development project with little resources available and currently leads the project team. He is determined to play even greater pioneering roles in the field in the future. He has also been conducting various workshops and hands-on trainings using CanSats and other picosatellite-based educational tools for other students and amateurs in the field. In the past, he has volunteered for Nepal Astronomical Society (NASO) in several astronomy outreach activities.

Besides, he is also an avid researcher and a semi-autodidact in the field. His current active academic and non-academic research interests include hypersonic aerothermodynamics (especially scramjet propulsion for SSTO flight) and distributed space systems control among others. He is currently paving the way for his higher studies in the same discipline.

Merve Erdem

Turkey

Merve Erdem is a research assistant in the International Law Department of Ankara University Faculty of Law since 2011 and got her Ph.D. degree in December 2016. Her motive for choosing to study not just international law but also space law is the keen interest and enthusiasm she has for this area of law.

She started to pursue her academic career in space law with her master's degree at Ankara University Institute of Social Sciences. She defended her master thesis titled as *"An Analysis of the Outer Space Regime Seth Forth by the United Nations Treaties in the Context of International Law"* in 2011. Later on, she published her very first book on space law with the name of *"The Legal Regime of Space and Space Activities"* in 2014.

Since starting her master's period, she not only produces academic works inside the doors but also participates in national conferences and workshops in Turkey to observe other aspects of space studies and exchange ideas with other scholars who do not have a legal background. She gives speeches on the legal regime of space and its difference from the legal regime of air at academia and practitioners forums. She also teaches space law within the Civil Aviation Law lecture in each semester at the Ankara University Faculty of Law. In September 2015, she was accepted as a prospective member of International Institute of Space Law (IISL), and since then, she also involves in conferences and workshops at the international level including IAC 2016 organized in Mexico. Recently she is invited to join to Turkish Space Mining Working Group (TUMÇAĞ), and they held the I. Asteroid Mining and Meteor Science Workshop in Istanbul, in December 2016.

Even though her Ph.D. dissertation touches upon another topic of international law (State Immunity in the Face of Jus Cogens Violations of States), she continues to work on the crucial and contemporary issues of space like governance of space resources and interpretation of outer space treaties. She believes that her general background on international law gives her the opportunity to see the whole picture and focus on the specific legal problems in comparison with the other spatial rules of international law. This background is also beneficial for her to apply the problem-solving methodology of international law on space law to be able to find more substantial solutions on the legal issues of space activities.

Wei-Yu Louis Feng

Taiwan

Wei-Yu Louis Feng is currently completing his Master's degree (M.Phil) in space studies at University of Cape Town. His thesis is focusing on the active debris removal technologies. Wei-yu Louis received his Bachelor's degree in Mechatronics from University of Cape Town in 2013. His bachelor's thesis in control engineering was published in New Trends in Networking, Computing, E-learning, System Sciences and Engineering. He worked as a system engineer in the petroleum industry during 2014 and 2015, where he travelled to and worked at multiple countries includes: US, UK, Angola, Spain and South Africa. Following on from a stint in industry he returned to academia as student in the M.Phil space studies program. He was the recipient of the SSPI grand prize in 2016 with the literature: "Study of current regulations and possible recommendations associated with smallsat revolution." He was also the winner of the 3rd IAF international student workshop held at Guadalajara, Mexico in 2016. After a fruitful journey at Mexico, he conducted a research exchange at the Institute for Space Systems (IRS) at Stuttgart University in Germany from October 2016 till January 2017. He had an oral presentation on debris capturing techniques at the 7th European space debris conference held at ESOC in Darmstadt, Germany. He has recently being selected as one of the Emerging Space Leader (ESL) by the International Astraunautica Federation (IAF).

Wei-Yu Louis is passionate about improving people's life using technologies and creates a long selfsustaining system for future generations.

Marco Gómez Jenkins

Costa Rica

Marco Gómez Jenkins carried out his undergraduate studies at the Georgia Institute of Technology, receiving dual degrees in aerospace and mechanical engineering. He placed third in the Undergraduate Team Space Design Competition 2011 of the American Institute of Aeronautics and Astronautics for his thesis focusing on the design of an orbital debris removal mission. After graduation, he worked at the Ad Astra Rocket Company performing thermal studies on the VASIMR engine, the world´s most powerful spacecraft electric propulsion system. In 2012, Mr. Gómez started the Master´s program in aerospace engineering at the Delft University of Technology. This program included an internship at the Swiss Space Center of the École polytechnique fédérale de Lausanne, where he optimized spacecraft trajectories using low-thrust propulsion systems for an orbital debris removal mission. His graduate thesis was awarded the best technical student paper prize at the International Astronautical Congress 2015, by the British Interplanetary Society. That same year, he started working at the Costa Rican Institute of Technology (TEC) as project manager for the Irazú mission, which aims to place the first satellite of the Central American region in orbit by early 2018. He recently co-founded the Space Systems Laboratory at TEC (SETEC) and is currently working as Program Manager. Marco is a strong advocate for international collaboration in satellite missions and promotes the use of space technology in developing countries.

Doris Grosse

Germany

Dr. Doris Grosse is an early career research scientist specialising in adaptive optics with the Advanced Instrumentation and Technology Centre (AITC) at the Australian National University (ANU) Research School of Astronomy and Astrophysics. She did her engineering graduate degree with the Faculty of Electrical Engineering and Information Technology of the Ruhr-University Bochum in Bochum, Germany. Afterwards, she worked with the Photonics and Terahertz Technology research group at the Ruhr-University Bochum as a research assistant, where she subsequently finished her PhD on the topic of three-dimensional imaging with digital and photorefractive holography.

At the beginning of 2016, Doris joined the Adaptive Optics group at the ANU AITC for her first postdoctoral research position. She is developing an adaptive optics system within the scope of the Space Environment Research Centre (SERC), an Australian government funded Cooperative Research Centre for the measurement, monitoring, analysis and management of space debris. One of the goals of SERC is to use photon pressure from a laser beam to manoeuvre space debris away from a collision course with other functional satellites or debris. The adaptive optics system will support this goal by aiding the propagation of a high-power laser from a ground based telescope through the atmosphere.

Researching on the topic of space debris and Space Situational Awareness, Doris strongly believes that a long-term solution to the space debris problem can only be found through international cooperation, as it is a global issue.

Alexander Linossier

Australia

"I've been passionate about space for as long as I can remember. What began as a fascination with planets and stars quickly evolved into space vehicles and rockets. After completing my Bachelor of Aerospace Engineering / Bachelor of Arts at Monash University in Melbourne, Australia, I faced up to a harsh truth; with no government space agency, and very little space industry, there were no space jobs for me at home. Instead, I spent the next two years working in Oil & Gas as a Drilling Engineer, where I gained invaluable experience both on and off the rigs. Most importantly, I learned how to work and talk with people from rig crews through to senior executives. My goal was still to work in space, however, and so I moved to Germany, where I am currently studying my Master of Space Engineering at the Technische Universität Berlin, and completing my Master's thesis at the Asher Space Research Institute in Haifa, Israel. I believe that although Australia is behind the curve when it comes to space, our hesitance has provided us with a unique opportunity. As a strong, international economy, and without the red-tape and political baggage that typically accompanies traditional space, Australia can quickly establish themselves as a haven for the rise of 'Space 4.0' and commercial space ventures. At the same time, our world-class researchers and engineers can contribute to the massive undertakings of the new space exploration era that require unprecedented levels of international collaboration between governments and industry."

Narayan Prasad Nagendra

India

"Cofounder at satsearch.co, where we are building a comprehensive, independent and up-to-date search engine that indexes all the products and services within the space industry. Our platform will provide users with parametric search capabilities, enabling complex data querying and visualization at their fingertips.

A DAAD Scholar pursuing doctoral candidate at Lehrstuhl Supply Chain Management, Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany, driving research based on business management with a focus on business ecosystems.

Erasmus Mundus SpaceMaster graduate and an EGIDE scholar (French Embassy Scholarship 2011) with a Master in Space Technology, Sweden and a Master in Space Techniques and Instrumentation, France. Previous experiences with the Indian Institute of Astrophysics, DLR Institute of Space Systems, Germany. Master in Space & Telecom Laws from the Center for Air & Space Law of NALSAR Law University, Hyderabad. With my background in Space Instrumentation & Technology and experiences in the entrepreneurial landscape of India, I research on space policy models that shall enable integration of commercial and NewSpace possibilities into the Indian space ecosystem.

Curator of NewSpace India, an online publication of articles providing an in-depth analysis of current issues in technology, policy, economics, commercialisation, geo-politics, defence around the Indian space programme. I plan to use the social media platforms and the blog to write about my international experiences to the Indian audience. At the same time, I also contribute articles on building NewSpace ecosystems for TheWire.In and the Space Alert, a Quarterly on Space Affairs published by Observer Research Foundation (ORF)."

Lisa Peacocke

New Zealand

Lisa Peacocke is currently a PhD candidate at Imperial College London, researching next generation Mars entry vehicles with deployable heatshields. She recently returned to study after a decade in the space industry, to gain expertise in an area of particular interest to her – planetary entry, descent and landing. During her 10 years in industry, Lisa worked at Airbus Defence and Space as a Mission Systems Engineer, designing future planetary exploration and space science missions such as MarcoPolo-R, Mars Precision Lander and Phobos Sample Return. She also worked as a systems engineer on missions such as JUICE, Mars Hopper, Uranus Pathfinder and SWARM. Lisa strongly believes in the value of space exploration, to motivate and inspire people towards positive projects, and to push the boundaries of human understanding. She is a New Zealander with Dutch and British heritage, and is excited to see the growing participation of Oceania in new space projects.

Maria Alexandra Lora Veizaga

Bolivia

Alexandra Lora is a Bolivian engineer, who has studied Telecommunication technologies at the Bolivian Catholic University (UCB) and has been part of the team of some important Bolivian telecommunications companies, such as ENTEL and TIGO, where she has showed skills such as team work, high professional ethics and social commitment. She was a crucial part of the team who put in orbit the first Bolivian Telecommunication Satellite (TKSAT-1), her team was responsible to monitor the orbit transfers of the satellite, manoeuvers that were done by a Chinese team. She has worked pro bono as an organizer of the first Bolivian Aerospace Congress "Bolivia Mirando al Cosmos" where she gave a presentation on orbit dynamics. Also, she has been a speaker in several conferences in Bolivia where she presented the aim and functionality of the TKSAT-1. Now she is the Orbit Team Leader at the Bolivian Space Agency (ABE), her main roles are the management of the orbit of the satellite and the control and maintenance of the equipment on the ground station. On 2016, she was part of a training on satellite systems at SES headquarters in Betzdorf, Luxembourg. She has constantly been in touch with different agencies and believes that "Understanding and cooperation between different entities can show us a path to better technology and a better world".

Annelie Vermeulen

South Africa

Ani Vermeulen is a Masters student in Space Studies at the University of Cape Town's SpaceLab programme. She is currently completing her research component in collaboration with the South African National Space Agency (SANSA). Her prior education includes a Bachelor's degree in Industrial Engineering (University of Pretoria) and a Honours degree in Astrophysics and Space Science (University of Cape Town). She will be presenting at IAC2017 on ionospheric scintillation detected in GPS signals in the South Atlantic Magnetic Anomaly using a ship-based receiver.

Space flight has been a lifelong passion for her. She gained four years experience as a Process Engineer and Business Analyst before she chose to pursue what she loves most, and returned to university to focus on space-related science and technologies. She spent a summer working at SANAE IV, the South African scientific research base in Antarctica, as a member of the SANSA engineering team performing field work on the SuperDARN radar array, VLF antenna, GPS systems and fluxgate magnetometer.

She participated in the 2016 Space Station Design Workshop at IRS Stuttgart University during which she fulfilled the role of project manager specialising in cost & risk. Upon completion of her studies she plans to move into the space industry with a focus on the field of Space Mission Analysis and Design. She is passionate about sharing the wonders of space and science with others, and encouraging students to pursue scientific careers in Astrophysics, Space Science and Space Engineering.

Matjaz Vidmar

Slovenia

Matjaz Vidmar is a PhD student in Science, Technology and Innovation Studies at the University of Edinburgh and at the Royal Observatory Edinburgh. He is a (Astro)Physicist by training, with further degrees in Social Science, where he is looking at science evaluation, innovation and economic growth. In his doctoral research, he is deploying ethnographic methodology to study high-tech innovation in the Space Industry, focusing on emerging networks, knowledge transfer and changes to new product development processes, in particular looking at recent (»New Space«) developments in previously peripheral countries, such as Scotland and Slovenia. His research is linked with applications in science policy and business incubation, for instance by working in close partnership with the innovations arm of the UK's Science and Technology Facilities Council. Additionally, he is involved in several international initiatives and projects to develop the future of Space Exploration and Industry, such as serving as the Policy Lead for the Gateway Earth Development Group and as an Assistant Editor at the Journal of Astrosociology. He is also a university lecturer, a student mentor and tutor, and an award winning science communicator, with projects delivered in several countries and in leading science and arts venues. You can find more about Matjaz, his work, and how to get in touch, at: www.roe.ac.uk/~vidmar.

Sarah Wittig

Australia

Sarah Wittig is an applied Physicist, currently working at ESA as an expert in opto-electronics, specializing in detectors. Her background is in experimental physics, with a focus on quantum optics. Sarah completed her PhD at the Australian National University in 2012. The project involved developing and testing a concept for a quantum repeater, based on high-resolution spectroscopy of a crystal cooled below 4K. Following her PhD, Sarah moved to Europe to undertake a postdoctoral position at the University of Munich in the field of nano-photonics. Sarah began her career in space in 2004, when she moved to the Netherlands to join ESA as a Research Fellow, initially in components technology as a photonics engineer, and as of November 2016, in opto-electronics as a detector expert. As a Technical Officer at ESA, Sarah defines and manages diverse development activities in the photonics and electro-optics domain, which are undertaken by European industry. In addition, Sarah is also supporting ongoing ESA projects in reviews and developments as a detector expert.

Having grown up and studied in Australia, Sarah is especially excited to return to Australia to attend the IAC as an Emerging Space Leader, and is optimistic that this will lead to increased participation in international space activities for Australia.

5.3.3 Future Space Leaders Grant Programme

The Future Space Leaders Foundation (FSLF) organizes the Future Space Leaders Grant Programme providing opportunities for U.S. graduate students and young professionals pursuing space and satellite-related careers to participate in the 68th International Astronautical Congress (IAC).

Deepak Atyam has co-founded and is running a NewSpace startup, Tri-D Dynamics, which focuses on mass producing liquid rocket engines for the burgeoning launch vehicle markets. He has received his M.S. in Aerospace Engineering with a Major focus in Manufacturing Engineering from Purdue University ('17) in addition to a B.S. in Aerospace Engineering from UC San Diego ('15). Atyam has worked at Space-X, GLXP Team Moon Express, Purdue's Zucrow Laboratory, NASA JPL (x2), LaRC (x2), and MSFC starting from the age of 17 and has led multiple successful NASA funded projects including the production and testing of the first and second fully 3D printed liquid rocket engine from a university. He founded and served as the President of the SEDS@UCSD and UCSD's Triton Rocket Club. Atyam has also been selected as a Gordon Engineering Leadership Fellow, a University Innovation Fellow, a Kairos Fellow, Aviation Week's 20Twenties in Aerospace, a Forbes 30 Under 30 Student Scholar, won multiple business plan competitions, and has 5 patents pending along with 1 patent allowed.

Sirisha Bandla currently works at Virgin Galactic in the D.C. operations office on Government Affairs and Business Development, supporting both LauncherOne and SpaceShipTwo programs. Previously, Sirisha served as the Associate Director for the Commercial Spaceflight Federation, an industry association of commercial spaceflight companies, working on various policies with the aim to promote the commercial space industry. Before CSF, she worked as an aerospace engineer designing components for advanced aircraft at L-3 Communications. She has a Bachelors of Science degree in aeronautical/astronautical engineering from Purdue, and holds a Masters of Business Administration from the George Washington University.

John Conafay is a graduate of the design school at Arizona State University and veteran of the United States Air Force. He has worked with multiple labs and space initiatives at ASU before working as a Business Operations Intern at Spire Global in San Francisco, CA. Conafay was Treasurer and then Executive Director of Students for the Exploration and Development of Space, USA. While in these roles he, with his phenomenal team, streamlined operations, finance, and accounting systems, invested the national endowment, spearheaded the first national rebrand in over 35 years, and raised over $500,000 for the organization. John is currently an analyst with Bryce Space and Technology, formerly as a contractor for NASA Headquarters before being asked to join the Bryce business development team.

Joshua W. Ehrlich is a Systems Engineer for Lockheed Martin Space Systems Company working test & verification on the Orion European Service Module. His previous job experience includes integration and test on the SpaceX Falcon 9 launch vehicle and Veggie and Advanced Plant Habitat science payloads at NASA's Kennedy Space Center. Prior work in research includes areas in advanced applications for composite materials, dual-axis wind turbine blade fatigue testing, and semi-closed cycle gas turbine systems. He has a B.S. in Aerospace Engineering from the University of Florida and an M.S. in Mechanical Engineering from Embry-Riddle Aeronautical University with a thesis defense focus on Lagrangian-point propellant depots for interplanetary missions to Mars. Joshua was selected as a crew member for HI-SEAS Mission V, serving as the Mission Specialist of Biology performing plant growth optimization with NASA's Veggie ground test hardware during the 8-month Mars-simulated mission.

McClain Goggin is pursuing a masters degree in astrodynamics and space applications at Purdue University. He has lead the payload team on a NASA-funded CubeSat project, taken multiple space-policy study abroad trips, and worked internships at Cummins Engine Company, NASA's Marshall Space Flight Center, and Northrop Grumman. His ultimate goal is to bring the durability and reliability of diesel engines to the space industry in order to allow more people to take advantage of space on a regular basis. He has a passion for building the future he wants to live in and the relationships with those he wants to share that future with. He loves working on difficult problems and looks forward to solving the problems that will arise as mankind ventures farther and farther into space.

Peter Schulte is currently a fifth year graduate student and National Science Foundation Fellow at the Georgia Institute of Technology majoring in Aerospace Engineering. Peter is a PhD candidate in the Space Systems Design Laboratory under advisor Dr. David Spencer. His research career began as an undergraduate at The University of Texas at Austin, where he was involved in student satellite projects Bevo-1 and FASTRAC. His Master's research at Georgia Tech involved development, integration, and testing of an autonomous Guidance, Navigation, & Control (GN&C) subsystem for the Prox-1 student satellite project. Peter's PhD topic involves the development of a state machine architecture for aerospace vehicle fault protection.

Anna Thomas is a Ph.D. candidate at Stanford University studying hypergolic ionic liquids for application as green propellant alternatives. She obtained her B.S. in chemical and biomolecular engineering from the Georgia Institute of Technology in 2013. After which, she was awarded a Fulbright grant to conduct combustion instabilities research at the Technical University of Munich in Germany. Since starting at Stanford University in 2014, Anna has completed her M.S. in aeronautics and astronautics with a research focus on propulsion technologies. Her research interests include propellant chemistry, combustion science, and chemical kinetics.

6 Associated Events

6.1 IAC 2017 Kick-Off Press Conference

Date: **Sunday, 24 September 2017**
Time: **11:00-12:00**
Venue: **Adelaide Convention Centre, Panorama Suite**

The IAF President, Jean-Yves Le Gall, will introduce to the press the wide range of very interesting events relating to all aspects of Space, to be featured at the IAC 2017. The Plenary Programme is the most intense programme the IAC has ever featured with 8 plenaries, 3 Highlight Lectures and 2 Late Breaking News. Around 200 technical sessions will be presented in the Technical Programme covering the fields of, among many others, Science and Exploration, Technology and Space Society.

The Global Networking Forum includes over 40 events from all types of industries and countries. The IAC 2017 Exhibition, from its side, includes over 100 exhibitors from industry, space agencies, research centres and universities, associations and space societies.

The Press Conference is open to all IAC 2017 delegates. Light appetizers will be served.

Speaker:

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

MODERATOR
Christian Feichtinger
Executive Director,
International Astronautical Federation (IAF),
France

6.2 IAF IDEA "3G" Diversity Breakfast

Date: **Wednesday, 27 September 2017**
Time: **07:00 – 08:30**
Venue: **Adelaide Convention Centre, Foyer E**

INTERNATIONAL PLATFORM FOR DIVERSITY AND EQUALITY IN ASTRONAUTICS
3G GEOGRAPHY • GENERATION • GENDER

"First Woman on the Moon"

In continuation of the IAF President's initiative on fostering the principle of 3G Diversity in astronautics and as an important element of the IAF 3G Diversity Day on 27 September 2017 at IAC 2017 in Adelaide, Australia, the IAF is using its IDEA platform to offer an IAF IDEA 3G Diversity Breakfast to all delegates fo-cusing on the epochal and historic event in mankind's future of the first woman to set foot on the Moon under the title "First Woman on the Moon".

Based on the initiative of the International Lunar Observatory Association (ILOA), the organiser of regular Galaxy Forums and IAF member since 2011, and with strong support by the European Space Agency, The American Institute of Aeronautics and Astronautics (AIAA) and Lockheed Martin Corporation, this break-fast event shall provide an opportunity to hear about the perspectives of the first female astronaut set-ting foot on the Moon, the plans of space agencies and industry in advancing a "Moon village" concept with an inclusive participation and the opinions of those who have been and will be the ambassadors of humankind in exploring the universe – our astronauts.

With this event the IAF and its partners wish to draw the attention of a global space community on the long-overdue consideration of the historic significance of the first woman on the Moon as was the first man on the Moon almost 50 years ago, when humanity will reclaim its existence as a multi-world species and at that time become a multi-world civilization – a Moon Village prototype – in peace for all, and for good.

Programme:

- Welcome and Introduction (07:10 – 07:20)
  Jean-Yves Le Gall (IAF President)
- Keynote "The Historic Significance of the First Woman on the Moon" (07:20 – 07:30)
  Steve Durst (Founding Director of the International Lunar Observatory Association ILOA)
- Keynote "The Moon Village Concept" (07:30 – 07:40)
  Jan Woerner (Director General, European Space Agency)
- Keynote "Industry's Role and Commitment to Supporting a Moon Village Concept" (07:40 – 07:50)
  Danielle Richey (Systems Engineer at Lockheed Martin SSC)
- Keynote "The Astronauts' Perspective" (07:50 – 08:00)
  Sandy Magnus (Executive Director of The American Institute of Aeronautics and Astronautics AIAA)
- Concluding Remarks (08:00 – 08:10)
  Mary Snitch (IAF Vice President for Diversity Initiatives)
- Networking (08:10 – 08:30)

6.3 IAF IDEA "Excellence in 3G Diversity Award" Luncheon

Date: **Wednesday, 27 September 2017**
Time: **12:30 – 13:30**
Venue: **Adelaide Convention Centre, Foyer E**

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

At IAC 2017 this newly created award will be given for the first time. The inaugural winner of this award is the **Mohammed Bin Rashid Space Centre (MBRSC)** from the UAE. This Luncheon is dedicated to the award ceremony for the first "IAF Excellence in 3G Diversity Award".

Programme:

- Welcome (12:45 – 12:50)
  Jean-Yves Le Gall (IAF President)

- Introduction of the IAF 3G Diversity Award (12:50 – 12:55)
  Mary Snitch (IAF Vice President for Diversity Initiatives)
- Award Ceremony and Photo (12:55 – 13:00)

- Presentation by the Award winner (13:00 – 13:20)
  Mohammed Bin Rashid Space Centre (MBRSC)
- Networking (13:20 – 13:30)

6.4 IAF International Platform for Diversity and Equality in Astronautics IDEA & Women in Aerospace Europe WIA-E

Date: **Thursday 28 September 2017**
Time: **07:00 - 08:30**
Venue: **Adelaide Convention Centre, Foyer E**

IAF International Platform for Diversity and Equality in Astronautics IDEA & Women in Aerospace Europe WIA-E
are proud to invite you to a Joint Breakfast

Date: Thursday 28 September
Time: 7:00-8:30
Venue: Foyer E, ACC

A Gender Diverse Space Workforce – A Key for Unlocking Imagination, Fostering Innovation and Strengthening Security

Introduction:
Jean-Yves Le Gall (President IAF), **Luisella Giulicchi** (President WIA-E)

Panelists:
Pascale Ehrenfreund, Chair of the DLR Executive Board
Roberto Battiston, President of the Italian Space Agency
Sarah Jane Pell, Australian artist, researcher and occupational diver
Jan Woerner, ESA Director General
Moderator:
Christiane Lechtenboerger (WIA-E International and Institutional Director)
Closing remarks:
Mary Snitch (IAF VP for Diversity Initiatives)

6.5 IAF/ISEB Educators Professional Development Workshop

Date: **Friday, 22 September 2017 & Saturday, 23 September 2017**
Time: **08:15- 16:00**
Venue: **State Library of South Australia, Hetzel Lecture Theatre**

Friday, 22 September 2017

Time:	Programme:
08:15 - 08:30	**Welcome/Introduction** ***Michael Pakakis***, Director, VSSEC
08:30 - 08:40	**Welcome** ***South Australian DET Executive Director for Learning Improvement***
08:40 - 08:50	**Address** ***Eva Friman***, Sky and Space Global
08:50 - 09:20	**Keynote** ***Christine Redman***, Melbourne Graduate School of Education, Capstone (Chair), Head of Science Education program delivery, University of Melbourne.
09:20 - 10:45	**Classroom Instruction That Works Part 1.** MP, IC, LB An introduction to teaching strategies for which there is scientific evidence of their effectiveness 1. Similarities and Differences 2. Summarizing and Note Taking 3. Reinforcing Effort and Providing Recognition 4. Increasing Value in Homework and Practice 5. Using Non-Linguistic Representations 6. Incorporating Co-operative Learning Effectively 7. Setting Objectives and Providing Feedback 8. Generating and Testing Hypotheses 9. Utilizing Questions, Cues and Advance Organizers
10:45 - 11:00	**Morning Tea**
11:00 - 12:30	**Classroom Instruction That Works Part 2.** MP, IC, LB Participants will learn to design effective science instruction, applying classroom instruction that works and using Dr Jane Pollock's GANAG lesson schema. They will apply these techniques to their unit plan.
12:30 - 13:00	**Lunch** *(Sponsored by Sky and Space)*
13:00 - 16:00	**Computational thinking: Applying learning to investigation, *Tickle my Droid*** MG, LB, DS Participants will discover an engaging introduction to the worlds of computer programming and robotics using SPRK+ robots. They will learn how their students can demonstrate learning using the Scratch language.

Saturday, 23 September 2017

Time:	Programme:
08:15 - 08:30	**Welcome/Introduction MP**
08:30 - 09:00	**Keynote** ***JAXA Astronaut (to be confirmed) or JAXA HoE***
09:00 - 10:30	**CSIRO PULSE@Parkes** RH This CSIRO program places students in control of the Parkes Radio Telescope to observe pulsars. In the first session Rob Hollow will explain the interpretation of pulsar data and the techniques for collecting it**.**
10:30 - 11:00	**Morning Tea**

11:00 - 12:30	**CSIRO PULSE@Parkes** RH Participants will take over The Dish, collect and analyse data from pulsars of their choosing.
12:30 - 13:00	**Lunch** *(Sponsored by Sky and Space)*
13:00 - 15:15	**Computational Thinking-connecting STEM to computer coding, *The States of Matter*** MG, LB, DS Participants will make discoveries about the nature of matter and demonstrate their understanding by creating animations.
13:15 - 15:30	**Summary: *Did we Reach our Goal?*** IC

VSSEC/CSIRO Presenters
MP: Michael Pakakis
IC: Ian Christie
RH: Robert Hollow
LB: Luca Bertolacci
MG: Mark Gleeson
DS: Danielle Shean

6.6 Cross-Cultural Communications and Presentation Workshop

Date: **Sunday, 24 September 2017**
Time: **08:15 - 13:30**
Venue: **Adelaide Convention Centre, City rooms 3 & 4**

The Cross-Cultural Communications and Presentation Workshop is organised for Emerging and Future Space leader Grants recipients and Next Generation Plenary speakers to provide them with the opportunity to improve their oral skills for their presentations and to sensitize them to the issues of speaking at large multi-cultural events.

Session presenters:

Scott Madry

Scott Madry is a research associate professor at the University of North Carolina at Chapel Hill and a member of the faculty of the International Space University in Strasbourg, France. He has been doing international teaching and research for some 30 years and is interested in effective international communications and presentation skills.

Carol Carnett

Carol Carnett is an attorney and a teacher of English to Speakers of Other Languages. She is Director of English Programs for the International Space University Summer Space Studies Program and Southern Hemisphere Space Studies Program, where she teaches English language skills, including writing and presentation workshops focused on effective English communication in international meetings and conferences.

6.7 IAA Academy Day

Date: **Sunday, 24 September 2017**
Time: **09:00 – 17:30**
Venue: **Adelaide Convention Centre, Panorama Room 1 & 2**

THE INTERNATIONAL ACADEMY OF ASTRONAUTICS (IAA) – IAA PLENARY SESSION - OPEN MEETING

	IAA Plenary Session - Open Meeting
09:00	Welcome address, ***Peter Jankowitsch**, IAA President*
09:05	The 2017 IAA Laurels for Team Achievement: The World's First Interplanetary Solar Sailor, IKAROS, ***Prof. Osamu Mori**, CM2, JAXA, Japan*
10:05	Introduction to China HEAD Aerospace Comp, ***Mr. Jason Zhou**, M4, Chairman of the Board*
10:30	Introduction to Aerojet Rocketdyne, ***Mr. John Schumacher**, M2, Vice President, Aerojet Rocketdyne USA*
10:55	Introduction to ChinaRS Geoinformatics Group, ***Prof. Wang Jinnian**, M1, Chairman, CEO*
11:20	Introduction to MHI Space System, ***Hidemasa Nakanishi**, Space Systems Business Development, Mitsubishi Heavy Industries, Ltd., Japan*
11:45	Planetary Defense: global cooperation is a must, ***Prof. Johann-Dietrich Woerner**, M2, Director General, ESA*
13:00	IAA Luncheon (Registration closed)
	IAA Restricted Session
13:15	29th IAA Regular Meeting (Meeting access restricted to IAA Members and Corresponding Members)
	IAA Plenary Session - Open Meeting
14:30	Study Groups Presentations Chair: ***Prof. G. Scott Hubbard**, M2, USA* **Introduction, *Mr. Anatoly Perminov,** Vice-President Scientific Programs* Study 5.13 Space Systems as Critical Infrastructure, ***Prof. Marius-Ioan Piso*** Study 1.9 Satellite remote sensing of aerosols in the Earth atmosphere, ***Prof. Yaroslav Yatskiv, Dr. Gennadi Milinevsky, Dr. Oleg Ventskovsky*** Study 3.27 Towards the utilization of the Moon, Preparing for Mars Exploration, ***Prof. Giancarlo Genta, Dr. Oleg Ventskovsky*** Study 3.29 Strategy and Feasibility Assessment of Collision Protection from Asteroid and Comet: Concept, Technology, and Prospect, ***Prof. Bao Weimin*** Study 5.14 Situation Report on Space Debris, ***Dr. Darren McKnight*** Study 5.15 Space Traffic Management Towards a Roadmap for Implementation, ***Prof. Kai-Uwe Schrogl, Ms. Jana Robinson, Mr. Alexander Soucek, Mrs. Corinne Jorgenson***
17:30	End of Session
18:30	Awards Gala Dinner & Induction Ceremony for Newly Elected (Registration closed)

6.8 8th International Meeting for Members of Parliaments (Closed Meeting)

Date: **23 September – 26 September 2017**
Venue: **Adelaide Convention Centre, Hall M, North Terrace, Adelaide**

Space entrepreneurship and socioeconomic benefits

Saturday, 23 September 2017

All day: Arrival of participants

18:30 **Welcome MOP/IPC Cocktail**
Adelaide Convention Centre, Foyer M

Sunday, 24 September 2017

09:30 **Welcome Coffee,** *Adelaide Convention Centre, Hall M*

09:55 **Group Photo**

10:00 **Welcome**
- **Hon Martin Hamilton-Smith MP,** *Minister for Defence Industries, South Australia (IAC 2017 Host)*
- **Jean-Yves Le Gall,** *President, International Astronautical Federation (IAF)*
- **Rosa Ma. Ramírez de Arellano**, *General Coordinator for International Affairs and Space Security, Mexican Space Agency (IAC 2016 Host)*
- **Martin Günthner,** *Senator of Economic Affairs, Labour and Ports / Senator for Justice and Constitution of the German State of Bremen (IAC 2018 Host)*

10:30 **Keynote 1: Space 4.0 Enabling Entrepreneurship**
- **Jan Woerner**, Director General, European Space Agency (ESA)

10:45 **Keynote 2: The role of space and the private sector in the Sustainable Development Goals**
- **Simonetta Di Pippo, Director,** United Nations Office for Outer Space Affairs (UNOOSA)

11:00 **Keynote 3: New Era for Satellite Technology**
- **Jeroen Rotteveel,** Chief Executive Officer, Innovative Solutions in Space (ISIS)

11:15 **Keynote 4: New Era for Launchers**
- **Ariane Cornell,** Head of Astronaut Strategy and Sales, Blue Origin

11:30 **Coffee break**

11:45 **Roundtable**

12:15 **Session 1: Government Policies for Space Business**
Presentations (15min) and Roundtable
- **Ken Davidian,** Director of Research, FAA Office of Commercial Space Transportation
- **Wang Dapeng,** Vice-president, China HEAD Aerospace Technology
- **Lionel Baize,** Space Exploration Manager, CNES

13:30 **Lunch**

14:30 **Keynote 5: New Era for Business Development**
- **Tytus Michalski**, Managing Partner, Fresco Venture Capital

14:45 **Session 2: Technology Transfer From and Into Space**
Part I - Presentations (20min) **and Roundtable**
- **Josef Aschbacher,** Director, Earth Observation Programmes, European Space Agency (ESA)
- **Frank Salzgeber,** Head of Technology Transfer and Business Incubation Office, European Space Agency (ESA)

Part II - Presentations (20 min)
- **Peter Nikoloff,** Executive Director, Co-Founder of Nova Group, Australia
- **Alex Grant,** Chief Executive Officer, Myriota
- **Flavia Tata Nardini,** Chief Executive Officer, Fleet Space Technologies

16:30 **Coffee break**

16:45 **Closing Session**

17:15 **Adjourn**

18:30 **IAA Cocktail and Dinner - Hall N, Adelaide Convention Centre**

Monday, 25 September 2017

08:30 – 09:00 **Welcome Coffee** – Adelaide Convention Centre

09:00 – 11:00 **IAC 2017 Opening Ceremony**

11:15 – 12:15 **Opening of the IAC 2017 Exhibition and VIP Tour**

12:15 – 13:30 **Luncheon hosted by European Space Agency (ESA) - Foyer E**

13:30 – 15:00 **Plenary Event 1: Heads of Space Agencies**

15:00 – 18:00 **Networking in IAF Members Lounge (optional) - Hall L**

18:15 – 19:30 **Plenary Event 2: Host Plenary: The Space Industry's Economic and Social Impact**

Tuesday, 26 September 2017

08:30 - 13:00 **Visit to Cleland Wildlife Park**

1 hour guided tour in 2 groups of the park including visiting the red kangaroos and Tasmanian devils, hand feeding some of the park's friendly inhabitants, including kangaroos, wallabies, emus and water birds, seeing the koalas in their enclosure and walking through one of the bird aviaries.

Free time to explore the park before returning to Adelaide

18:00 **Science briefing for MPs and Staff:**
"Space Opportunities for SA"
Old Chamber, Old Parliament House
RSVP to taylor@parliament.sa.gov.au

The planned social tour and meeting drop point in Adelaide will be at the bottom of the escalators outside the Convention Centre on North Terrace.

6.9 IAC Hosts Summit (Closed Meeting)

Date: **Sunday 24 September 2017**
Time: **09:00 – 13:00**
Venue: **Adelaide Convention Centre – Riverbank Room 3**

Time:	Programme
Opening	Welcome Address and Opening Remarks by Master of Ceremony
09:00 - 09:10	**Clay Mowry** Vice President – Global Sales, Marketing & Customer Experience, Blue Origin, United States IAF VP for Financial Matters and IAC Evolution
Session 1: **09:10 - 10:00**	**Panel: IAC Evolution** *In the frame of the IAF President's Global Innovation Agenda 2016 – 2019 and following the principles of building on our strengths and preparing the future, dedicated IAC Evolution Working Groups have been established with experienced members of the IAF community, to investigate key aspects of IAC evolution.* **Moderator:** **John Horack** *Professor and Neil Armstrong Chair, The Ohio State University,* *Special Advisor to IAF President,* *Co-Chair of the IAC Evolution Steering Group* **Panellists:** **Maria Antonietta Perino,** *Co-Chair of IAC Programme Evolution WG* **Geir Hovmork,** *Co-Chair of IAC Organisation Evolution WG* **Jan Kolar,** *Chairman of IAC Selection Evolution WG* **Clay Mowry,** *Chairman of IAC Finance Evolution WG, Co-Chair of the IAC Evolution Steering Group*
Session 2: **10:00 - 10:50**	**Panel: IAC – A Permanent Legacy** *One of the main missions of the IAC is to create and maintain a permanent legacy to strengthen and inspire the diverse space community. How to set up an efficient and forward-looking communication strategy locally and globally? What is the impact of a successful IAC for the host country and how can an IAC host capitalize on it?* **Moderator:** **Geoffrey Languedoc** *Executive Director, CASI* *LOC Chair IAC 2004 and IAC2014* **Panellists:** **Francisco Javier Mendieta,** *Director General, Mexican Space Agency; LOC IAC2016* **Brett Biddington,** *LOC IAC2017* **Peter Von Kampen,** *CFO, ZARM Drop Tower Operation and Service Company; LOC IAC2018* **Sandy Magnus,** *Executive Director, AIAA; LOC IAC2019* **Salem Al Marri,** *Assistant DG, Mohammed bin Rashid Space Center MBRSC; IAC2020 Host Candidate*
10:50 - 11:10	**Coffee break**

Session 3: **11:10 - 11:30**	**Keynote: Diversity - The Key for the IAC Success Story** *The IAC is an excellent example of the space community's commitment to diversity and engagement. It provides an inclusive, open, flexible and global platform, enriched by the backgrounds of different actors including students, YPs, academicians, HoAs, CEOs of industries, politicians, celebrities and many others.* **Keynote:** **Mary L. Snitch** *Senior Manager, Lockheed Martin Corporation* *IAF VP for Global Membership Development and Diversity Initiatives* **Discussion, Q&A**
Session 4: **11:40 - 12:30**	**How to Win a Bid?** *What are the secrets to designing a winning IAC bid? How to best convince the IAC community to choose your proposal? IAF Congress and Symposia Advisory Committee members, senior experts in hosting IACs, will give some advice.* **Moderator:** **Phillippe Willekens** *Head of Communication Department, ESA* *CSAC Chairman* **Panellists:** **Seishiro Kibe,** *Japan Aerospace Exploration Agency (JAXA)* **Geoffrey Languedoc,** *Canadian Aeronautics & Space Institute (CASI)* **Maria Antonietta Perino,** *Thales Alenia Space Italia* **Rosa María Ramirez de Arellano,** *General Coordinator for International Affairs and Space Security, Mexican Space Agency (AEM)* **Wang Yiran,** *Chinese Society of Astronautics (CSA)*
Session 5: **12:30 - 12:50**	**Keynote: Sharing Responsibilities for Organising an IAC** *What are the respective responsibilities of the IAF, the LOC and the PCO to ensure the quality and success of the congress?* **Keynote:** **Christian Feichtinger** *Executive Director, International Astronautical Federation (IAF)* **Discussion, Q&A**
12:50 - 13:00	**Closing Remarks by Master of Ceremony**
13:00 - 14:00	**Hosts Summit Lunch (Upon invitation only) - Riverbank Room 4**

6.10 New Space and Innovation (Open event)

Date: **Wednesday 27 September 2017**
Time: **14:00 - 17:00**
Venue: **Adelaide Convention Centre, Riverbank Room 6**

Airbus Defence and Space and Delta-V NewSpace Alliance have partnered up to create a New Space & Innovation Session at this year's IAC in Adelaide.

On the back of the France-Australia Roundtable on Wednesday the 27th of September @IAC2017, the session will bring together some of the best in Australian Start-ups and Innovation Scene to come and pitch what they are doing differently.

With the combination of start-ups already making waves in their respective industries and some newer start-ups yet to make their mark, the event is aimed at presenting the bright minds Australia has to offer and have them showcase their exciting ideas to all those present. So if you are interested in seeing what some of our most innovative minds have been up to, this is your chance!

The New Space and Innovation session will also feature guest speakers from Delta-V, Aerospace Valley, and Airbus, and will be a hub of new ideas and conversation between Australian and International delegations interested in the future of the Space and Spatial industry.

So come along, discover and mingle with some of the greatest potential of Australia's Space and Spatial Industry.
We are looking forward to meeting you !

Thanks to our sponsors for enabling this event.

Main sponsors:

Industry sponsors:

6.11 IISL Manfred Lachs Space Law Moot Court Competition

Date: **Thursday, 28 September 2017**
Time: **15:00-18:30**
Venue: **Federal Court of Australia, Adelaide**

26th MANFRED LACHS SPACE LAW MOOT COURT COMPETITION ORGANIZED BY THE INTERNATIONAL INSTITUTE OF SPACE LAW (IISL)

The Manfred Lachs Space Law Moot Court Competition is organised annually by the International Institute of Space Law (IISL). The first competition was organised for law students from North America by the Association of US Members of the IISL (AUSMIISL) during the first World Space Congress held in Washington, D.C., USA in 1992. One year later, the Competition was extended to include European students. In 2000, the Asia Pacific Round was added, and the African Region was inaugurated in 2011.

Preliminary competitions are held between April and June in each region. The winning teams of the regional rounds meet in the World Finals, which are held in conjunction with the annual IISL Colloquium on the Law of Outer Space. The Final Round is traditionally judged by three judges of the International Court of Justice. This unique feature makes the Manfred Lachs Moot Court one of the most prestigious moot court competitions in the world.

The competition is based on a hypothetical space law dispute before the International Court of Justice. The Problem is written by a Member of the IISL upon invitation by the Organizing Committee of the Competition, alternating between the different regions. The 2016 hypothetical Problem is entitled the "Case Concerning Space Debris, Commercial Spaceflight Services and Liability (Banché v Rastalia)." The Moot Problem presents issues relating the creation of orbital debris, emergency landing of a crewed spacecraft, and the return of personnel.

Regional Rounds must comply with the Official Rules for the Competition adopted by the IISL Board of Directors. Participating teams are required to submit a 'Memorial' as formal written arguments for both the Applicant State and the Respondent State on the legal issues of the hypothetical case.

In the regional Preliminary Rounds each team with two speakers presents Oral Arguments before panels of three judges. Memorials and Oral Arguments each carry a weight of 50% of the total score of a team. The four winning teams of the regional Preliminary Rounds move on to the Final Rounds.

The expenses of the teams taking part in the Final Rounds are borne by the Japan Aerospace Exploration Agency (JAXA), the European Centre for Space Law (ECSL), NASA, the Secure World Foundation, Obafemi Awolowo University and the South African Department of Trade and Industry. Teams are allowed to revise their Memorials before they resubmit them for the Final Rounds. A panel of judges review and grade the Memorials, and the scores are used to determine the team pairings for the semi-finals oral arguments. These oral arguments are conducted in closed sessions before three judge panels, and the two winning teams qualify for the Final.

The 26th Manfred Lachs Space Law Moot Court Competition will be held in Adelaide, Australia. The Semi-finals will be conducted in closed sessions on Tuesday, 26 September 2017. The Final is a public event and will take place on Thursday 28 September, at the Federal Court of Australia, Adelaide, before a panel of Judges of the International Court of Justice in The Hague.

Exact timings and transportation arrangements will be announced at the start of the IAC.

Contact details of the Co-Chairs of the Manfred Lachs Moot Court Committee:

Martha Mejía-Kaiser, lachsmootchair2@iislweb.org
Melissa K. Force, Esq. melissakforce@aol.com
Les Tennen, Esq. lachsmootchair1@iislweb.org

Websites:
Lachs Space Law Moot Court: http://www.iislweb.org/lachsmoot/
Facebook: Lachs Moot Court: http://www.facebook.com/spacemoot
Twitter: Lachs Moot Court: http://twitter.com/SpaceLawMoot
IISL: www.iislweb.org

6.12 16th Space Generation Congress (SGC)

Date: 21 – 23 September 2017

Venue: University of Adelaide , North Terrace Campus, Ingkarni Wardli Building, Adelaide, South Australia 2005, Australia (1.4 km from Adelaide Convention Centre, IAC venue)

Website: www.spacegeneration.org

THE GLOBAL SPACE CONGRESS FOR UNIVERSITY STUDENTS AND YOUNG PROFESSIONALS INTERESTED IN TODAY'S KEY SPACE ISSUES

SGC 2017
Adelaide, Australia

The Space Generation Congress (SGC) is the annual meeting of the Space Generation Advisory Council (SGAC) held in conjunction with the International Astronautical Congress. SGC brings together 150 of top university students and young professionals from various areas of the international sector – government, industry, and academia, who have a passion for space.

With SGC, SGAC aims to hone and promote the perspectives of tomorrow's space leaders on today's key space issues. SGC delegates also have the opportunity to meet many high-level international space leaders through networking events. SGC is proudly endorsed by the United Nations Office of Outer Space Affairs.

Aims

The aim of the SGC is threefold:

- ***First,*** to strengthen the international network of the Space Generation Advisory Council. From the perspective of the individual delegate, many of whom come from developing countries, it is a chance to interact and engage with the incoming generation of space policy professionals from all over the world. From the perspective of the Space Generation Advisory Council, it allows us to consolidate our international links in order to best represent and facilitate the voice of the next space generation.
- ***Second,*** to examine and consider key questions that are facing the space and international community at large and to provide input to international thinking from the next generation of space professionals.
- ***Third,*** to allow tomorrow's space sector leaders to grow their network within their generation and to also have the opportunity to interact with today's space leaders by way of our high-level speakers

SGC 2017 Programme – See SGC website for detailed schedule, speakers, and sessions

Thursday, 21 September

09:00 - 18:00	SGC Sessions
19:30 - 22:00	SGC International Cultural Night

Friday, 22 September

08:00 – 16:30	SGC Sessions
17:00 – 18:00	SGAC Government House Reception
18:30 – 23:00	Space Night

Saturday, 23 September

08:00 - 15:00	SGC Sessions
15:00 - 17:30	SGC Working Groups Final Presentations
19:30 - 22:00	SGC 2016 Closing Dinner

***** Note:***

All sessions require attendees to register in advance unless specified otherwise.

*"SGC Sessions" include featured speakers, Working Group time, networking opportunities***

More information at:
http://spacegeneration.org/event/sgc/space-generation-congress-2017.html

SGC GALA DINNER – Saturday, 23 September

19:30 SGC 2017 Closing Reception and Dinner *(advanced booking required)*

Address: Adelaide Town Hall
128 King William Street,
Adelaide SA 5000

Website: http://www.adelaidetownhall.com.au/
(1.0 km from Adelaide Convention Centre)

For more information on how to attend the SGC 2017 Closing Dinner, please email florian.ruhhammer@spacegeneration.org

Wrapping up three days of SGAC's 16th Space Generation Congress, the annual SGC Closing Dinner honours the extraordinary work of SGAC's volunteer members, and appreciation of the continuous support of our partners to inspire the next generation of space leaders.

SGAC would like to thank all the Sponsors and Supporters of the Space Generation Congress 2017.

SPACE GENERATION ADVISORY COUNCIL

The Space Generation Advisory Council in support of the United Nations Programme on Space Applications (SGAC) is a non-governmental, non-profit organisation, which aims to represent students and young space professionals to the United Nations, industry, agencies and academia. SGAC has permanent observer status in the UN Committee on the Peaceful Uses of Outer Space (COPUOS). SGAC has a long history, and was conceived at the Third United Nations Conference on the Exploration and Peaceful Uses of Space (UNISPACE-III) in Vienna in 1999. The SGAC Executive Council is made up of representatives from each of the six UN regions, and has a larger body of representatives from nation states. Our focus is on pragmatic space policy advice to policy makers based on the interests of students and young professionals, broadly in the age range 18-35, interested in space from around the world.

For more information, please contact:

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Florian Ruhhammer
SGC 2017 Congress Deputy Manager
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SGAC at the IAC

Sunday, 24th September 2017, 10:00 – 17:00 - SGAC Workshop on Human Space Settlement (advanced registration required)

This is a workshop proposal for the Space Generation Congress (SGC) 2017, to be held immediately prior to the International Astronautical Congress (IAC), in Adelaide, Australia. This workshop structure is based on the successful "Emerging Space Industry Leaders" (ESIL) workshop series, conducted nine times over the past six years, through the Center of Excellence for Commercial Space Transportation (COE CST), sponsored by the U.S. Federal Aviation Administration (FAA) Office of Commercial Space Transportation (AST).

In the influential game theory book, "Co-opetition" (Brandenburger and Nalebuff, 1996), the "game" of market interactions is described by the proposed PARTS model (which stands for the following model components: Players, Added value, Rules of the game, Tactics to manage perceptions, and Scope). The subject of this workshop will be focused on recent human settlement plans proposed by both the global public and private sectors. The output of the workshop will be recommendations for presentation to the U.N. COPUOS derived from the study's results and conclusions.

Sunday, 24th September 2017, 10:00 – 16:00 - Communicating Space Activities Using Visual Stories (advanced registration required)

On the Sunday prior to the 68th International Astronautical Congress (IAC), SGAC will be organizing a workshop on visual communications and storytelling as a means of communicating space activities.

The aim of the workshop is to unearth the creative potential of those active in the space industry, and familiarize space professionals with visual media tools, and different types of art that could be used to communicate ideas and concepts from the space sector to different stakeholders including the general public. This workshop also aims to bring together a network of individuals interested in art/science, communication storytelling and social engagement to help share ideas and develop new collaborations.

Tuesday, 26th September 2017, 15:30 - SGAC Booth Reception

Join SGAC, AYAA and Space Foundation for drinks at our Booth (Stand 70-71) and get acquainted with fellow SGAC members, IAC delegates, speakers and panellists.

Wednesday, 27th September 2017, 16:00 – 18:00 – SGAC Global Networking Forum: SpaceGen Entrepreneurs"

SGAC's SpaceGen Entrepreneurs will be held at Hall C of the Adelaide Convention Centre on Wednesday, 27 September at 16:00h, followed by a networking cocktail at 17:00h. SpaceGen Entrepreneurs is designed to connect entrepreneurs and potential entrepreneurs with startup veterans and Venture Capitalists, Investors, Business Angels and Business Incubators. This event is set to attract proactive and high-calibre entrepreneurs that are passionate about commercialising different aspects of the space industry and are looking to meet with mentors/VCs/Investors. The SpaceGen Entrepreneurs format is the following:

- Startup ecosystem panel (30 min): the panel will feature several prominent space entrepreneurs and investors from the space startup world sharing their experiences and tips for success.
- Entrepreneur's TED-style talk (30 min): Three inspiring entrepreneurs from all over the globe will share the personal stories behind their ventures. Learn about the challenges they overcame, their experiences in the start-up world, and how they found their path to success.
- Networking cocktail (1h): after the event there will be a networking cocktail for entrepreneurs and potential entrepreneurs to meet with investors, VC's, business incubators and members of the space startup landscape.

Thursday, 28th September 2017, 11:30 – 12:30 – SGAC Global Networking Forum: The growth challenges of space start-ups: the role of private and public investor

In recent years the number of start-ups developing new concepts and technologies in space both in upstream and downstream has been increasing. Several countries have announced incubation and acceleration programmes to support these start-ups. Investment in space companies is rising and the first specific instruments to support space ventures have been created. The participation of private investors is gaining relevance and seems to be extremely important for the consolidation of the business models of the space start-ups. The panel, consisting of space start-ups, private investors and agencies' representatives will open a discussion on the growth and consolidation challenges of these start-ups. The open dialogue will answer questions on the main issues that space start-ups identify when dealing with investors, the view of the investors on start-ups that may have a longer ROI timeline and with business models that still need to be proven, as well as the role of the public organizations to enable the growth of start-ups, among others. Join this conversation too!

On-site contact:
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The Space Generation Advisory Council in support of the United Nations Programme on Space Applications (SGAC) is a non-governmental, non-profit organisation, which aims to represent students and young space professionals to the United Nations, industry, agencies and academia. SGAC hosts conferences around the world to mobilize today's young minds on key space issues.

SGAC 2017 Space Generation Leadership Award

One of the main missions of SGAC is to facilitate access to the world's major space conferences for young professionals and students. The Space Generation Leadership Award enabling five outstanding SGAC members to attend the 16th Space Generation Congress and the 68th International Astronautical Congress in Adelaide, Australia.

Every year, SGAC receives an outstanding number of high quality applications. Congratulations to all selected awardees of the SGAC 2017 Space Generation Leadership Awards.

Carmen Victoria Felix Chaidez

Carmen is a Mexican space professional with a Master in Space Science from the International Space University (ISU) and bachelors in Electronics and Communications from ITESM. She has experience in telecommunications having worked for aT&T and Texas Instruments. She worked at NASA Ames during 2010 for the Small Satellite Division. She opened the opportunity for the first Mexican high school group to participate in the NASA Ames' STEP program, and helped Mexican Universities to create internship opportunities at NASA Ames. Carmen played an important role during the consulting forums towards the creation of the Mexican Space Agency. In 2012 joined ISU as teaching associate for the Summer Session Program in Florida. During the last years she has worked with the International Association for the Advancement of Space Safety in the Netherlands. Since 2009, Carmen has been an active member of SGAC, holding positions such as NPoC for Mexico, member of the Space Safety and Sustainability (SSS) Project Group and the organizing team for SGC 2012, and Congress Manager for the SGC 2016. Carmen has participated in five Mars Analogue Missions in the past, and was part of the SGAC Poland Mars Analogue Simulation. Carmen is a mentor in the program "STEM Niñas Pueden" from the Mexican Education Secretary and the OECD, and has been acknowledged as one of the most influential women in Mexico by Forbes magazine this year

Marta Lebron Gaset

Marta was born and raised in Barcelona. She went to Universitat Pompeu Fabra to study Translation and Interpreting. Later on, she got her Master's in Forensic Linguistics at the same university. She is currently a participant of the ISU's Space Studies Program taking place in Cork, Ireland.
Her passion for space got her to collaborate with SGAC, where she currently holds the position of Editing Team Coordinator. She is also the main organizer of SpaceUp Barcelona 2016 and usually helps with regional activities during World Space Week. She works at the Spanish aerospace company Zero 2 Infinity as Communications Manager.

Maryanne Muriuki

Maryanne Muriuki is a young professional from Kenya with a background in Disaster Management and International Diplomacy. Within the East African region, she works for ILICIT Africa as the Disaster Management officer. Currently, she is volunteering in various SGAC positions, including serving as the co-NPoC Kenya and as a Communications Coordinator for SGC 2017. She is also involved as the Deputy Event Manager for the first African Space Generation Workshop, AFSGW.
Recently, I have joined the STDM Project Group of SGAC as the Project co-Lead.

Shreya Santra

Shreya Santra, from India, is currently a graduate research scholar (MS) in Space Systems and Robotics at Skolkovo Institute of Science and Technology, Moscow. She pursued her Masters in Space Studies (MSS15) from International Space University, France, where she was introduced to the interdisciplinary aspect of space that enriched her with diverse ideas and inspired to follow her passion by collaborating with people from around the world. Her aim is to explore and innovate towards the development of future robotic applications for space. She is a SGAC Web Editor and manages the country and regional webpages. She is also an active member of the AP-SGW 2017 Organizing Team and Small Satellite Project Group. She is involved in various space outreach activities, and organized the first ever SpaceUp in Russia in April 2017 (SpaceUp Skoltech). Shreya loves to dance and sketch in her leisure time.

Olga Stelmakh

Dr. Olga Stelmakh is the Director of Business Development and International Affairs at the International Institute of Space Commerce, and the Global Partnership Manager for the World Space Week Association. Olga has an extensive background in space matters, having worked in the space sector for over 14 years, including seven years of governmental and parliamentarian engagement. Prior to her present role, she worked with McGill Institute of Air and Space Law, George Washington University's Space Policy Institute, the Parliament of Ukraine, German Aerospace Center, Ukrainian Space Agency, and European Space Agency. Cosmopolitan lawyer with strong business background and fluency in 5 languages, she has worked both nationally and internationally, combining public service with academic work and legal practice.
Academically, the Paris-11 Institute of Space and Telecommunication Law and International Space University alumna, Olga holds a Doctorate in International Law specializing in Space Security, two LLM degrees and two Master degrees in Business.
In 2013, she was honoured with the IAF Emerging Space Leaders recognition award, and in 2015, 2016 and 2017 she was a judge of the regional rounds of the Manfred Lachs Moot Court Competition. She currently heads the Election Committee of the International Institute of Space Law.

7 Awards 2017

7.1 IAF Awards 2017

7.1.1 IAF World Space Award

The IAF World Space Award is the IAF most prestigious award. It is presented for exceptional impact to the world's progress in space.

2017 Awardee

Maj. Gen. Charles Frank Bolden, Jr

Maj. Gen. Charles Frank Bolden, Jr., (USMC-Ret.) was nominated by President Barack Obama and confirmed by the U.S. Senate as the 12th Administrator of the National Aeronautics and Space Administration. He began his duties as head of the agency on July 17, 2009. As Administrator, Bolden leads a nationwide NASA team to advance the missions and goals of the U.S. space program. At NASA, Bolden has overseen the safe transition from 30 years of space shuttle missions to a new era of exploration focused on full utilization of the International Space Station and space and aeronautics technology development. He has led the agency in developing a Space Launch System rocket and Orion spacecraft that will carry astronauts to deep space destinations, such as an asteroid and Mars. He also established a new Space Technology Mission Directorate to develop cutting-edge technologies for the missions of tomorrow. During Bolden's tenure, the agency's support of commercial space transportation systems for reaching low-Earth orbit have enabled successful commercial cargo resupply of the space station and significant progress toward returning the capability for American companies to launch astronauts from American soil by 2017. Bolden has also supported NASA's contributions toward development of developing cleaner, faster, and quieter airplanes. The agency's dynamic science activities under Bolden include an unprecedented landing on Mars with the Curiosity rover, launch of a spacecraft to Jupiter, enhancing the nation's fleet of Earth-observing satellites, and continued progress toward the 2018 launch of the James Webb Space Telescope, the successor to the Hubble Space Telescope.

Bolden's 34-year career with the Marine Corps also included 14 years as a member of NASA's Astronaut Office. After joining the office in 1980, he traveled to orbit four times aboard the space shuttle between 1986 and 1994, commanding two of the missions and piloting two others. His flights included deployment of the Hubble Space Telescope and the first joint U.S.-Russian shuttle mission, which featured a cosmonaut as a member of his crew.

Prior to his nomination as NASA administrator, Bolden was Chief Executive Officer of JACKandPANTHER LLC, a small business enterprise providing leadership, military, and aerospace consulting, as well as motivational speaking.

Born Aug. 19, 1946, in Columbia, S.C., Bolden graduated from C. A. Johnson High School in 1964 and received an appointment to the U.S. Naval Academy. He earned a Bachelor of Science degree in electrical science in 1968 and was commissioned as a second lieutenant in the Marine Corps. After completing flight training in 1970, he became a Naval Aviator. Bolden flew more than 100 combat missions in North and South Vietnam, Laos, and Cambodia, while stationed in Namphong, Thailand between 1972 – 1973.

Bolden earned a Master of Science degree in systems management from the University of Southern California in 1977. In 1978, he was assigned to the Naval Test Pilot School at Patuxent River, Md., and completed his training in 1979. While working at the Naval Air Test Center's Systems Engineering and Strike Aircraft Test Directorates, he tested a variety of ground attack aircraft until his selection as an astronaut candidate in 1980.

Bolden's NASA astronaut career included technical assignments as the Astronaut Office Safety Officer; Technical Assistant to the Director of Flight Crew Operations; Special Assistant to the Director of the Johnson Space Center in Houston; Chief of the Safety Division at Johnson (where he oversaw efforts to return the shuttle to flight safely after the 1986 Challenger accident); lead astronaut for vehicle test and checkout at the Kennedy Space Center in Florida; and Assistant Deputy Administrator at NASA Headquarters. After his final shuttle flight in 1994, he left NASA and returned to active duty with Marine Corps operating forces as the Deputy Commandant of Midshipmen at the U.S. Naval Academy.

In 1997, Bolden was assigned as the Deputy Commanding General of the 1st Marine Expeditionary Force in the Pacific. During the first half of 1998, he served as Commanding General of the 1st Marine Expeditionary Force Forward in support of Operation Desert Thunder in Kuwait. He was promoted to his final rank of major general in July 1998 and named Deputy Commander of U.S. forces in Japan. He later served as the Commanding General of the 3rd Marine Aircraft Wing at Marine Corps Air Station Miramar in San Diego, Calif., from 2000 – 2002. He retired from the Marine Corps in 2003. Bolden's many military decorations include the Defense Superior Service Medal and the Distinguished Flying Cross. He was inducted into the U.S. Astronaut Hall of Fame in May 2006.

7.1.2 IAF Allan D. Emil Memorial Award

Allan D. Emil (1898 – 1976) was a noted U.S. lawyer and philanthropist who became one of the foremost lawyers in the field of flight, and was appointed counsel to the Institute of the Aeronautical Sciences. Since 1977, the IAF's Allan D. Emil Memorial Award has been presented annually for an outstanding contribution to space science, space technology, space medicine or space law. This contribution either involved the participation of more than one nation or furthered the possibility of greater international cooperation in astronautics.

The recipient of this year's award is Dr. LEI Fanpei.

Allan D. Emil
(1898 – 1976)

2017 Awardee
LEI Fanpei

Dr. LEI Fanpei is the Chairman of China Aerospace Science and Technology Corporation (CASC), the President of of Executive Council of Chinese Society of Astronautics (CSA), Co-Chairs of 2017 Global Space Exploration Conference (GLEX2017), Chairman of the Steering Committee of the IAA Studies Center (China), Commander-in-Chief of China's New-Generation Launch Vehicle Program, Deputy Commander-in-Chief of China's Manned Space Program, Deputy Commander-in-Chief of China's Lunar Exploration Program, Deputy Commander-in-Chief of China's First Mars Exploration Mission, Commander-in-Chief of China's Hard X Ray Telescope Satellite Program.

Dr. LEI Fanpei attaches great importance to international cooperation and vigorously promotes the international development of China's space industry. With his great efforts, CASC has established extensive relations with a large number of space enterprises, governmental agencies, academic institutions and international organizations, and has built strategic partnership of mutual benefit with many of them. Under his leadership, CASC positively integrates itself into the international commercial space activities and provides in-orbit satellite delivery and commercial launch services for the international users; helps the developing countries realize sustainable development by using of space technology; substantially participates in and supports the activities of the international space organizations by fully making use of their roles and strengthening international exchanges and cooperation, thus promoting the progress of space technology and its applications and bring benefits to more people.

Under his leadership, CASC has successfully implemented many international cooperation programs, such as the China-Brazil Earth Resources Satellite Program, Sino-French Ocean Satellite Program, China-Italy Electromagnetic Satellite Program for the purpose of peaceful utilization and exploration of the outer space resources. CASC also actively participates in the intergovernmental multilateral cooperation,such as activities of UNCOPUOS, BRICs remote sensing satellite constellation program, the International Charter on Space and Major Disasters (CHARTER) and Inter-Agency Space Debris Coordination Committee (IADC).

Up to now, CASC has completed 54 commercial launch services for customers in more than 20 countries and regions, exported 11 satellites to and provided 12 Piggyback launch services for 9 countries .

Under Dr. LEI' Fanpei's leadership, CASC has always paid attention to the cooperation with developing countries by maintaining friendly relations and cooperation with space agencies of Brazil, Pakistan, Nigeria, Bolivia, Venezuela and Laos. CASC has actively carried out technical transfer, joint development, personnel training and formulation of strategic planning of space development. CASC has trained more 600 space professionals for over 30 countries and helped partners to set up their own space system. The China-Brazil CBERS program is known as the "South and South Cooperation Model" which not only supports the the economic construction and social development of the two countries, but also realizes the free data delivery to the regions of South Africa and Southeast Asia.

Dr. LEI Fanpei actively supports CASC participate in the activities of International Astronautical Federation (IAF), International Academy of Astronautics (IAA) and other important international organizations, and experts of CASC to hold positions in these organizations. As the President of of Executive Council of CSA, Dr. LEI positively promotes and supports CSA to be deeply involved in the acclivities of IAF. Such as, during the 67th International Astronautical Conference, CSA's application for establishing the IAF Small Satellite Commercial Application Selected Committee was approved by the Bureau and the General Assembly. It is the first IAF committee which is initiated by China. At present, CSA and IAF are preparing the 2017 Global Space Exploration Conference which will be held in June in Beijing. CSA is planning to organize a delegation of China's space professionals and a delegation of China's major space companies to attend to the academic meetings and exhibition of the 68th IAC.

As the Chairman of the Steering Committee of the IAA Studies Center (China), Dr. LEI Fanpei actively promotes relevant activities. in 2016, CSA and IAA jointly held the Symposium on Space International Cooperation Promoting Economic and Social Development of Developing Country. 12 representatives from governmental organizations, enterprises, and international organizations were invited to deliver keynote speeches introducing how international cooperation promoting the economic and social development of their own countries and making proposals for the field and methods of future cooperation. The symposium has produced good results.

7.1.3 IAF Frank J. Malina Astronautics Medal

Since 1986, the IAF's Frank J. Malina Astronautics Medal has been presented annually to an educator who has demonstrated excellence in taking the fullest advantage of the resources available to them to promote the study of astronautics and related space sciences. The International Astronautical Federation is delighted to announce that the winner of the 2016 Malina Medal is Prof. Bénédicte Escudier.

The recipient of this year's award is Lynn Cominsky.

Frank J. Malina
(1912 – 1981)

2017 Awardee
Lynn Cominsky

Lynn Cominsky is the Chair of the Physics and Astronomy Department at Sonoma State University (SSU) and the founder and director of SSU's Education and Public Outreach Group. She is an author on over 150 research papers in refereed journals, and the Principal Investigator on over $22 million of grants to SSU. Funded by NASA, NSF and the US Department of Education, Cominsky and her group excel at the development of interactive web-based and hands-on STEM activities for students in grades 5-14. Current projects include the 'Learning by Making' STEM curriculum being piloted by six rural, high-needs high schools in Mendocino County, 'Rising Data: A Flight Project Curriculum for Community College Students" in which students are using rockets and drones to take scientific data with custom-built payloads, and "EdgeCube: A 1U Global Climate Monitor" which is the second

CubeSat to be built by SSU students. In the past, she has served as the scientific director for the PBS NOVA television program "Monster of the Milky Way" and accompanying planetarium show "Black Holes: The Other Side of Infinity." In 1993, Prof. Cominsky was named SSU's Outstanding Professor, and the California Professor of the Year by the Council for the Advancement and Support of Education. In 2007, she was named a Fellow of the California Council on Science and Technology, in 2009, a Fellow of the American Physical Society and in 2013, a Fellow of the American Association for the Advancement of Science. Other recent awards include the 2014 Aerospace Awareness award from the Women in Aerospace organization, the 2015 Sally Ride Education Award from the American Astronautical Society, the 2016 Education Prize from the American Astronomical Society and the 2016 Wang Family Excellence Award from the California State University..

7.1.4 IAF "Excellence in 3G Diversity" Award

This “IAF Excellence in 3G Diversity” Award is intended to recognize IAF member organisations (industry, government, academia) worldwide for outstanding contributions to the fostering of “3G” (Geography, Generation, Gender) Diversity within the space sector. It is an annual award presented at the IAC, but is given only when nominations of exceptional merit are received.

For its exceptional engagement towards diversity, the IAF is proud to present the very first IAF Excellence in 3G Diversity Award to :

Mohammed Bin Rashid Space Centre – MBRSC

The award will be presented during the 68th International Astronautical Congress (IAC) in Adelaide, Australia during the IDEA luncheon.

Mohammed bin Rashid Space Centre (MBRSC) was created and established by the Dubai Government in 2015.
The Centre is integral to the strategic initiative put in place by the government to inspire scientific innovation, technological advancement, and to advance sustainable development in Dubai and the wider UAE.

The Crentre is comprised of a team of leading UAE engineers, analysts and experts all working towards positioning the UAE as an internationally renowned leader within the field of science and technology. By developing new technology, expertise, and intellectual property, it is hoped that the UAE can emerge as a global front runner within the industry.

By utilising Knowledge Transfer, the Mohammed bin Rashid Space Centre mission is reinforced, and vital advancements and information is made available to future generations within the organisation. The Centre’s research and development facilities based in Dubai will enable its team to work independently in order to achieve the institution’s goal of building a sustainable knowledge economy, set to help drive the UAE forward for decades to come.

Mohammed bin Rashid Space Centre has already accomplished a number of significant achievements, most notably the launches of DubaiSat 1 and DubaiSat 2 – both which continue to orbit the planet capturing stunning imagery beamed back to our headquarters.

With the ongoing preparations for the launch of the KhalifaSat in 2017, and the recount announcement by His Highness Shaikh Mohammad Bin Rashid Al Maktoum for the upcoming unmanned Mars probe currently in the planning stages, the mission is only just getting started.

7.1.5 IAF Hall of Fame

The IAF Hall of Fame is intended to create a standing forum of personalities that have contributed substantially to the progress of space science, technology, and space benefits to mankind, within the framework of the IAF activities. It will consist of a permanent gallery of these personalities, including a citation, biographical information, and a picture, in a special part of the IAF web presence.

The recipients of this year's awards are Berndt Feuerbacher, Richard L. “Dick“ Kline, Stanislav Konyukhov and Robert Briskman.

2017 Awardee
Robert Briskman

Mr. Briskman received his Bachelor of Science degree from Princeton University and a Master of Science in Electrical Engineering from the University of Maryland. He has been involved with the implementation of satellite communications systems since their inception. Mr. Briskman is currently President of Telecommunications Engineering Consultants. Previously, he co-founded Sirius Satellite Radio in 1991 serving as Executive Vice President, Engineering, where he was responsible for the implementation of its satellite radio broadcasting system to mobile subscribers in the United States, and then served as Technical Executive of Sirius XM Radio.
Mr. Briskman was employed by the Geostar Corporation from 1986 to 1990 where he was Senior Vice President, Engineering. Mr. Briskman was with COMSAT from 1964 through 1985 where he last was responsible for providing technical services in the areas of satellites, earth stations and telecommunications systems. He was Vice President, System Implementation of COMSAT General Corporation. Prior to joining COMSAT, Mr. Briskman was Chief of Program Support for the Office of Tracking and Data Acquisition at NASA and received the APOLLO Achievement Award from NASA. He worked for the Army Security Agency and IBM before NASA.

Mr. Briskman is a Fellow and past Director, Vice President for Technical Activities and Secretary-Treasurer of the IEEE, which gave him the 2008 IEEE AESS Pioneer Award, a Fellow of the AIAA, which gave him the 2007 Aerospace Communications Award and a Member of the National Academy of Engineering. He has authored over seventy technical papers, holds many United States and foreign patents and has been inducted into the SSPI, the CEA Consumer Electronics, and the Space Foundation Halls of Fame and the University of Maryland Innovation Hall of Fame. Mr. Briskman was a former President of the North American Broadcasters Association’s Board of Directors.

2017 Awardee
Berndt Feuerbacher

Berndt Feuerbacher was born in 1940 in Dresden, Germany. He completed his academic education at the Ludwig Maximilian University of Munich. He was appointed at the European Space Agency in the Space Science Department at ESTEC in Noordwijk, Netherlands.

His past activities include: Principal Investigator for laboratory experiments on lunar surface materials from the Apollo flights; project scientist for various science missions, including the International Ultraviolet Explorer satellite and the First Spacelab Payload.

In 1981 he was appointed Chair of Space Physics at the University of Bochum in Germany, and simultaneously Director of the Institute of Space Simulation at the German Aerospace Center (DLR) in Cologne.

After German reunification in 1990, he supported the integration of the former Institute of Cosmic Research of the Academy of Science of the German Democratic Republic, founding two new DLR Institutes in Adlershof, Berlin.

His main research activities concentrated on materials science and solid state physics using microgravity conditions. He contributed to progress in the understanding of the interaction of dust and grain particles with neutral and plasma environments in space and on Earth, and was active in research on comets and small bodies in planetary systems.

In this context he was involved in numerous space missions like TEXUS, Spacelab1, D1, D2, Eureca, Mir and MSL as well as in instrumental developments and ground operation systems. He initiated the design and construction of a landing probe called “Philae” for the ESA Rosetta mission, which has landed on comet Churyumov-Gerasimenko in 2014.
His scientific results have been published in more than 180 journal papers, 12 books, and led to eight patents. After his retirement in 2006, Berndt Feuerbacher was appointed founding director of the new DLR Institute of Space Systems in Bremen.

Berndt Feuerbacher advised ESA, NASA and the German space agency in various functions. He is active in learned societies such as the European Physical Society, DGLR, COSPAR, ELGRA, ESSC and others where he is a member, a board or council member. He was elected full member of the IAA in 1986.

He has been active in the IAF as committee member since 1982 and served as IPC Co-Chairman in 2001 (Toulouse), 2002 (Houston) and 2003 (Bremen). He was elected Vice-President of IAF in 2006 before taking up his post as President (2008-2012).

2017 Awardee
Richard L. "Dick" Kline

Dick Kline received his BSME from Yale University and MSME from Princeton University. He joined Grumman Aerospace in June 1956 in the Thermodynamics Department.

He was designated Apollo Lunar Module Thermal Shield Program Manager starting in 1966. He and his team developed a Thermophysics Laboratory where radiative properties of materials were determined under vacuum conditions. He then served as Grumman Technical Manager for the Lunar Module LTA-8 Manned System Test Program, managing all technical elements of this full-scale test campaign conducted at the NASA Manned Spacecraft Center at Houston, Texas. Two astronauts operated the Lunar Module in the 26 ft. vacuum chamber facility. The test objectives validated the flight profiles showing that the LM would perform properly in orbit. He received the NASA Astronaut's Silver Snoopy Award "for Professional Excellence as Technical Director".

He was later appointed Program Vice President, Grumman Space Division, with responsibility for civilian programs. He led cutting-edge technology developments encompassing, satellite servicing, EVA, telepresence and payload handling topics. He proposed that Grumman bid for NASA's Space Station Program Support contract. This was a win and he helped establish a new Grumman division.

He served as Vice President and Deputy Director of the new Grumman Space Station Program Support Division, headquartered in Reston, Virginia, with operations at five NASA Centers (790 employees). He championed a short module concept, Integrated Truss concept and restructuring to reduce program costs by $6B. These proposals were baselined. His team received NASA Headquarter's Special Service Group Award "for Contribution to the Restructuring Design of Space Station Freedom".

After joining NASA In 1992 he directed a National Facilities Study to formulate a coordinated National Plan for World-class aeronautics and space facilities. It included review of over 1800 NASA, DoD, & DOE facilities. An unclassified facility inventory was placed on the Web for public use. All of his team's 91 recommendations were accepted or accepted with modification. He was commended by U.S. Vice President Al Gore as part of reinventing government and received NASA's Exceptional Achievement Medal for leadership.

He has been an active IAF participant since 1977, contributing as Co-Chair of the World Space Congress Technical Program Committee; Chairman, Congress Committee; and Co-Chair, International Program Committees over more than nine years.

He was appointed Affiliate Professor at George Mason University (GMU), and served for eighteen years on GMU's School of Computational Sciences and Informatics Advisory Board, including four years as Chair.

He received the IAF Alan D. Emil Award, IAA Space Sciences Award, AAS Lovelace Award "for outstanding contributions to Space Science & Technology", AIAA Medal for International Cooperation and their von Braun Space Management Medal. He received the "Yale Science & Engineering Award for Distinguished Service to Industry, Commerce or Education".

Dick is a past IAA Trustee and Scientific Activities Committee Vice-Chair. He was elected Fellow, and Director of the AIAA; and Fellow and Director of the American Astronautical Society.

2017 Awardee
Stanislav Konyukhov
1937-06-12 – 2011-04-03

An outstanding scientist and designer in the field of space rocket engineering. A General Designer – General Director of Yuzhnoye SDO in 1991-2010. Doctor of Engineering (1987), Professor (1991), Academician of National Academy of Sciences of Ukraine (1992), Academician of International Engineering Academy (1992), Academician of K.E. Tsiolkovsky Academy of Cosmonautics (1994), Academician of New York Academy of Sciences (1996), Academician of International Academy of Astronautics (1997),

Academician of Academy of Military Sciences of Russian Federation (2004), Vice President of International Academy of Astronautics (2005).

Stanislav Konyukhov was born in the village of Bekrenevo, Vologda region, Russia. After he had graduated from Physical Engineering Department of Dniepropetrovsk State University (1959), he worked at Yuzhnoye SDO as engineer, senior engineer (1959-1962), leading engineer, leading design engineer (1962-1964), chief of section (1964-1974), chief of department, deputy chief design engineer (1974-1978), complex supervisor, deputy chief of complex (1978-1984), Director and Chief Design Engineer of the Space Vehicles Design Office (1984-1986), First Deputy General Design Engineer of the Yuzhnoye NVO, First Deputy Director of the Yuzhnoye SDO (1986-1991), General Designer – General Director of Yuzhnoye SDO (1991-2010).

Konyukhov is one of the talented followers of M.K. Yangel and V.F. Utkin who passed a great school of developing, designing, development and flight testing of missile and space rocket systems. He made significant contribution in the development and building of several generations of strategic missile systems, launch vehicles and spacecraft created in Yuzhnoye SDO, including one of the most powerful and effective liquid-propellant strategic missiles R36M (SS-18), solid-propellant missile RT23 (SS-24) of silo and railroad basing mode. He justified and developed the principles of developing, designing and development testing of pop-up launch scheme for liquid-propellant heavy missiles, which considerably improved the performance of missile systems put in Strategic Missile Forces service. He supervised the works on designer's supervision and considerable prolongation of guaranteed service life of R36M (SS-18) missile being in the Russian Army inventory.

Substantially, due to S. Konyukhov's initiative and energy, Yuzhnoye SDO entered the world space services market and occupied a deserved place there. He supervised the works on creation of unique Sea Launch and Land Launch space rocket systems with Zenit launch vehicles, Dnepr space launcher derived from decommissioned SS-18 missile, light-class Vega space launcher, on creation and commercial use of Cyclone-4 space launch system, and AUOS-CM-KI, Sich-1, Ocean, Sich-2 spacecraft et al.

Konyukhov holds an outstanding position among the pioneers – organizers of extensive international cooperation in space exploration. Owing to the international activities of Yuzhnoye SDO, Yuzhmash, Ukraine is included in the ten world ' s leading space powers and participates in the implementation of major international space projects like Sea Launch, Land Launch, Dnepr, Cyclone-4, Egyptsat, Vega et al.

Stanislav Nikolayevich Konyukhov gave much consideration to training of engineering and scientific manpower. He held a Chair of System Design at the Institute of Professional Development of the USSR Ministry of General Machine – Building (1987-1992), Chair of Flying Vehicles Designing at Kharkov Aviation Institute (1995). A Chief Editor of industry scientific – technical collection (1991), a member of Specialized Board of Dniepropetrovsk National University for dissertations defense (1988), a member of Experts Board of Supreme Certification Commission of Ukraine (1992), a member of Section of Interindustry Scientific-Technical Council for Space Research of Russian Academy of Sciences.

7.1.6 IAF Interactive Presentations Competition Award

To be announced on Thursday 28 September at 12:45 during the IP Award Ceremony

Location: Adelaide Convention Centre - Halls J & K2

7.1.7 IAF Luigi G. Napolitano Award

The IAF Luigi G. Napolitano Award is presented annually by the Space Education and Outreach Committee (SEOC) of the International Astronautical Federation to a young scientist, below 30 years of age, who has contributed significantly to the advancement of the aerospace science and has given a paper at the International Astronautical Congress on the contribution. The Luigi G. Napolitano Award will be given during the closing ceremony on Friday 29 September 2017 of the 68th IAC and the recipient will be invited to participate in the gala dinner of the IAC. The award was donated by the Napolitano family and consists of the Napolitano commemorative medal and a certificate of citation. The Luigi Gerardo Napolitano Society sponsors this annual award.

7.2 IISL Awards 2017

7.2.1 IISL Lifetime Achievement Award

Andrei Terekhov

In recognition of his scholarly writings, long time productive work for the development of space law in the UN system and constant help to the International Institute of Space Law.

7.2.2 IISL Distinguished Service Award

Ranjana Kaul

Seminal role in increasing the membership of IISL as chair of Membership committee, support for Manfred Lachs Space Law Moot Court competitions particularly in the Asia Pacific region; roles for IISL colloquia, IAA/IISL conferences in India and championing national space law awareness in India.

Niklas Hedman

Chief of the Committee, Policy and Legal Affairs Section, Office for Outer Space Affairs, United Nations Office at Vienna; Initiative for 'Committee of Educators' within the LSC.; distinguished service to COPUOS, and capacity building across the globe in space law development; regional workshop contributions.

7.2.3 IISL Award of Appreciation

Michael Davis

Outstanding Space law educator and multi-faceted role at the ISU; Role in development of Southern Hemisphere ISU Summer Space Program, and Chair of the Space Industry Association of Australia (SIAA) and Chair of the LOC for the Adelaide IAC.

7.2.4 IISL Certificate of Gratitude (joint award)

European Centre for Space Law (ECSL) and the European Space Agency (ESA) (two recipients for the one award)

Long standing support continuing efforts to organise the European Regional Round of the Manfred Lachs Space Law Moot Court Competition and many other activities related to space law and policy

7.2.5 Diederiks-Verschoor Award for Best Paper by a Young Author

To be announced

8 Exhibition

8.1 General Information

Stand Set-up: *Delivery of Exhibits and Stand Construction*

• September 23 (Saturday)	08:00 - 18:00
• September 24 (Sunday)	08:00 - 18:00

Ribbon-cutting ceremony and VIP Exhibition Tour:

• September 25 (Monday)	10:45 - 11:45

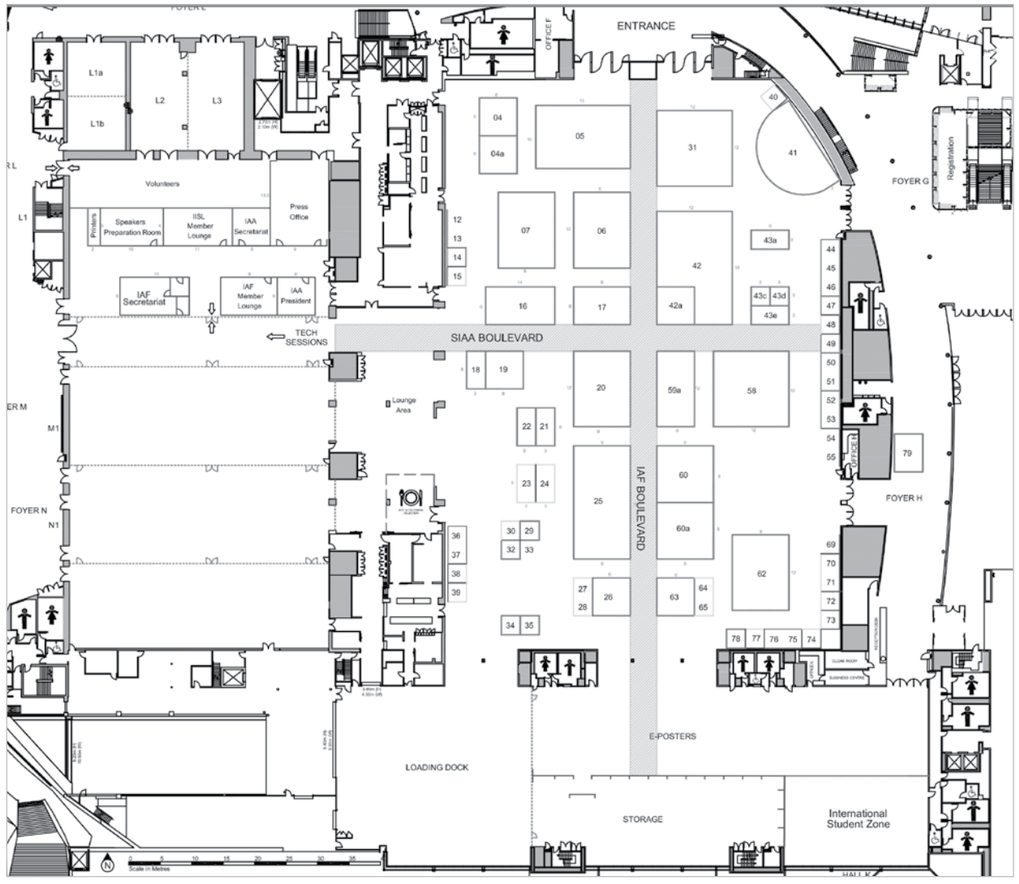
Exhibition Hours:

• September 25 (Monday)	11:45 - 18:30
• September 26 (Tuesday)	09:00 - 18:00
• September 27 (Wednesday)	09:00 - 18:00
• September 28 (Thursday)	09:00 - 18:00
• September 29 (Friday)	09:00 - 13:00

Stand Dismantling:

• September 29 (Friday)	13:00 - 22:00

8.2 Exhibition Area Layout



8.3 Exhibitor List in Alphabetical Order

Exhibitors	Stand
3D Plus	39
ACT Government	7
Aerospace Maritime and Defence Foundation of Australia	75 and 76
Agenzia Spaziale Italiana	59a
Airbus Defence and Space	19
American institute of Aeronautics and Astronautics	44
Ariane Group	18
Asia-Pacific Space Cooperation Organization (APSCO)	54 and 55
ATF Press Ltd	40
Australian Youth Aerospace Association	70
Beijing SunWise Space Technology Ltd	78
Bremeninvest	42a
Centre National D'Etudes Spatiales (CNES)	17
Chinese Society of Astronautics	25
COSPAR Assembly	74
CSIRO	41
D Orbit	43d
Department of Industry, Innovation and Science	31
Emerging Countries	34a and 35a
German Aerospace Center (DLR)	42
Gistda	36 and 37
Group of Astrodynamics for the Use of Space Systems (GAUSS)	30
Innovative Solutions In Space (ISIS)	14
ISRO	27
ISU	48
Japan Aerospace Exploration Agency (JAXA)	26
Korea Aerospace reserch Institute	20
L3 Technologies	21
Lockheed Martin	5
Majestic Opals	29
Mohammed Bin Rashid Space Centre (MBRSC)	60
Multisoft	32
NanoRacks	15
New Zealand Space Agency (MBIE)	63
Nova Group	43e
Rafael	50
Rocket Lab	43a
Romanian Space Agency	73
Shaanxi Engineering Laboratory for Microsatellite Northwestern polytechnical University	33
Sierra Nevada Corporation's Space Systems	12 and 13
SITAEL	22
Sky and Space Global	16
South Australian Government	6
Space Agencies and Space Offices (NSPO)	34
Space Flight Laboratory (sfl)	69
Space Generation Advisory Council (SGAC)	71
Spacety co. Ltd	4a
Springer	77
Surrey Satellite Technology Limited	4
Swedish Space Corporation	52
Syrlinks	35
Technische Universität Berlin	47
The Australian Opal & Diamond Collection	38
The Boeing Company	58
The Department of Trade and Industry	62
UAE Space Agency	60a
United Nations Office for Outer Space Affairs (UNOOSA)	23
University of South Australia	49
University of Sydney	64
University of Wurzburg	72
Western University	43c

8.4 Exhibitor List

Stand: **39**	**3D PLUS**

Onsite Contacts:
Vinh-Phong LAM, Area sales manager — **Tel:** +33 (0)1 30 83 96 48, **Email:** vplam@3d-plus.com
Pierre-Eric BERTHET, Director Marketing and Sales — **Tel:** +33 (0)1 30 83 26 58, **Email:** peberthet@3d-plus.com

3D PLUS is the world leader in the design and manufacturing of high-performance radiation tolerant and high reliability components miniaturized with its unique 3D vertical interconnect technology.

3D PLUS offers a wide range of catalog radiation tolerant products including Memory and Radiation Intelligent Memory Controller IPs, Interfaces, POL converters, Peripherals and Radiation Protection ICs and Space Camera Heads.
Custom System-In-Package (SiP) solutions are also available for customers who want to shrink their design thanks to our State-of-the Art stacking technology and recognized design, manufacturing and test expertise.

With more than 110,000 modules into space early 2017, 3D PLUS provides the global space industry stakeholders for over 20 years for telecommunications applications, observation earth, navigation, launchers and human spaceflights, science missions and constellations.

Stand: **7**	**ACT Government**

Onsite Contact:
Ilsa Embleton — **Tel:** 0481 917 048, **Web:** www.act.gov.au/space

Canberra is a city with bright minds and brilliant possibilities. For over 50 years, Canberra has been Australia's space capital, leading the nation's space industry with its infrastructure, businesses, research and training for commercial, military and civil space applications.

The Canberra Region's space and spatial capabilities are in research and development, space systems, launch activities, ground systems, space enabled services including satellite communications, earth observation and positional navigation and timing, spatial technology, support services and education and training.

The industry collaborates with military, telecommunication organisations, major space contractors, two ACT world-leading universities, NASA research activities, and international space agencies and researchers.
Team Canberra's presence at this year's IAC includes the Australian National University (ANU), University of New South Wales Canberra (UNSW Canberra), EOS Space Systems, Geospatial Intelligence, Northrop Grumman and the ACT Government.

Don't miss the chance to come and meet the team and discuss how you can be a part of our uniquely positioned city in which business leaders, courageous entrepreneurs and pioneering companies can thrive and grow.
www.act.gov.au/space #WeAreCBR

Stand: **75 & 76**	**Aerospace Maritime and Defence Foundation of Australia**

Onsite Contact:
Rodd Craig, Executive Manager Product Development — **Tel:** +61 3 5282 0500, **Mobile:** +61 0 457 848 104, **Email:** rcraig@amada.com.au, **Web:** www.airshow.com.au

The Aerospace Maritime and Defence Foundation of Australia, is not for profit foundation with a mission to promote aviation and the development of Australia's industrial, manufacturing and information/communications technology resources in aviation, aerospace and defence. The group produces the Australian International Airshow and Defence Industry Exposition at Avalon every two years with the next event 26 February to 3 March 2019.

Its corporate affiliates conduct the biennial Pacific International Maritime Exposition, the biennial Land Forces Exposition and the biennial CivSec Congress and Exposition plus the RotorTech Conference and Exhibition. Other activities of the group include careers information programs for young people and support for conferences and forums advancing technology and promoting industry development.

The 2019 Australian International Airshow will feature a Space Technology Showcase and a supporting Space Industry Forum.

Stand: **59A**	**Agenzia Spaziale Italiana**

The Italian Space Agency, created in 1988, coordinates Italy's efforts in Space. ASI activities range from space science to earth observation, telecommunications and navigation, launchers development. Italy is the third contributor to the European Space Agency, and participates in many major scientific missions as well as in the construction and activities of the International Space Station. ASI has developed COSMO-SkyMed, a space based radar system for Earth observation.
L'Agenzia Spaziale Italiana è nata nel 1988, per dare un coordinamento unico agli sforzi e agli investimenti che l'Italia ha dedicato al settore spazio fin dagli anni Sessanta.

Stand: **19**	**Airbus Defence and Space**

Onsite Contact:
Patrick Eisend — **Mobile:** +49 (0) 151 62920163, **Email:** patrick.eisend@airbus.com

Airbus is a global leader in aeronautics, space and related services. In 2015, it generated revenues of €64.5 billion and employed a workforce of around 136,600. Airbus offers the most comprehensive range of passenger airliners from 100 to more than 600 seats. Airbus is also a European leader providing tanker, combat, transport and mission aircraft, as well as Europe's number one space enterprise and the world's second largest space business. In helicopters, Airbus provides the most efficient civil and military rotorcraft solutions worldwide.

Stand: 44	**American Institute of Aeronautics and Astronautics**

Onsite Contacts:
Madi Sengupta — **Tel:** +1.571.992.5318, **Email:** madis@aiaa.org
Rodger Williams — **Tel:** +1.703.963.1195, **Email:** rodgerw@aiaa.org, **Web:** www.aiaa.org

The American Institute of Aeronautics and Astronautics (AIAA) is more than 30,000 engineers and scientists from 88 countries dedicated to the global aerospace profession. AIAA convenes five yearly forums; publishes books, technical journals, and Aerospace America; hosts a collection of 140,000 technical papers; develops and maintains standards; honors and celebrates achievement; and advocates on policy issues. AIAA serves aerospace professionals around the world—who are shaping the future of aerospace—by providing the tools, insights, and collaborative exchanges to advance the state of the art in engineering and science for aviation, space, and defense.
Visit www.aiaa.org.

Stand: **18**	**Ariane Group**

Onsite Contact:
Marc Lacoste — **Tel:** +33 6 84 83 52 44

Prime contractor for Ariane 5 and Ariane 6, Airbus Safran Launchers provides innovative and competitive solutions for civil and military space launchers. It is also a leading supplier of solutions and equipment for satellite platforms and payloads. The company's expertise encompasses state-of-the-art technologies for system integration, propulsion and key equipment.

Stand: **54 & 55**	**Asia-Pacific Space Cooperation Organization (APSCO)**

Onsite Contact: — **Tel:** +86 10 6370 2677, **Email:** secretariat@apsco.int, **Web:** www.apsco.int

APSCO, headquartered in Beijing, China, was established in December 2008 as an international inter-governmental organization with the purpose "to explore and exploit outer space through peaceful uses of space for socio-economic development in the Asia-Pacific region". APSCO is notified by United Nations and is an Observer at COPUOS.
The Membership with APSCO is in three categories: 'Member State'; 'Associate Member' and 'Observer'. APSCO has eight Member States; One Signatory State; one Associate Member State and one Observer State.

The cooperation in APSCO hinges on pooling up technological, financial and human resources in the fields of space science, space technology and its application. By participating in APSCO, a country becomes nodal point of sharing knowledge, expertise, resources and technologies to develop space vision and capabilities, individually, as well as jointly, through partnership in space based networks under APSCO framework.

APSCO has greatly benefitted its Member States in all the fields of cooperation, extending to: Earth observation, disaster management, environmental protection, satellite communications and satellite navigation and positioning; Space science research; Education, training and exchange of scientists / technologists.
APSCO has communications with more than 30 countries and several international organizations. For more information, please refer to our website www.apsco.int

Stand: **40**	**ATF Press Ltd**

Onsite Contact:
Hilary Regan

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ATF Press Publishing Group celebrates its 25th anniversary in 2017. We are delighted to be co-publisher with the Space Industry Association of Australia of the book *Australia in Space* by Kerrie Dougherty.
The Publishing Group is an Adelaide based independent publisher with five different divisions (imprints) for books and journals. We publish in print and epub with local and international distribution. ATF Press, the publisher of the *Australia in Space* book is one of those imprints. We also have ATF France, ATF Africa, ATF Asia, ATF Brasil, and ATF Theology as other imprints for different kinds of books.

The Group is governed by an international board of directors and administered by a series of committees.

In the past we have published a pictorial book on Birds of Kangaroo Island in South Australia, a photographic book on Sevenhill Cellars in the Clare Valley, and also on the Coorong and Lower Lakes, all of which are on sale at the Congress. ATF Press Publishing Group is also the English publisher and agent for the Korean born, Paris based, abstract artist, Kim En Joong.

We welcome manuscripts to be sent to us for perusal. Please send to hdregan@atf.org.au

Stand: **31**	**Australian Government – Department of Industry, Innovation and Science**

Onsite Contact:
Jennifer Doyle

Email: space@industry.gov.au
Web: space.gov.au

The Department of Industry, Innovation and Science is Australia's lead agency on space activities. This year the department is hosting the Australian Government's *Big Country, Big Sky, Big Ideas* booth at the IAC.
Our booth includes exhibits from the department's portfolio agencies – the CSIRO, Geoscience Australia, the Square Kilometre Array and the Australian Astronomical Observatory – as well as exhibits from our Commonwealth partners in the space sector.

The department's vision is to enable growth and productivity for globally competitive industries in Australia.
The department provides advice to government on civil space policy and regulation issues and on managing international civil space cooperative agreements. In advancing the development and use of our space capabilities, the department supports and coordinates nationally significant civil space initiatives across the Australian Government. It also coordinates Australia's involvement in the international Square Kilometre Array project, an international effort to design and build the world's largest and most sensitive telescope here in Australia and in South Africa.

The department has four overarching objectives: supporting science and commercialisation, growing business investment and improving business capability, streamlining regulation, and building a high performance organisation.
To find out more, visit our booth or go to space.gov.au

Stand: **70**	**Australian Youth Aerospace Association**

Onsite Contact:
Imogen Rea, President 2017

Mobile: +614 35 492 588
Email: imogen.rea@ayaa.com.au
Web: ayaa.com.au

The Australian Youth Aerospace Association (AYAA) is a not-for-profit organisation managed by student volunteers and young professionals, who have the objective of promoting education, awareness and involvement in the aerospace industry to young Australians.

AYAA hosts two major annual events, the Australian Youth Aerospace Forum (AYAF) for high school students, and the Aerospace Futures conference (AF) for undergraduate and postgraduate university students. AYAA also runs the rocket program in both VIC and QLD, which gives students all over Australia the opportunity to become Rocket Engineers for a day. It is designed to showcase both the theoretical and practical applications of modern rocketry.

Stand: **78**	**Beijing Sunwise Space Technology Ltd**

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Jufeng Dai

Email: qiapeiannie718@163.com
Web: www.sunwisespace.com

Sunwise space technology Ltd. (Sunwise Space) is a wholly owned subsidiary of Beijing Institute of Control Engineering. With aerospace background, Sunwise Space adheres to integrating aerospace and commercial application.

Sunwise Space, replying on advanced aerospace technology and brand influence, has established the self R&D platform in the fields of testing product R&D, industry and aerospace testing system integration, aerospace product testing, robot control and wind power.

Sunwise Space – the leading enterprise in aerospace testing and control.

Stand: **42A**	**Bremeninvest**

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Bianka Hanssen

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Web: www.aerospace@bremen-invest.com

Aerospace Bremen at Bremeninvest supports and promotes the development of players within the aeronautics and space industries innovation cluster.

In Bremen, the aeronautics and space industries sectors with more than 140 companies and 20 research institutes and universities cover approximately 12,000 employees with an annual turnover of more than 4 billion euros. Bremen calculates, in terms of residents, the highest aeronautics and aerospace employment density in Germany.

Mayor contributors are leading enterprises in the sector with R&D and production activities such as the Airbus Group, Rheinmetall Defence Electronics, OHB and their suppliers companies. The success is due to the excellent skills of people in Bremen and in the fields of aerospace and space industries. Contineous training is ensured by a variety of study and training courses.

Jobs of the future, especially for highly-qualified people, characterize the industry. This is strongly supported by cutting-edge research such as: material sciences and manufacturing technologies, space systems and research, remote sensing and atmospheric research, simulation and calculation, bionics and more.

Cluster activities in companies, research institutions and associations are supported by appropriate economic development measures. These include the Bremen Aerospace Research Programme 2020 and the Center for Eco-efficient Materials & Technologies EcoMAT.

Stand: **17**	**Centre National d'Etudes Spatiales (CNES)**

Onsite Contact:
Philippe Collot

Email: philippe.collot@cnes.fr

Inventing the Future of Space

CNES plays a key role in the French, European and international space arena, driving initiatives, stimulating new proposals and providing technical expertise to support the design, development and operation of space systems.

While some programs remain within national boundaries, many more would not see the light of day were it not for international partnerships. CNES thus represents France on the European Space Agency's Council. It is also a partner in several commercial enterprises, giving government support to strategic activities. Founded to implement France's space policy and true to its vocation, CNES is constantly reinventing space. After creating the Ariane family of launchers, today its teams are federating European efforts around Ariane 6 and conceiving the key projects that will shape the future.

Stand: **25**	**Chinese Society of Astronautics**

Onsite Contact:
YANG He

Email: echo_yanghe@163.com
Web: http://www.csaspace.org.cn/

Chinese Society of Astronautics (CSA) was founded in 1979 in Beijing, China. It is a non-government and non-profit academic organization. CSA has 37 technical committees, 179 institutional members and 23451 individual members. The objective of CSA is to expedite the development and popularization of space science and technology. The main tasks of CSA are to organize national and international symposium, forum, conferences to promote space exchange and cooperation, to conduct consulting services to the government, to play an active role in the popularization of space science among young people and to edit, publish and distribute academic journals.

Stand: **74**	**COSPAR Assembly**

The 42nd COSPAR Scientific Assembly, COSPAR 2018, will be held in Pasadena, California and will mark the 60th anniversary of the formation of COSPAR itself. It will also mark the 60th anniversary of the launch of Explorer-1, built at the nearby Jet Propulsion Laboratory which is a division of the official host for COSPAR 2018, the California Institute of Technology. COSPAR membership today is comprised of forty-two national scientific institutions, thirteen international scientific unions, and many thousands of individual associate members. Pasadena's location on the western edge of the Pacific Rim, near several international airports, makes it an especially convenient venue for scientists from North America, Asia and Europe. COSPAR 2018 is expected to attract well over 3,000 of the leading space scientists and space leaders from as many as seventy nations.

Stand: **41**	**CSIRO**

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Web: www.csiro.au

We're Australia's national science agency. For 100 years we've delivered positive impact from science and technology and have a long and successful history in the space sector.

Australia's unique southern hemisphere location is a great natural asset for astronomy and space science which is complemented by our proven ability to manage large, complex facilities with a high degree of reliability.

We understand the power of Earth observation data to inform policy, manage natural environments and generate agricultural and industrial development opportunities.

Our partnerships with industry are delivering breakthrough innovations that support supply chains ranging from imaging and sensor technologies through to autonomous robotics and new materials and manufacturing processes.

We're your partner in space. Come and talk about how we can help your organisation.

For more information visit the CSIRO and Australian Government stands at IAC2017 or www.csiro.au.

Stand: **43D**	**D Orbit**

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D-Orbit is an Italian New Space company providing solutions for satellite design, development, launch, commissioning and decommissioning. Our flagship products are InOrbit NOW, FENIX, and D3. InOrbit NOW is a CubeSat launch and deployment service leveraging ION CubeSat carrier, a satellite platform developed and operated by D-Orbit able to carry a combination of CubeSats (from 1U to 12U) inside its 48U dispenser, and release them individually into precise orbital slots with customizable orientation, attitude, and impulse. FENIX is a compact solid propulsion system that empowers CubeSat to perform orbitraising maneuvers, enabling operators to extend their CubeSats' operational life. D-Orbit Decommissioning Device (D3) is an independent, smart propulsive device available for all satellite platforms operating in LEO, MEO, GEO, specialized in decommissioning maneuvers to remove the hosting satellite from the operational orbit in a quick, direct, and controlled way at the end of the mission or in case of major malfunction.

Stand: **24**	**Emerging Countries**

Also, as the continued activities of IAF during IAC, Special Exhibition Booths will provide free exhibition for Emerging Countries. The theme of this booths will be ' Exchange of Space Culture among IAF Regional Groups'.

For this Exhibition Booths LOC of Adelaide IAC provided booths area, 34a+35a (3x6 m) and Korea Aerospace Research Institute (KARI) installed the interior and provided tables and exhibition shelves. Each regional group of GLURAC, APRG and Africa RG will invite the organizations from their region to exhibit their activities.

Stand: **42**	**German Aerospace Center (DLR)**

Onsite contact:
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DLR is the national aeronautics and space research centre of the Federal Republic of Germany. Its extensive research and development work in aeronautics, space, energy, transport and security is integrated into national and international cooperative ventures. In addition to its own research, as Germany's space agency, DLR has been given responsibility by the federal government for the planning and implementation of the German space programme. DLR is also the umbrella organisation for the nation's largest project management agency.

DLR has approximately 8000 employees at 20 locations in Germany: Cologne (headquarters), Augsburg, Berlin, Bonn, Braunschweig, Bremen, Bremerhaven, Dresden, Goettingen, Hamburg, Jena, Juelich, Lampoldshausen, Neustrelitz, Oberpfaffenhofen, Oldenburg, Stade, Stuttgart, Trauen, and Weilheim. DLR also has offices in Brussels, Paris, Tokyo and Washington D.C.

Stand: **36 & 37**	**Gistda**

Onsite Contacts:
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Kamolmas Tongkaew, Chief of Business Development Division

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Geo-Informatics and Space Technology Development Agency (Public Organization) or GISTDA is a government organization under the supervision of the Ministry of Science and Technology of Thailand. Over 16 years in space technology and geo-informatics industry, we have been providing satellite image, GIS data, and GI solution, developing ground segment system, delivering capacity building program, as well as conducting research and development in space technology and geo-informatics to support customers at all levels.

Stand: **30**	**GROUP OF ASTRODYNAMICS FOR THE USE OF SPACE SYSTEMS (GAUSS)**

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The **Group of Astrodynamics** for the Use of Space Systems (GAUSS) is an Italian limited liability company based in Rome, founded in 2012 as a spin-off of the Aerospace Engineering School of Sapienza University of Rome, carrying on the school's more than twenty years tradition in the field of microsatellites.

The company business is mainly related to the design and the manufacturing of microsatellites and releasing platforms for pico and femto satellites, such as GPOD, MRFOD and TUPOD.

Since the early Nineties, activities of designing, ground testing, integration, launch and ground operations have been managed by GAUSS members at the Aerospace Engineering School, under the supervision of Professor Filippo Graziani. The first microsatellite, UNISAT, was launched in September 2000. It was followed by other five University satellites and then by UNISAT-5 (2013), UNISAT-6 (2014) and TUPOD (2017), launched by GAUSS as a private company. UNISAT-7 is planned to be launched in 2018.

In the most recent launches, UNISAT was also a platform and it was able to release several CubeSats, thus letting GAUSS being a small satellites launch provider. GAUSS activities include also structural design, realization and integration of the main subsystems and payloads and all the ground segment operations.

Stand: **14**	**INNOVATIVE SOLUTIONS IN SPACE (ISIS)**

Contact person:

Tel:
Email:
Web:

ISIS- Innovative Solutions In Space is a very vertically integrated small satellite company from Delft with 45 engineers. The company is focused on satellites in the range of 1 -20 kilograms and provides R&D, services, products and subsystems, launch services, satellite platforms and tur-key solutions to a broad range of customers

Stand: **27**	**ISRO**

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Deviprasad Karnik
Antariksh Bhavan

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Web: www.isro.gov.in

The Indian space programme was launched with the aim of developing independent space technology for a range of national projects (TV broadcasting, telecommunications, meteorology, natural resources management, etc.). The I.S.R.O. (Indian Space Research Organisation) has therefore successfully developed:

- Two major satellite systems:
  - INSAT (Indian National SATellites) for communications
  - IRS (Indian Remote Sensing) for natural resources management
- Two families of launchers:
  - PSLV (Polar Satellite Launch Vehicle) to launch Remote Sensing satellites,
  - GSLV (Geostationary Satellite Launch Vehicle) Mk-II and Mk-III for INSAT/GSAT type of satellites

ISRO today operates a constellation of Telecommunications, Navigation, Meteorological and Earth Observation satellites, and an Indian probe has been in an elliptical orbit around the planet Mars for more than1000days.
So far, ISRO has accomplished 91 spacecraft, 63 launch and two reentry missions.

Stand: 48	**International Space University (ISU)**

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The International Space University, founded in 1987 is the world's premier international space education institution. ISU offers the Master of Space Studies program at its Central Campus in Strasbourg. Since 1988, ISU has conducted the nine-week Space Studies Program at different host institutions. Since its founding, more than 4,200 students from over 100 countries have completed ISU programs. www.isunet.edu

Stand: **26**	**Japan Aerospace Exploration Agency (JAXA**

Onsite contact:
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The Japan Aerospace Exploration Agency (JAXA) was born through the merger of three institutions, namely the Institute of Space and Astronautical Science (ISAS), the National Aerospace Laboratory of Japan (NAL) and the National Space Development Agency of Japan (NASDA). It was designated as a core performance agency to support the Japanese government's overall aerospace development and utilization. JAXA, therefore, can conduct integrated operations from basic research and development to utilization.

Stand: **20**	**Korea Aerospace Research Institute - KARI**

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KARI is contribution to the sound development of the national economy improving the quality of people's lives through the development of aerospace technology, and realizing the dream of sky and space of the Republic of Korea.

Stand: **21**	**L3 Technologies**

Onsite contact:
Christophe Bauer

Email: Christophe.Bauer@L3T.com

L3 is a leading provider of a broad range of communication and electronic systems and products used on military, homeland security and commercial platforms. L3 is also a prime contractor in aerospace systems, security and detection systems, and pilot training.

Stand: **5**	**Lockheed Martin**

Onsite contact:

Tel:
Email:
Web: http://www.lockheedmartin.com/

Headquartered in Bethesda, Maryland, Lockheed Martin is a global security and aerospace company that employs approximately 97,000 people worldwide and is principally engaged in the research, design, development, manufacture, integration and sustainment of advanced technology systems, products and services.

Stand: 29	**Majestic Opals**

Mobile: 0408 085 129
Email: Email: sophia@majesticopals.com.au

John and Sophia invite you to visit their booth and feast your eyes on their opal gem galley including the ***"Opal Moon"*** range, which is ***"Out of this World!!"***
John and his wife Sophia still mine opals in Coober Pedy. They also have partners in the other opal fields in Australia.
Product lines include raw material, polished opal, handcrafted opal jewellery, in crystal, black, boulder opal and Opalised fossils.
Prices range from $20 mementos to collector gem opals.
Majestic Opals bring exquisite gems from their mines to you. Customers can be assured in the quality and value of all their opal products, based on the Family being long-standing respected leaders in the opal industry for over 50 years.
Majestic Opals was chosen in 2014 to present his Royal Highness Prince George with a "truck full of opals". John Provatidis has been inducted into the Coober Pedy Hall of Fame for his contribution to the Opal Industry.
Coober Pedy in South Australia produces 86% of the world's best quality Opal "The Queen Of Gems," Shakespeare.

Stand: **60**	**Mohammed bin Rashid Space Centre**

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The Mohammed bin Rashid Space Centre (MBRSC) is a Dubai Government entity which aims to promote scientific innovation and technological advancement in the United Arab Emirates (UAE). MBRSC works on missions, conducts researches and studies related to space science and technology, in line with the approach of the UAE, in its quest to develop the sector and build national skills through it.

The Centre is developing and leading ambitious projects and programs under the umbrella of the UAE National Space Programme including the Emirates Mars Mission – Hope mission, the Mars 2117 project, the UAE National Astronauts Program, and the Integrated Satellite Manufacturing Program.

The Centre is also responsible for specialised and advanced technical projects assigned to stakeholders. Moreover, MBRSC provides space imaging and ground station services and support to other satellite services.

Since 2006, MBRSC has launched two Earth Observational Satellites, DubaiSat-1 and DubaiSat-2 and a communication Nano-Satellite Nayif-1. MBRSC is currently developing KhalifaSat, the first locally-built satellite by Emirati engineers and is slated for launch in 2018.

Stand: **32**	**Multisoft**

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Web: www.multisoftsa.com

From the year 2010 we have been working in developing ATC (Air Traffic Control) systems, monitoring, hardware and software solutions, network certification and server room installation.

Multisoft Group offers a wide range of monitoring and recording solutions that would meet perfectly the needs of our clients. Our attention to detail, customer satisfaction and the ability to provide our clients with personalized state-of-the-art technology-that is what make us unique.

Together we strive to achieve and implement our idea to create global video and recording solutions for markets around the World.

During the exhibition, Multisoft Group is going to present Video Grabber DVI/VGA and Video Grabber DisplayPort in operation. In exposition Multisoft Group is going to present KMG (Keyboard and Mouse Grabber) and Video Splitter. Visitors will be able to obtain any information and assistance concerning our products and IT solutions. We kindly invite you to visit our stand No. 32 during International Astronautical Congress 2017.

Stand: **15**	**NanoRacks**

Onsite contact:
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Director of Marketing, Communications & Special Events

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NanoRacks LLC was formed in 2009 to provide commercial hardware and services for the U.S. National Laboratory onboard the International Space Station via a Space Act Agreement with NASA. NanoRacks' main office is in Houston, Texas, right alongside the NASA Johnson Space Center. The Business Development office is in Washington, DC. Additional offices are located in Silicon Valley, California and Leiden, Netherlands.

In July 2015, NanoRacks signed a teaming agreement with Blue Origin to offer integration services on their New Shepard space vehicle. NanoRacks, along with partners at ULA and Space Systems Loral was also recently selected by NASA to participate in the NextSTEPs Phase II program to develop commercial habitation systems in low-Earth orbit and beyond.

As of March 2017, over 500 payloads have been launched to the International Space Station via NanoRacks services, and our customer base includes the European Space Agency (ESA) the German Space Agency (DLR,) the American space agency (NASA,) US Government Agencies, Planet Labs, Urthecast, Space Florida, NCESSE, Virgin Galactic, pharmaceutical drug companies, and organizations in Vietnam, UK, Romania and Israel.

Stand: **63**	**New Zealand Space Agency (MBIE)**

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New Zealand's unique position and conditions make it an attractive location for space activities.
New Zealand has clear skies and seas, relatively low levels of air traffic, and easy access to key orbits. We are one of 11 countries launching vehicles into space from their own territory, and the first to launch from a fully private orbital launch range.
The New Zealand Space Agency is the central point of contact for space within the New Zealand government. Our regulatory regime is future-focused and we encourage space science, innovation and R&D.

Stand: **43E**	**Nova Systems**

Onsite contacts:

Mr Adam Schirmer, Marketing and Communications Management **Tel:** 0425 633 551

Chantell Hemmens **Tel:** 0413 362 012

Nova specialise in technology integration within highly complex operating environments. Drawing on our Aerospace and Defence industries experience, we bring systems thinking and unique solutions for our clients to be globally competitive across a range of industries, including Aerospace, Geospatial, Defence, Utilities, Transport and Communications. Using cross-sector thinking and best practice, we apply technology and innovation to reduce costs and increase productivity for optimum results.

Our approach to technology integration is requirements oriented. We apply systems engineering and specialty skills to define problems up-front, before developing technical solutions. We aim for solutions to complement existing technologies, systems and processes. We work across business units to develop integrated systemic solutions. We optimise assets, technology and operations at all stages of the asset life-cycle through conception, development, operations, sustainment and disposal.

Our Brands include Nova Systems, Geoplex, Auspace, two10degrees and GVH Aerospace.
Our offices are located throughout Australia, Singapore and Europe.

Stand: **50**	**Rafael**

Onsite contacts:

Leonid Rabinovich, Orbital Propulsion Program Manager **Mobile:** +972-52-4291430 **Email:** leonidr@rafael.co.il

Rafael's space activities are focused on Small satellite constellations, micro satellites and nano-satellites, space propulsion solutions, advanced light-weight composite space structures, as well as MEMS Technologies.

The foundations of Rafael's development of microsatellite technology are based on its proven extensive operational experience in land and aerial Intelligence systems, land and aerial communication systems, and space propulsion modules, present in over 66 satellites in space and partnership in the French-Israeli VENUS Multispectral Earth-Observation satellite.

Rafael's activities in small satellite systems development are focused on dual-use operational applications (civilian and military), based on constellations of nano-satellites or micro-satellites – depending upon the specific application.

RAFAEL designs, develops and manufactures Electrical Propulsion Systems (EPS). It provides EPS to Venus satellite and is currently developing low-power systems to accommodate microsatellites. Rafael offers an entire range of solutions, from components up to whole systems and the whole value chain. It has supporting infrastructure, as well as experienced designers to provide a full array of space EPS.

Rafael's Space Propulsion Solutions employ a vast range of propulsion systems and components, including Hydrazine-based mono-propellant, Cold Gas and Electrical Propulsion which lead to modern and compact Systems with high operational flexibility and high performance.

Stand: **43A**	**Rocket Lab**

Onsite contacts:

Jessica Tulp **Mobile:** +64 21 668 494 **Email:** j.tulp@rocketlab.co.nz

Rocket Lab's mission is to revolutionize the way we access space. The aerospace company is eliminating commercial barriers through the development of lightweight, cost-effective and high-frequency rocket launch services, ushering in a new era of unprecedented access to space.
The company was founded on the belief that small payloads require dedicated launch vehicles and flexibility to liberate them from the choke of traditional launch systems. Electron, Rocket Lab's launch vehicle, was developed to service the growing small satellite market with dedicated, high-frequency launches. The carbon composite vehicle is powered by 3D printed Rutherford engines, designed to deliver payloads of 150 kg to a 500 km Sun-synchronous orbit.
Rocket Lab is a privately funded company with top tier investors including Khosla Ventures, Bessemer Venture Partners, Lockheed Martin, Promus Ventures and Data Collective. Founded in 2006, Rocket Lab is headquartered in Los Angeles with operations and a launch site in New Zealand.

Stand: 73	**Romanian Space Agency – ROSA**

Onsite Contact:

Alexandra Dita **Tel:** 0040 740 085 458 **Email:** alexandra.dita@spacescience.ro **Web:** http://www2.rosa.ro/index.php/en/

The Romanian Space Agency (ROSA) is the coordinator of Romania's national and international space activities. The Romanian Space Agency (ROSA) is a public institution entirely self-funded, operating under Government Decision no. 923/20.11.1995 and the subsequent decisions of the Ministry of Education and Research - National Authority for Scientific Research and Innovation (A.N.C.S.I.). *ROSA's mission is to promote space development, co-ordinate the national space research and applications programs, and, as a government representative, promote international co-operation.*

ROSA serves as a project integrator and developer with the overall objective to produce space science and technology, transfer results to the users and generate physical and human infrastructure-capacity building. ROSA is authorized to develop specific project oriented research through its own centers.

ROSA is acting on behalf of the Romanian Government for: ESA, EU – Space & Security Research, NATO - Science for Peace and Security and Space-related RTO issues. On the 20th of January 2011 Romania, represented by ROSA, signed its Accession Agreement to the ESA Convention, becoming the *19th ESA Member State*.
ROSA is currently managing the national support program on Space Technology and Advanced Research (STAR). Under it, ROSA manages a set of Competence Centres, among which the *Romanian nanoSatellite Technology (ROST-CC)*.

Stand: **33**	**Shaanxi Engineering Laboratory for Microsatellite Northwest Polytechnical University**

Stand: **12 & 13**	**SCN- Sierra Nevada Corporation**

Web: www.sncspace.com

Sierra Nevada Corporation (SNC) provides customer-focused technology solutions in the areas of aerospace, aviation, electronics and systems integration. SNC has been honored as one of "The World's Top 10 Most Innovative Companies in Space," and one of America's fastest growing companies. SNC's Space Systems business area based in Louisville, Colorado, designs and manufactures advanced spacecraft, space vehicles, rocket motors and spacecraft subsystems and components for the U.S. Government, commercial customers, as well as for the international market. SNC has more than 25 years of space heritage, participating in more than 450 successful space missions and delivering 4,000+ systems, subsystems and components around the world.

Stand: **22**	**SITAEL**

Onsite Contact:

Giovanni Tuccio, Sales and Business Development Manager **Tel:** +39 349 4753295 **Email:** giovanni.tuccio@sitael.com

SITAEL is the largest Italian privately-owned Company operating in Space Sector.
SITAEL gained through the years competences in the Design, Development and Production of Small Satellites, Optical Payloads, Advanced Propulsion Systems and On Board Avionics.

SITAEL is able to provide competitive solutions for Earth Observation, Telecom and Science missions based on all-electric small satellites and related downstream services.

Counting on more than 320 skilled employees and state-of-the-art facilities, SITAEL manages all the development and production phases, providing leading technologies and services for high-reliability applications.

SITAEL has successfully taken part in many International Projects (COPERNICUS SENTINELS, SWARM, INTEGRAL, MSL-Curiosity, ExoMARS, PAMELA, AMS-01/AMS-02, CALET, ASTRO-H, GAIA, ATV, ALMASat1, Unisat-V) and is currently involved in other International Programmes) in collaboration with the main Space Players (ESA, NASA, CNES, JAXA, ASI, Thales Alenia Space, AIRBUS Defence & Space, OHB, LEONARDO, COM DEV, RSC Energia).

Stand: 16 — Sky and Space Global

Onsite Contact:
Eva Friman

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Sky and Space Global Ltd (SAS) is an ASX listed satellite company with European and Israeli centres of Aerospace and Software Industry Experts.

The Company's core business is to construct a communications infrastructure based on nano-satellite technology and develop sophisticated software systems that will deploy, maintain orbit control and handle communication code between each of the nano-satellites to provide narrowband communication services, including voice, data, Instant Messaging (IM), Machine to Machine (M2M) and Internet of Things (IoT).

The Company's mission is to provide Affordable, nano-satellite communication coverage to Anyone, Anywhere, Anytime with relatively low maintenance costs. This will enable Sky and Space Global to deliver cost effective communications infrastructure and services to the telecommunications and international industries.

SAS strongly believes in the idea that affordable connectivity is a basic human right in today's world and is committed to providing affordable access to basic voice and data services in remote locations in developing economies across the world.

Recently, Sky and Space Global has successfully launched its first "3 Diamonds" Nano-satellites, and is looking forward to continuing working towards delivering a full constellation of up to 200 Nano-satellites in orbit to achieve full coverage of the equatorial belt by 2020

Stand: 6 — South Australian Government

Onsite Contact:
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The South Australian Government is a strong supporter of the growth and development of Australia's space industry and is working to position the state as a vibrant hub of space activity. The State Government is advocating for the creation of an Australian space agency to grow the industry, which will support our transition to a high-tech and advanced manufacturing economy, creating jobs of the future and attracting investment to our state.

The South Australian Government stand will showcase innovative local start-ups and companies in the space sector, along with the latest cutting-edge space technologies. South Australia's presence at the conference, co-ordinated by Defence SA's Space Industry and R&D Collaborations business unit, also features key government departments, including Investment Attraction South Australia, the Department of State Development and the Department for Education and Child Development.

Research and education is also a priority for the South Australian Government, which is committed to encouraging young South Australians to consider careers in science, technology, engineering and maths to take advantage of future jobs in the space sector. The state's leading educational and research institutions, including the University of South Australia, Adelaide University, Flinders University, TAFE SA and Hamilton Secondary College, will feature on the stand.

Stand: 34 — Space Agencies and Space Officers (NSPO)

Onsite Contact:
Arthur Huang, Researcher, National Space Organization

Serving as the space agency of Taiwan, the mission of National Space Organization (NSPO) is to executive national space programs, promote space science and technology, foster the growth of domestic space industry, and make global environmental and disaster relief impact through international cooperation.

Stand: 69 — Space Flight Laboratory (SFL)

Onsite Contact:
Freddy Pranajaya, Deputy Director, Innovation

Mobile: 647-338-7890

The Space Flight Laboratory (SFL) builds big performance into smaller, lower cost satellites. SFL is Canada's most prolific satellite builder and exporter of satellites internationally. Small satellites built by SFL consistently push the performance envelope and disrupt the traditional cost paradigm. Satellites are built with advanced power systems, stringent attitude control and high-volume data capacity that are striking relative to the budget. SFL arranges launches globally and maintains a mission control center accessing ground stations worldwide. SFL's mandate is to lower the entry barrier for organizations around the world to meet their needs in space while requiring modest investment. Commercial business models are sensitive to cost and SFL solutions allow businesses to close financial models for new satellite services. The pioneering and barrier breaking work of SFL is a key enabler to tomorrow's cost aggressive satellite constellations.

Stand: 71 — Space Generation Advisory Council (SGAC)

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Ms. Minoo Rathnasabapathy, SGAC Executive Director

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SGAC is an international non-governmental, non-profit organisation that represents students and young professionals in the space sector to the United Nations, States, agencies, industry, academia and other space sector organisations. SGAC has permanent observer status on the United Nations Committee on the Peaceful Uses of Outer Space (COPUOS) and is a member of the UN Economic and Social Council, and the International Astronautical Federation (IAF). Headquartered in Vienna, with full-time staff, the organisation is supported by a volunteer network of over 4,000 members in more than 90 countries. SGAC's focus is providing pragmatic space policy advice to policy makers based on the interests of its network of university students and young professionals, in the age range of 18-35, interested in space from around the world. This international network is the largest and most diverse of its kind, helping to connect the next generation of space leaders.

Stand: 4A — Spacety co. Ltd

Onsite Contact:
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As one of the first commercial aerospace companies in China, Spacety is specialized in developing space systems and payloads for commercial use. By researching and developing commercial micro/nano-satellites, Spacety provides short cycle, low-cost and one-stop services of space science experiments and technology verification for scientists and research institutes.

Spacety has established a powerful expert team with abundant experience in aerospace engineering projects. The team has taken part in nearly 100 tasks for developing aerospace models like satellites, spacecraft and space stations in China and overseas.

Ever since it founded in 2016, Spacety has successfully launched "XX-1", China's first satellite which was independently developed by private enterprises and cooperated with SpacePharma, a Switzerland space company, for "Dido -2".

Stand: 77 — Springer

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Springer Nature is one of the world's leading global research, educational and professional publishers, home to an array of respected and trusted brands providing quality content through a range of innovative products and services. Springer Nature is the world's largest academic book publisher, publisher of the world's most influential journals and a pioneer in the field of open research. The company numbers almost 13,000 staff in over 50 countries and has a turnover of approximately EUR 1.5 billion. Springer Nature was formed in 2015 through the merger of Nature Publishing Group, Palgrave Macmillan, Macmillan Education and Springer Science+Business Media.

Find out more: www.springernature.com

Stand: 4 — Surrey Satellite Technology Limited

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Over 25 years of space innovation, where an innovative approach to the design, build, launch and operation of satellites, has propelled SSTL to the forefront of the small satellite industry. SSTL's drive to change the economics of space means that we continue to push the boundaries of space, exploiting advances in technologies and continuing to challenge conventions, bringing affordable space exploration to our customers. SSTL delivers complete mission solutions for remote sensing, science, navigation and telecommunications as well as supplying avionics suites, subsystems and ground infrastructure. SSTL's vertically integrated projects have given us a reputation for delivering to short schedules and within tight budgets. To date we have delivered 49 satellites to international customers.

Based in Guildford, UK, SSTL employs 500 staff and is an independent company within the Airbus Group.

SST-US serving the US market www.sst-us.com
SSTL Group serving the rest of the world www.sstl.co.uk

Stand: 52	**Swedish Space Corporation**

Onsite Contact:
Kevin S. Mortensen, **Mobile:** +1 719 358 1627
Vice President, International Marketing

We help Earth benefit from space. SSC's broad range of products and services – from satellite subsystems to launch and operation – and their worldwide availability, is unmatched in the market. We provide technology and services required to implement and manage advanced space projects in the best way possible. #SSCINFINITY

Stand: **35**	**Syrlinks**

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Syrlinks designs, develops, and manufactures high-end, cost-effective radio-communication and geolocation sub-systems for harsh environments (Space, Defense, and Safety).

Syrlinks' products combine innovative technology and reliability to offer both advanced performances and easy integration.

Stand: **47**	**Technische Universität Berlin**

Stand: **58**	**The Boeing Company**

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Boeing is the world's largest aerospace company and leading manufacturer of commercial jetliners and defense, space and security systems. A top U.S. exporter, the company supports airlines and U.S. and allied government customers in 150 countries. Boeing products and services include commercial and military aircraft, satellites, weapons, C4ISR, electronic and defense systems, launch systems, and performance-based logistics and training.

Boeing has a long tradition of aerospace innovation. Its broad range of capabilities includes creating new, more efficient members of its commercial airplane family, creating advanced technology solutions for military customers and integrating aircraft, defense and space systems and warfighters through network-enabled solutions.

Stand: **62**	**The Department of Trade and Industry**

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The South African Pavilion hosted by the Government of the Republic of South Africa (RSA) comprises of South African Government Departments, State-Owned Entities and Space Companies. This is one of the initiatives by RSA to support its space industry by providing them with the platform to showcase their products and capabilities in this global space event to enhance collaboration and cooperation with international companies and other countries of the world. The ideology of hosting all South African participants under one structure goes with the South African concept of "Ubuntu" which represents the values and principles of humanness and the value of community building. This concept goes hand in hand with the South African saying that "Umuntu Ngumuntu Ngabantu" which translates to "a person is a person through / because of (other) people; you are who you are because of how you relate to others around you." To this end, we are exhibiting as a collective.

Stand: **60A**	**UAE Space Agency**

Web: www.space.gov.ae

The main aims of the UAE Space Agency are:

- To organise, regulate and support the space sector in the UAE and to enhance its position. and encourage the development and use of space science and technology.
- The establishment of international partnerships in the space sector and to enhance the role of the state and its position in the space sector.
- Contribute to the diversification of the national economy through the space sector.
- Raise awareness of the importance of the space technologies, enhance national capabilities and encourage peaceful application of space research.

Stand: **23**	**United Nations Office for Outer Space Affairs (UNOOSA)**

Onsite Contact:
Daria Brankin
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The United Nations Office for Outer Space Affairs (UNOOSA) works to bring the benefits of space to all humankind by being a capacity-builder, a global facilitator, and the gateway to space in the United Nations. The Office is responsible for implementing the United Nations programme on the peaceful uses of outer space, and helps United Nations Member States, particularly developing countries, to use space science, technology and applications for sustainable development, as well as disaster recovery and risk reduction.
UNOOSA serves as the secretariat for the United Nations General Assembly's only committee dealing exclusively with international cooperation in the peaceful uses of outer space: the United Nations Committee on the Peaceful Uses of Outer Space (COPUOS) and its Technical and Scientific and Legal Subcommittees. In addition, UNOOSA is the executive secretariat of the International Committee on Global Navigation Satellite Systems, and the permanent secretariat to the Space Mission Planning Advisory Group.
The Office is also responsible for implementing the Secretary-General's responsibilities under international space law and maintaining the United Nations Register of Objects Launched into Outer Space.
UNOOSA is located at the United Nations Office at Vienna, Austria, and has offices in Bonn, Germany, and Beijing, China.

Stand: **49**	**University of South Australia**

The University of South Australia is Australia's University of Enterprise.

Our culture of innovation is anchored around global and national links to academic, research and industry partners. Our graduates are the new urban professionals, global citizens at ease with the world and ready to create and respond to change. Our research is inventive and adventurous and we create new knowledge that is central to global economic and social prosperity.

The University's international reputation continues to grow. We are ranked in the top 50 world universities under 50 years old by both Times Higher Education (#32) and QS (#24) world university rankings. THE also ranked the University of South Australia amongst the world's best international universities.

With more than 32,000 students, around 6,000 of whom are international students, we are South Australia's largest university and offer degree programs in business, education, arts, social sciences, health sciences, information technology, engineering and the environment. Programs are designed with strong professional emphasis and in partnership with industry and the professions to ensure the career relevance of our teaching. Our graduate employment rates are above the national average; we're rated Number One in South Australia for the employment rate of our graduates.

*QILT: Graduate Destination Survey 2014-2016 Full-time Employment Indicator-2016

Stand: **64**	**University of Sydney**

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At the University of Sydney we're dedicated to space research and education. From undergraduate and postgraduate studies, where our Space major is the only program of its kind in Australia, to our innovative research, it's no wonder we're ranked #1 for research innovation in Australia and are one of the top three universities in the country for engineering and technology.

Stand: **72**	**University of Wurzburg**

Stand: 43c	**Western University**

Onsite Contact:
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Twitter: @SpaceCowgirlMel

The Centre for Planetary Science and Exploration (CPSX) at Western University is the leading organization for planetary science and exploration research and training in Canada. Our goal is to provide Canada and the global space program with the necessary expertise to design and support future planetary mission activities.

Located in London, Ontario, and established in 2008, CPSX is home to the largest collection of graduate students and faculty in planetary science in the nation, with over 50 faculty and 30 graduate students from 11 different departments, and a growing number of alumni.

Centre faculty, representing the departments of Electrical and Computer Engineering, Mechanical and Materials Engineering, Civil and Environmental Engineering, Physics and Astronomy, Earth Sciences, Biology, and Geography, focus their research on five major themes:

- Earth observation, monitoring, and protecting
- Exploration technologies
- Planetary processes
- Planetary materials
- Galactic and stellar processes

The Centre hosts Canada's only graduate program in planetary science, offers a minor at the undergraduate level and has vibrant research, public education, professional development and outreach programs. NEW* in September 2018, CPSX will be introducing an Online Professional Masters in Space Studies *(*pending university approval)*.
For more information visit cpsx.uwo.ca, or follow us on Twitter @westernuCPSX.

9 Social Events

Welcome Reception

Date: **Monday 25 September 2017**
Time: **19:30 - 22:00**
Location: **Exhibition Hall, Adelaide Convention Centre**
Cost: Inclusive with registration.
Dress: Business Attire

Join Congress participants and partners for drinks, refreshments and networking. Held within the Exhibition Hall at the Adelaide Convention Centre, guests will delight with the wonderful food and drinks on offer and have the opportunity to unwind after the first official day of the Congress.

Gala Dinner

Date: **Friday 29 September 2017**
Time: **18:30 – 22:00**
Location: **Adelaide Oval, War Memorial Drive, William Magarey Room (enter via South gate)**
Cost: $140 per person
Dress: Formal Attire

The Congress Dinner will be a night of sophistication and elegance. Held in the stunning William Magarey Room at the Adelaide Oval, guests will enjoy the carefully selected food and wine options whilst celebrating the successes of the 2017 Congress. This will be the last social event of the Congress and a night not to be missed.

Tickets can be bought at the registration desk at Foyer G.

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satnews

THOR

#MYIAC2017

Be part in our competition by uploading your own IAC 2017 Highlights video on Facebook using the hashtag #IAC2017

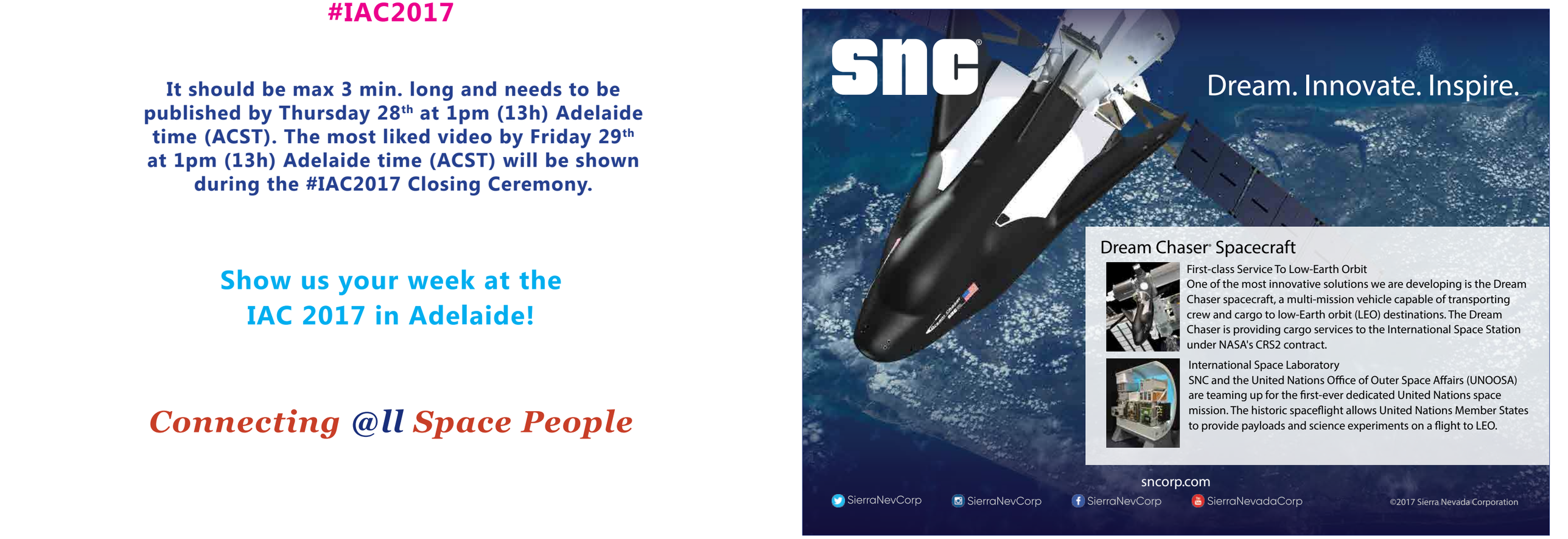
It should be max 3 min. long and needs to be published by Thursday 28th at 1pm (13h) Adelaide time (ACST). The most liked video by Friday 29th at 1pm (13h) Adelaide time (ACST) will be shown during the #IAC2017 Closing Ceremony.

Show us your week at the IAC 2017 in Adelaide!

Connecting @ll Space People

Alliance Programme

IAF Alliance Programme Partners



Organisers

CIDA-E

GLAC 2018
Global Space Applications Conference

21 - 23 May 2018 | Montevideo, Uruguay

GLOBAL SPACE APPLICATIONS CONFERENCE (GLAC 2018)

www.glac2018.org

Conference Objectives

The conference will gather representatives of space agencies, industry, academia and other stakeholders from all over the world to network and find collaboration opportunities.

Space companies, ranging from startups to big corporations, are providing services for various sectors, including agriculture, farming, mining, fishing, transport, energy and others.

The GLAC 2018 will strategically take place in Uruguay and will provide a platform for the countries of the region and worldwide to raise awareness about the benefits of space applications for their socio-economic development.

The comprehensive programme will include high-level keynotes, round tables as well as dedicated sessions for young professionals and students that will address the most recent achievements in satellite-based applications and explore how industry, politics, and law will help shape the future of this exciting domain of astronautics.

Venue

Radisson Montevideo Victoria Plaza Hotel
Address: Plaza Independencia 759, 11100 Montevideo, Uruguay

GLAC 2018 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	21.0
Monday 21 May		"Space Up"				Welcome Lunch		Opening Ceremony	Exhibition Opening	Keynote Topic 1 / Plenary 1 / Exhibition		Welcome Reception		
						Registration								
Tuesday 22 May	Registration	Keynote Topic 2 / Plenary 2 / Exhibition		Coffee Break	Keynote Topic 3 / Plenary 3 / Exhibition		Lunch Break	Keynote Topic 4 / Plenary 4 / Exhibition	Coffee Break	Keynote Topic 5 / Plenary 5 / Exhibition			Gala Dinner	
Wednesday 23 May	Registration	Keynote Topic 6 / Plenary 6 / Exhibition		Coffee Break	Results & Recommendations of Plenaries	Closing								

IAF Alliance Partners:

For more information

Phone: +33 1 45 67 42 60 | **Email:** glac2018@iafastro.org | **Website:** www.glac2018.org

Follow #GLAC2018 online

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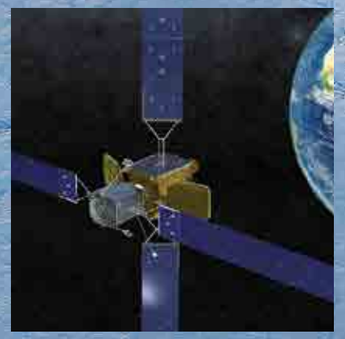

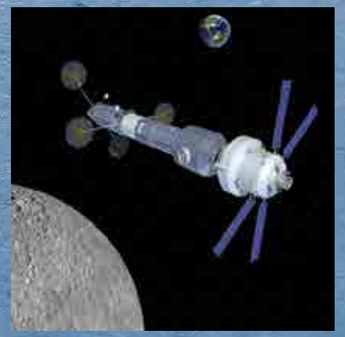

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