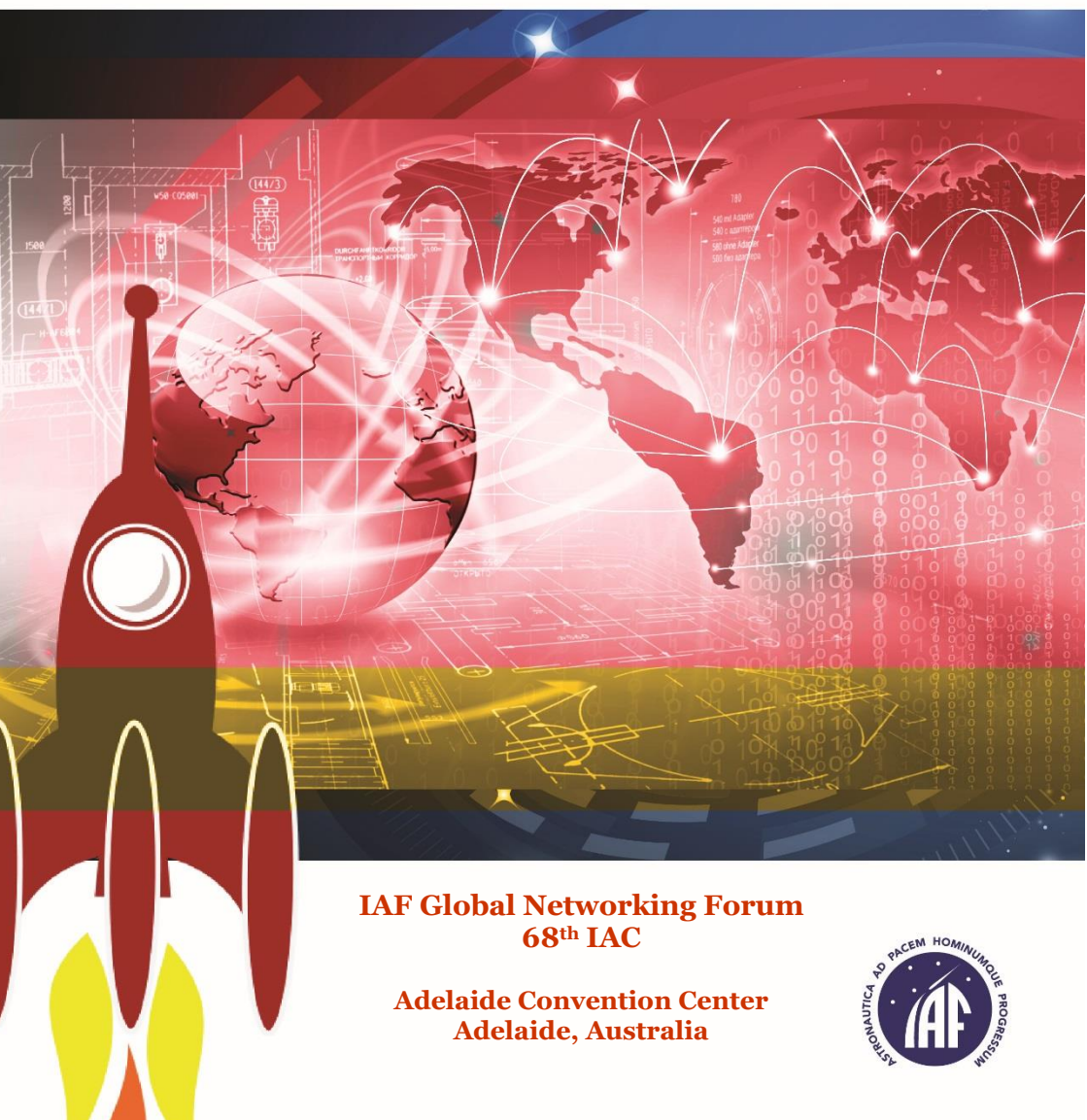




Meet.
Share.
Connect.

Programme - IAC 2017



**IAF Global Networking Forum
68th IAC**

**Adelaide Convention Center
Adelaide, Australia**



2017 GNF Official Sponsors



GNF Location Information

Monday

Tuesday

Wednesday and Thursday (Stream 1)

Wednesday and Thursday (Stream 2)

Friday Morning

Friday Afternoon

Hall C&D

Hall D

Hall D

Hall C

Riverbank 7&8

Hall A - D

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***Upon Invitation Only**

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Monday, 25 September

15:00- 15:15
Hall C&D

GNF Opening

Message from the President of the International Astronautical Federation (IAF)

As President of the International Astronautical Federation, it is a great honor and a real pleasure for me to welcome you here in Adelaide, at the Global Networking Forum.

The Global Networking Forum – GNF – was created in 2012 by the IAF, in line with its motto “Connecting @ll Space People” and above all its mission of promoting partnerships in the space community, advancing international development, sharing knowledge and preparing the workforce of tomorrow.

Today, the GNF represents one of the Federation’s most successful endeavors involving stakeholders, policy-makers and decision-makers, experts and young professionals in the global conversation about the future of space activities.

This year’s International Astronautical Congress includes a unique and exciting GNF Programme, touching upon the most recent and hottest topics in space. With more than 40 sessions, the GNF at IAC2017 will give all participants the opportunity to learn all about recent developments and future endeavors in different fields.

We are looking forward to welcoming you among the active participants, either on the stage or in the audience. It is the interaction, the critical-constructive dialogue we want to foster through the IAF Global Networking Forum: **Meet. Share. Connect.**

Thank you.



Jean-Yves Le Gall

President,

International Astronautical Federation (IAF)

France

15:15- 16:15
Hall C&D

Commercial Nano-Satellites Constellation – The SAS Story

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. 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

A jet fighter pilot, Lt. Col (Res.) of the IAF, has over 20 years of experience in management, R&D and operation of state-of-the-art projects in Space Systems and Unmanned Aerial Systems, among those acting as a deputy sq. commander and leading the MEIDEX experiment on Space Shuttle Columbia (STS-107) as the project manager for Israel's first astronaut flight, managing Israel's satellite project (such as Ofeq, Tecsar) and more.

16:45- 17:30
Hall C&D**Strategic Partnership of Energia and Boeing in Space**

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

At an extraordinary meeting of shareholders of OAO NPO Energomash after V.P. Glushko, which was held on October 4, 2010, OAO RSC Energia was empowered as the sole executive body - the Management Company, and V.L. Solntsev was appointed an Executive Director. The company's revenue by 2014 increased 4 times. There is a plan for the company development until 2020, which envisages an increase in revenues and the increased economic stability. According to the decision of the Board of Directors of OAO RSC Energia Vladimir Lvovich Solntsev on August 1, 2014 was appointed an acting single-member executive body (President) of the Corporation. On September 20, 2014 by the resolution adopted at OAO RSC Energia Extraordinary General Shareholders' Meeting, he was elected single-member executive body (President) of S.P. Korolev Rocket-Space Public Corporation Energia. On June 25, 2016, by the resolution of the Annual General Stockholders' Meeting a new version of the Corporate Charter was approved, introducing changes both to the name of company – Public Joint-Stock Company S.P. Korolev Rocket and Space Corporation Energia, and the name of the title of the chief executive officer of the Corporation – General Director. Steps are being taken towards

financial recovery of the company: a settlement has been achieved with Boeing, and the lawsuit brought by that company has been dropped without the right to reinstate the suit on same grounds; a deal with an investor is in progress to sell the sea-based space rocket launching system Sea Launch, etc. Under the direction of V.L. Solntsev, the company staff continued to operate the Russian Segment of the International Space Station, its space transportation support was provided using manned transportation spacecraft Soyuz MS and cargo spacecraft Progress MS developed with direct involvement of V.L. Solntsev. A long-term program of scientific and applied research and experiments onboard the ISS is being implemented. Multifunctional unmanned spacecraft have been developed and are operated. Work is under way to design and develop new modules for the ISS Russian Segment (Multi-purpose Laboratory Module, Node Module, Scientific and Power Module), advanced transportation system with a new-generation reusable manned transportation spacecraft, which, among other things, is to support interplanetary missions. Advanced unmanned spacecraft for various purposes are being developed. Under way are exploratory design studies into rocket and space systems with medium, heavy and superheavy launch vehicles, various modifications of upper stages, and other projects.



James (Jim) H. Chilton

Senior Vice President, Space and Missile Systems, Defense Space
The Boeing Company
United States

Chilton began his career with Boeing in 1984 as a turbo machinery development engineer at the Rocketdyne division in Canoga Park, Calif. He holds a bachelor's degree in mechanical engineering from Washington State University and a master's degree from the Florida Institute of Technology. He also completed the systems acquisition course for general and flag officers at Defense Acquisition University and is a graduate of Harvard Business School's advanced management program. From October 2016 to the July 2017 restructuring of Boeing's space and defense business, Chilton led Network & Space Systems (N&SS), which included much of the current Space and Missile Systems portfolio. Prior to that role, starting in 2013, he was vice president and general manager of Strategic Missile & Defense Systems within N&SS. Previously, Chilton served as vice president and program manager for Exploration Launch Systems and led Space Launch System (SLS), Boeing's heavy lift launch vehicle program. Before SLS, Chilton served as program manager for the Checkout, Assembly and Payload Processing Services (CAPPS) contract at NASA's Kennedy Space Center. He led final assembly and testing of space shuttle and expendable launch vehicle payloads, including hardware destined for the International Space Station. Now Jim Chilton is senior vice president of the Space and Missile Systems division of Boeing Defense, Space & Security (BDS). Chilton was appointed to this role in July 2017 as BDS announced a new operating structure to sharpen focus on key markets and move faster to meet customers' needs. The Space and Missile Systems portfolio includes the International Space Station; government and commercial satellite systems; a range of missile defense and strategic deterrence systems including Ground-based Midcourse Defense, Missile Defense National Team, and the Minuteman Intercontinental Ballistic Missile (ICBM) System; and a variety of weapons programs for U.S. and allied military customers.

17:30- 18:00
Hall C&D

EU Ambitions in Space

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 What Future Role for Europe in Exploration?
Hall C&D

During this presentation, the following items will be discussed:

- 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)

**Speaker:**

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

Rivasseau currently serves as Special Envoy for Space and Head of Security Policy and Space, European External Action Service, Brussels. He previously served as minister counsellor and deputy chief of mission (DCM) of the Delegation of the European Union in the United States (2011–2015); minister counsellor, DCM, of the Embassy of France in Washington, D.C. (2007–2011); permanent representative of France to the Conference on Disarmament in Geneva (2003–2006); and assistant secretary for press and communication and spokesperson of the French Ministry of Foreign Affairs (2000–2003). Prior to this, Mr. Rivasseau took part in negotiations on the Comprehensive Nuclear Test Ban Treaty and the Ottawa Convention banning antipersonnel landmines, in addition to serving in the French Bureau of the United Nations and other International Organisations (1993–1995). Born in Bordeaux, France, Mr. Rivasseau graduated from the Bordeaux Institute of Political Studies and holds a Ph.D. in law from the University of Bordeaux I. He is a graduate of the National School of Administration and also holds a degree of Roman languages from the University of Bordeaux III. He speaks fluent English, Spanish, and German and has basic knowledge of Russian.

Tuesday, 26 September

09:30- 12:30
Hall D

IAF Industry Day – Deep Dives Sessions

These Deep Dive Sessions will include an exciting series of fast-paced, Ted-like talks, on a variety of topics related to Space Traffic Management.

Organised by:

IAF Industry Relations Committee



Moderator:



Eric Stallmer

President,
Commercial Spaceflight Federation
United States

Eric Stallmer is the President of the Commercial Spaceflight Federation. The CSF is the largest trade organisation representing over 75 organisations, dedicated to promoting the development of commercial spaceflight, pursue ever-higher levels of safety, and share best practices and expertise throughout the industry. As CSF President, Stallmer develops the strategy, plans and communications for the organisation and works closely with CSF member companies to advocate for the commercial space industry. Prior to joining CSF, Stallmer served as the Vice President of Government Relations at Analytical Graphics Inc. (AGI). Stallmer joined AGI in 2002, during his time at AGI, Stallmer represented AGI's commercial off-the-shelf (COTS) products and technology to defense, intelligence, Congress, and civil government sectors within the aerospace industry. Stallmer came to AGI from The Space Transportation Association (STA), a non-profit, industry trade organisation providing government representation to companies with a vested interest in the U.S space launch industry. Prior to that, Stallmer worked on Capitol Hill in the office of then Congressman Tom Coburn. For over two decades, Stallmer has served as an Officer in the United States Army and Army Reserves. He was awarded the Bronze Star Medal for meritorious service while engaged in combat operations during Operation Iraqi Freedom. He is currently assigned to the Pentagon in the office of the Deputy Chief of Staff Army for Logistics, G-4. Stallmer earned a Masters of Arts Degree in Public Administration from George Mason University and a Bachelor of Arts Degree in Political Science and History from Mount Saint Mary College. He and his wife Amy live in McLean, Virginia with their three children, Charlie, Billy and Catherine.

09:30- 10:00

Deep Dive: Space Communications and Surveillance for National Security

Speaker:



Paul Sheridan
CEO,
Optus Satellite
Communications
Australia

10:00- 10:30

Deep Dive: Reusability of Launch Vehicles & Small Sats

Speaker:



Rob Meyerson
President,
Blue Origin
United States

10:30- 11:00

Deep Dive: Space Situational Awareness

Speaker:



Travis Langster
Vice President,
Analytical Graphics Inc.
United States

11:00- 11:30

Deep Dive: Impact of Constellations

Speaker:



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

11:30- 12:00

Deep Dive: Near-Earth Objects

Speaker:



Peter Marquez

*Vice President for Global Engagement,
Planetary Resources
United States*

Peter Marquez is the Vice President for Global Engagement at Planetary Resources. He is responsible for Planetary's outreach and cooperation with all governments to support the development, launch, and operation of the company's spacecraft and missions. From 2007 to 2010 Peter served at the White House in the National Security Council as the Director for Space Policy where he led the development of the 2010 U.S. National Space Policy. Peter oversaw the development, implementation, and coordination of the space policies of Presidents Bush and Obama. Peter's policy responsibilities, in addition to space, included critical infrastructure protection, and military intelligence activities. Peter also oversaw regional security issues, focusing on Asia. While at the White House, Peter began the initiative that created the U.S.-Japan strategic space cooperation. Earlier, Peter served as a Special Assistant to the Under Secretary of Defense for Policy. Peter's duties in that position included oversight of the Department of Defense's operational special access programs. Peter also worked in various positions in Office of the Secretary of Defense and the United States Air Force with responsibilities for policy, operations, requirements, and acquisition of classified space programs. Peter was born in California and received a bachelor's degree in political science in 1998 and master's degree in science and technology policy in 2000 from George Washington University.

12:00- 12:30

Deep Dive: Clean Space

Speaker:



Fritz Merkle

*Member of the Management Board,
OHG
Germany*

14:30- 15:30
Hall D
Disruption of New Starts on the Asia Pacific Space Turf

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:


Michael Brett
 CEO,
 QxBranch
 United States



Flavia Tata Nardini
 CEO,
 Fleet
 Australia



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



Tim Parsons
 CEO,
 DeltaV Spacehub
 Australia



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



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

15:30- 16:30
Hall D

Opening the Market Aperture for New Start Opportunities

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:



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



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



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



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*



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



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

16:30- 17:30
Hall D

**Space 4.0 – Building Space Entrepreneurship
 Ecosystems**

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 groundbreaking 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 panelists 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:



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



Tytus Michalski
Managing Partner,
 Fresco Capital
 China



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



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

Wednesday, 27 September

09:30- 10:30
Hall C

Space Technology Education and Training Exchange Platform Open to the World

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). 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. Up to now, CSI has developed 7 post-doctoral research centres 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. 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)



Speaker:



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

Dr. Li Ming is the Vice President of China Academy of Space Technology (CAST). He works also as Executive Vice President of Shenzhou Institute, which is a unique institution in China for international education and training in space technology and application. He is member of International Academy of Astronautics. He is also the Chairman of Space System Expert Group of CNSA, consultant on Space Debris Program of CNSA, member of Earth Observation and Navigation Key Program committee of Ministry of Science and Technology.



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

**09:30- 11:30
Hall D****The Evolving Relation Between Public Procurement and Industry on Space and Defence Programmes with Strategic Perspectives Towards Respecting Costs and Schedules on Large Contracts**

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.

Organised by:

European Space Agency (ESA)



Opening Speaker:



Christopher Pyne
*Minister of Defence Industry,
Government of Australia
Australia*

Speakers:



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



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



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



Giuseppe Morsillo
*Secretary General,
Eurosace
France*



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



David Bond
*Chief Operating Officer,
BAE Australia
Australia*



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



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



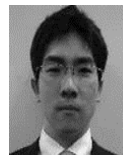
Ron Schwenn

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



Roy Zacharias

*Executive Director, Financial
Investigation Service,
Australian Department of
Defence
Australia*



Hiroyuki Kishindo

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



Andy Cornfield

*Finance Director,
BAE Australia
Australia*



Steven R. Miller

*Expert Acquisition and
Procurement Issues,
Lockheed Martin
United States*



Vincenzo Giorgio

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

Moderator:



Pieter van Beekhuizen

*Special Advisor to the Head of the
Industrial Policy and Auditing
Department,
European Space Agency (ESA)
France*



Karina Miranda Sanchez

*Head of the Industrial Audit
Section,
European Space Agency (ESA)
France*

Rapporteur:

10:30- 11:00
Hall C

Spaceport Norway 2018: Towards a Space Society

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



Speakers:



Ole Dokka

*Executive Director,
Spaceport Norway
Norway*

Ole Dokka is a multidisciplinary leader and strategist, working in the intersection of innovation, design and technology, since the beginning of the internet economy in 1994. He has held leadership positions in several big corporations in Norway, among them Telenor and the global energy company, Statoil. In Statoil he was responsible for developing and implementing digital and media strategies, new visual and interactive brand identity and a new global marketing programme. This work received multiple Norwegian and international awards. From 2012 he joined the corporate innovation team and headed up Statoil's open innovation efforts globally. He left Statoil in 2014 to take up a new position as Strategy Director in We Are Int., a digital business design & development company based in Oslo. In March 2016 he left We Are Int, and founded Rocket Grace Group in order to pursue specific new opportunities and lay the strategic foundation for more projects and partnerships in the space, health and education sector. The first major project Rocket Grace and Ole Dokka developed and delivered, was a new business and innovation conference called Spaceport Norway. The new initiative was first announced at IAC 2016 in Guadalajara, Mexico. In June 2017, Spaceport Norway was arranged for the first time in Stavanger, an international conference exploring business opportunities enabled by science and technology from the global space sector. It attracted speakers and delegates from a wide range of companies and organisations, including NASA, United Nations (UNOOSA), European Space Agency, Norwegian Space Centre, European Commission, Kongsberg Group, Statoil and many more. Ole Dokka is based in Stavanger, Norway, where he lives with his family of 5 and a lot of surfboards, skateboards and snowboards.

**Sebastian Straube**

Founder & CEO,
Interstellar Ventures
Germany

Sebastian Straube is Founder and CEO of Interstellar Ventures, an emerging Venture Capital Fund and New Space Ecosystem Builder in Europe and globally. He is former co-founder and CEO of BSD Germany, a leading Berlin based international advisory company helping multinational corporations to integrate sustainability into their business models and supply chains. Beside running Interstellar Ventures, he is a business mentor in leading international technology startup acceleration programs like MIT Enterprise Forum Warsaw and Singularity University Labs in Mountain View. In 2012, Sebastian was a Member of the Social Responsible Investments Working Group, which was established at the Polish Ministry of Commerce by the former Prime Minister of Poland and the current President of the European Council, Donald Tusk.

11:00- 11:30
Hall C

SpaceTech – Space Systems and Business Engineering

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 program.

Organised by:

Graz University of Technology (TU Graz)



Speakers:



Otto Koudelka

Head of the Institute of Communications Network & Satellite Communications and Space Tech Director,
 Graz University of Technology (TU Graz)
 Austria



Ed Ashford

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

11:30- 12:00
Hall C**oG Summit – Space Diplomacy in the Age of NewSpace**

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, OG Summit, which was launched on the sidelines of the UN General Assembly on 18th September 2017 towards OG 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
Hall D

The Role of Space Agencies in Support of Emerging Countries

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)



Speaker:



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

Panelists:



Roberto Battiston
President,
 Italian Space Agency (ASI)
 Italy



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



Seishiro Kibe

Advisor,
Japan Aerospace Exploration
Agency (JAXA)
Japan



**Francisco Javier Mendieta
Jiménez**

General Director,
Mexican Space Agency
(AEM)
Mexico



Thomas Djamaluddin

Chairman,
Indonesian National
Institute of Aeronautics
and Space
Indonesia



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 Astronautical
Federation (IAF)
Republic of Korea

12:00- 12:30
Hall C

Shaping the Future with Ariane 6

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



Speakers:**Marc Valès**

*Head of Future Programmes,
Ariane Group
France*

Marc is playing since almost thirty years with all elements of European launchers family – Ariane 1 to 5, Soyuz and Vega – both in launch vehicle and ground segments. Starting off as a test engineer, he has worked as system engineer, project manager, launch operation manager, head of production and programme manager. In his current position he is in charge of developing new launchers programmes and business for the brand new ArianeGroup 50/50 joint venture, both in Europe and internationally. Arriving from Safran/Snecma just after a strong involvement in 2012 and 2014 European Space Councils preparations from French agency programme directorate, Marc alternatively worked for national agencies and European industries, living in locales as different as New Caledonia, Guiana, Normandy, Toulouse, Rome and Paris. Following childhood in Africa, Marc became engineer from Institut Polytechnique, Grenoble in 1987, and complete the Master of Applied Mathematics, in Montpellier 1988. A proud EU citizen, who lived on 5 continents, Marc is highly motivated by our global world empowerment and innovation opportunities.

**Jacques Breton**

*Senior Vice President,
Sales & Business Development,
Arianespace
France*

Jacques Breton joined Arianespace in 1985 in the Marketing & Sales division and participated in the start-up of Starsem (the company charged with marketing Soyuz launches at Baikonur Cosmodrome) as Arianespace's Deputy Director – Technical and Industrial. He was assigned to Arianespace's U.S. subsidiary in Washington, D.C., as Director of Engineering from 1999 to 2003. He then returned to Arianespace headquarters in Evry as the division head responsible for technical support and business development in the sales directorate and took his present position in 2009.

14:30- 15:30
Hall C

Reducing Diversity Gaps – Inducing Space Environment Dynamic with Benefits for a Country's Economy, Education, Strategy and Sovereignty

Diversity goes beyond ethnicity and includes also gender, age and multidisciplinary. “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



Susmita Mohanty
 CEO and Co-
 Founder,
 Earth2Orbit
 India



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



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



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

14:30- 16:00
Hall D

A Low Earth Orbit Space Station - the Way Forward

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*



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



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



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



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



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
Hall C
New Trends of Commercial Developments in Space Domain

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


GLAVKOSMOS
Speakers:


Aleksandr Serkin
Director General,
 GK Launch Services
 Russian Federation



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



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



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



MODERATOR
Denis Lyskov
Director General,
 Glavkosmos
 Russian Federation

16:00- 17:00
Hall C

SpaceGen Entrepreneurs

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.

Organised by:

Space Generation Advisory Council (SGAC)



Startup Ecosystem Panel Speakers:



Carissa Christensen
 CEO,
 Bryce Space and
 Technology
 United States



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



Troy McCann
 Founder and Managing
 Director,
 MoonshotX
 Australia



MODERATOR

Arnau Pons

*Space Generation Advisory Council,
Purdue University
United States*

Entrepreneur's TED-style talk Speakers:



Anastasiia Volkova
*CEO and Founder,
FluroSat
Australia*



Marco Witzmann
*Co-Founder and CEO,
Valispace
Germany*



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

16:00- 17:30
Hall D

Deep Space Exploration Post 2024 Scenarios

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 lessons 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:



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



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



Pascale Ehrenfreund
President,
 German Aerospace Center
 (DLR)
 Germany



Igor Komarov
Head,
ROSCOSMOS
Russian Federation



Roberto Battiston
President,
Italian Space Agency (ASI)
Italy



Sylvain Laporte
President,
Canadian Space Agency (CSA)
Canada



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



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



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



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
Hall C

The 50th Anniversary of the Outer Space Treaty: Global Governance for Space Activities

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)



UNITED NATIONS
 Office for Outer Space Affairs

Speakers:



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



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



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



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

Thursday, 28 September

09:30- 10:30
Hall C

Advancing Australia's Space and Spatial Capability

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 2026Agenda 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:



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



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*

09:30- 10:30
Hall D

Promoting Space Access through Global Partnerships

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:



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



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



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



Eric Stallmer
President,
 Commercial Spaceflight
 Federation
 United States



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



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

10:30- 11:30
Hall C

Pushing the Boundaries of Research – International Science ‘Made in Germany’

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:



Stephan Ulamec

PHILAE Project Manager,
 German Aerospace Center (DLR)
 Germany

S. Ulamec has about 25 years of experience in the development and operations of space systems and instruments. After finishing his PhD at the University of Graz/Austria, 1991, he worked as a Research Fellow at the European Space Agency, ESA/ESTEC, until 1993 and is since then at the German Aerospace Center, DLR, in Cologne. Besides of his activities in system engineering and project management of the Rosetta Comet Lander, Philae, he is engaged as payload manager of MASCOT for the Japanese Hayabusa 2 mission to asteroid Ryugu (arriving 2018). He was involved in various studies for in-situ packages for space missions like ExoMars-Humboldt, MarcoPolo-R or AIDA/AIM.

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

Since 3/2016 - Head of the Center of Applied Space Technology and Microgravity (ZARM), Professor for Fluid Mechanics at the Faculty of Production Engineering – Mechanical Engineering & Process Engineering – of the University of Bremen, Germany. From 12/2011 to 2/2016 Professor for Simulation of Nano and Microflows at the Institute of Fluid Mechanics of the Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany. From 10/2008 to 11/2011 Postdoctoral Fellow at the Max Planck Institute for Dynamics and Self-Organisation, Göttingen, Germany. From 08/2006 to 05/2008 Visiting Scholar School of Mathematical and Statistical Sciences at the Arizona State University, USA. From 01/2005 to 10/2008 Research Assistant at the Department of Applied Physics, Universitat Politècnica de Catalunya, Spain.

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

Matthias was born in Frankfurt/Main - Germany in 1962. He is a graduated engineer in Telecommunication and focused his study to optical communication networks. In 1988, he started his career as Head of Projects at ANT Nachrichtentechnik / Bosch Telecom GmbH, Germany, for the Global Defense Markets with key account for the German Air Force. Later on the hold leading job positions at the telecom industry in Germany, like GAH Communications, where he was the Sales Director for Telecom Markets with key account Deutsche Telecom, Siemens and Nortel Networks. In 2004, he took the position of Managing Director for SELEX Communications in Germany, a Finmeccanica Company. He is a member of AFCEA and American Chamber of Commerce in Germany. Matthias Motzigemba is now working at TESAT Spacecom GmbH in Germany since 2011. Today he is in TESAT responsible for the business line of Laser Products in the role of a Director.

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

Since 2015 University of Bremen - Chair Space Technology German Aerospace Center (DLR) - Institute for Space Systems:

- Payload and Systems Engineer for the BECCAL payload on the International Space Station (ISS) (Cold Atoms and Atom Interferometry)

- Payload and Systems Engineer for MAIUS-2 & MAIUS-3 sounding rocket payloads (Cold Atoms and Atom Interferometry)
 - Vacuum System Engineer for a Compact Vacuum chamber for an Earth Gravity Gradiometer based on Laser-Cooled Atom Interferometry (ESA Study)
- 2011 - 2015 University of Hanover - Institute of Quantum Optics
- German Aerospace Center (DLR) - Institute for Space Systems
 - Mechanical, thermal and systems engineer for the MAIUS-1 sounding rocket payload (Cold Atoms and Atom Interferometry)
 - Vacuum System Engineer for a Compact Vacuum chamber for an Earth Gravity Gradiometer based on Laser-Cooled Atom Interferometry (ESA Study)



MODERATOR

Gerd Gruppe

*Member of the Executive Board,
German Aerospace Center (DLR)
Germany*

Since 1 April 2011, Dr. Gerd Gruppe is Member of the DLR Executive Board, responsible for the German Space Administration. Born in 1952, he grew up near Aachen in the very Western part of Germany. He received a degree in mining from RWTH Aachen University. Upon completion of an internship at the Bureau of Mines in Munich, he obtained a doctorate degree in Energy Marketing at Augsburg while continuing to pursue his career. He then transferred to the Bavarian State Ministry for Economic Affairs, Infrastructure, Transport and Technology. Initially, he was responsible for promoting research and for technology transfer, and later had his first professional experience with space. In the late 1980s he was involved in the establishment of the German Space Operations Center (GSOC) at DLR's Oberpfaffenhofen site. Later, as Head of the Department of Research, Innovation and Technology at the same ministry, he greatly advanced the development of Bavaria as a location for space activities, particularly with his involvement in the Galileo Control Centre and the world-renowned Robotics and Mechatronics Center – both based at DLR Oberpfaffenhofen.

**10:30- 11:30
Hall D****Space Mining – Law, Politics, Perspectives**

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 be 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:*****Steven Freeland***

Director,
International Institute of Space Law (IISL)
Australia

Steven Freeland (Professor of International Law at Western Sydney University, Australia) has 15 years of experience in international space law and belongs to the Board of Directors of the International Institute of Space Law. He is one of the most renowned space lawyers of the world and a specialist in questions of space mining.

***Sagi Kfir***

Co-Founder,
Deep Space Industries
United States

Mr. Sagi Kfir, as Co-founder of Deep Space Industries in the United States of America strongly supports the industries' view that aims at opening opportunities for space mining in the future. He will lay out the respective legal opinion supporting this perspective.



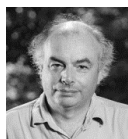
Olavo de Neto Bittencourt
Professor,
Catholic University of Santos
Brazil

Prof. Olavo de Neto Bittencourt from the Catholic University of Santos and the University of San Paulo in Brazil will particularly highlight possible critical remarks towards industry perspectives.



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

Mr. Yvon Henri is Chief of Space Services Dept. at ITU and will approach questions of using resources from outer space from the interesting telecommunication perspective.



Ian Crawford
Scientist & Professor,
Birkbeck College
United Kingdom

Prof. Ian Crawford, a highly respected scientist and Professor of planetary science and astrobiology at the Birkbeck College, London, who has a long list of publications and focuses his research on all aspects of astronomy, space exploration and astrobiology will present the ecological consequences of space mining.



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

Ms. Sophia Casanova, Vice-President of the Australian Society of Mining Science and PhD student at the School of Mining Engineering University of New South Wales, Australia, will bring another perspective in the multi-disciplinary approach of this panel since her research interests focus in resource and geological uncertainty modeling, with a particular focus on the application to the development of off-Earth water resources on Mars and asteroids.

11:30- 12:30
Hall C

Reusable Launch of Small Satellites Using Scramjets

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-scamjet-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)



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

Speaker:



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
Hall D

The Growth Challenges of Space Start-Ups: The Role of Private and Public Investors

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

12:45- 13:45
Hall D

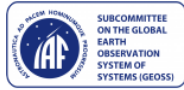
The Status of Citizen Science in Global Earth Observation Systems

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)



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*

13:45- 15:15
Hall C**ESA's Jam Session & Moon Village Kick-off**

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

**13:45- 14:45
Hall D****Understanding the Universe and Improving Life on
Earth with Australian Astronomy**

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:

Alan Duffy
Professor,
University of Swinburne
Australia

Associate Professor Duffy is an astrophysicist at Swinburne University creating model universes on supercomputers to understand how galaxies like the Milky Way form and grow within vast halos of invisible dark matter. He is attempting to find this dark matter as part of SABRE, the world's first dark matter detector in the Southern Hemisphere at the bottom of a gold mine in Stawell, Victoria. He is co-investigator of SHINE, the first University-School partnership in Australia to send a student designed and constructed science experiment to the International Space Station.



Lisa Kewley

Director,

ASTRO 3D, Research School of Astronomy & Astrophysics,

The Australian National University

Australia

Professor Kewley was a Harvard-Smithsonian Center for Astrophysics Fellow and a NASA Hubble Fellow. In her role as a Professor and Australian Research Council Laureate Fellow at the Australian National University, she is implementing her scientific vision through her Centre of Excellence in All-Sky Astrophysics in 3D (CAASTRO-3D).

A large distributed research centre, CAASTRO-3D combines approximately 200 researchers covering six Australian universities, three partner observatories and seven international partner institutions.



Sarah Pearce

Deputy Chief,

CSIRO Astronomy and Space Science

Australia

Dr Sarah Pearce is Deputy Director of CSIRO Astronomy and Space Science. She leads CSIRO's involvement with the international Square Kilometre Array (SKA) project and has been Australia's Science Director on the SKA Board for the last two years. Prior to joining CSIRO in 2011, Dr Pearce was Project Manager for GridPP, the computing grid for particle physics in the UK. She is a graduate of International Space University, and has a PhD in instrumentation for X-ray astronomy.



Steven Tingay

Executive Director,

Curtin Institute of Radio Astronomy

Australia

John Curtin Distinguished Professor Steven Tingay is the Executive Director of the Curtin Institute of Radio Astronomy (CIRA) at Curtin University in Perth and leads the Curtin University node of the International Centre for Radio Astronomy Research (a Joint Venture with The University of Western Australia). He is an expert in astronomy and astrophysics, in particular radio astronomy. His areas of expertise encompass building and using radio telescopes, as well as astrophysical interpretation. Tingay likes designing challenging and novel experiments to answer fundamental questions about the Universe. Prof. Tingay has been at Curtin University since 2007, when he founded CIRA (now with an ERA ranking of 5 in "Astronomy and Space Sciences" and "Electrical and Electronic Engineering"). Before 2007 Tingay was at Swinburne University of Technology, CSIRO, and the NASA Jet Propulsion Laboratory in Pasadena. He has a PhD in Astronomy and Astrophysics from the Australian National University and an Honours degree in Physics from The University of Melbourne. Recently Tingay was on secondment in Italy for 18 months, as Director of the INAF Istituto di Radioastronomia in Bologna and Head of Section II of the INAF Science Directorate. Tingay was the Director of the Murchison Widefield Array (MWA) project, the only fully operational precursor telescope for the Square Kilometre Array. He has authored or co-authored over 200 papers in international refereed journals

and has attracted over \$80m of research funding. He is married, with two children, and is an athletics coach when not working.

**Chris Tinney**

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

Prof. Chris Tinney is a Professor at the University of New South Wales in the School of Physics, where he heads the Exoplanetary Science at UNSW research group. He is also Associate Dean (Research) for UNSW's Faculty of Science and a Non-Executive Director of Astronomy Australia Limited. He obtained his PhD from the California Institute of Technology, and has been an active researcher in the field of exoplanets and brown dwarfs for over 20 years. He has has worked in both the research infrastructure and University sectors, spending almost 14 years with the European Southern and Anglo-Australian Observatories. At the latter he led the IRIS2 instrument project, before being appointed Head of Astronomy. he moved to UNSW as a Professorial Fellow in 2007.

**Matthew Bailes**

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

Professor Matthew Bailes is an ARC Laureate Fellow and the Director of the ARC Centre of Excellence for Gravitational Wave Discovery (OzGrav). His team is designing the pulsar processor for the SKA and he is leading the MeerTime project on the MeerKAT telescope to time radio pulsars. He is a leading discoverer of Fast Radio Bursts using a range of telescopes.

14:45- 15:45
Hall D

Earth Observation - Trends and Paradigm Shifts

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



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



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



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



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

15:15- 15:45
Hall C**Orbital ATK and the Future of Space Logistics**

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

**Speaker:*****Frank L. Culbertson***

*President & General Manager,
Orbital ATK Space Systems Group
United States*

Frank Culbertson is President and General Manager of the Space Systems Group for Orbital ATK, a global leader in aerospace and defense technologies.

He leads a group responsible for human spaceflight, science, commercial communications and national security satellites as well as technical services for government customers.

These include some of the company's largest and most important programs such as NASA's Commercial Resupply Services (CRS) initiatives.

A U.S. Naval Academy graduate, Mr. Culbertson served 18 years as a NASA astronaut, flying three space missions as shuttle commander, pilot, and space station commander. He has been honored with numerous awards, including the Legion of Merit, the Navy Flying Cross, and the NASA Distinguished Service Medal.

15:45- 16:45
Hall D

The Value of Being Part of Space Exploration

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:

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

وكالة الإمارات للفضاء
 UAE SPACE AGENCY



مركز محمد بن راشد
 للفضاء
 MOHAMMED BIN RASHID SPACE CENTRE

Speakers:



Mohammed Al Ahabbi

*Director General,
The United Arab Emirates Space Agency
United Arab Emirates*



Salem Humaid Al Marri

*Assistance DG for Science & Technology Sector,
Mohammed Bin Rashid Space Centre (MBRSC)
United Arab Emirates*



Omran Anwar Sharaf

*Senior Director, Hope Probe Department,
Mohammed Bin Rashid Space Centre (MBRSC)
United Arab Emirates*



Saeed Al Gergawi

*Mars 2117 Program Executive Manager,
Mohammed Bin Rashid Space Centre (MBRSC)
United Arab Emirates*

15:45- 16:45
Hall C

Space and Sustainable Development Goals

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 organisations 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

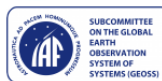
IAF Committee for Liaison with International Organisations and Developing Nations (CLIODN)



GROUP ON
EARTH OBSERVATIONS



UNITED NATIONS
Office for Outer Space Affairs



Speakers:



Aditya Agrawal

Director for Data Ecosystems Development,

Global Partnership for Sustainable Development Data (GPSDD)

United States

As Director for Data Ecosystems Development, Aditya Agrawal leads the GPSDD program in developing an ecosystem approach for harnessing the data revolution for sustainable development, while also supporting the development of in-country data ecosystems using whole-of-government and multi-stakeholder approaches. The GPSDD includes more than 200 organisations across sectors from around the world who are working to achieve the 2030 Agenda for Sustainable Development. He works at the confluence of strategy, stakeholder engagement and innovation to drive actionable change in how organisations access, share and use data. With a strong background in geospatial data and technology and open data, he works with organisations at multiple scales to develop programs that build institutional capacity, increase efficiency, deliver impact and lead to better decision making and action through coordinated approaches for how data is used across sectors. He has over 15 years of experience within both developed and developing country contexts providing a diverse range of

expertise including strategy, partnerships, data visualization and analysis, product design, innovation and program management.



Josef Aschbacher

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

Josef Aschbacher took up duty as Director of Earth Observation Programmes (D/EOP) on 1 July 2016 and as Head of ESRIN, ESA's centre for Earth Observation, near Rome, on 1 August 2016.

Born in Austria, he studied at the University of Innsbruck, graduating with a Master's and a Doctoral Degree in Natural Sciences. He became a Research Scientist at the university's Institute of Meteorology and Geophysics, 1985–89. Josef Aschbacher began his career in ESA in 1990 as a Young Graduate at ESRIN. From 1991 to 1993 he was seconded as ESA Representative to Southeast Asia to the Asian Institute of Technology in Bangkok, Thailand. From 1994 to 2001 he worked at the European Commission Joint Research Centre in Ispra, Italy, where he was, in his last post, the Scientific Assistant to the Director of the Space Applications Institute. He returned to ESA headquarters, in Paris, in 2001 as Programme Coordinator, where he was primarily responsible for advancing Copernicus activities within ESA. In 2006 he became Head of the Copernicus Space Office, where he led all activities for Copernicus within the Agency and with external partners, in particular the European Commission.



Gale Allen

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

Dr. Allen was the Deputy Chief Scientist at NASA Headquarters from 2011 – 2016, and is now the Acting Chief Scientist. She began her NASA career at the Kennedy Space Center as Chief of the Materials and Chemistry Branch, and served NASA as the Associate Director of Technology Programs and Commercialization. At NASA HQ, Dr. Allen managed the Bioastronautics (human research and life support) Research Program, served as deputy for the Human Systems Research and Technology Program, and Director of the Strategic Integration and Management Division before moving to her current position. Dr. Allen has received a NASA Space Act, two NASA Exceptional Service Medals, and an Exceptional Performance Award. She is on the Board of Directors of Women in Aerospace, an elected member of the Brenau University Board of Trustees, and is the Vice President for the Zonta Club of Fairfax County. Dr. Allen holds a B. S. in Chemistry, an M.S. in Chemistry from Old Dominion University, an MBA in Management from Brenau University, and a Doctorate in Business Administration with an emphasis in high technology partnership development from Nova Southeastern University.



Seishiro Kibe

Advisor,

Japan Aerospace Exploration Agency (JAXA)

Japan

Professor Kibe has dedicated his career to research in space structure control, life support engineering and space debris, and to furthering international cooperation through the IAF and other international activities. He was the Executive Secretary of the Local Organising Committee of the 56th International Astronautical Congress (IAC) held in Fukuoka in 2005. He is also a member of the Board of Trustees of the International Space University; Vice Chair of the COSPAR Panel on Potentially Environmentally Detrimental Activities; and a member of the Space Debris Committee of the International Academy of Astronautics (IAA). Professor Kibe obtained his BSc degree in Aerospace Engineering, an MSc degree in Structural Dynamics, and a Doctorate in Engineering, from the University of Tokyo. He joined the National Aerospace Laboratory of Japan (NAL) in 1981. In 1985 he was seconded to the Science and Technology Agency of the Government of Japan to support Japan's participation in the International Space Station program. In 2003, Professor Kibe was appointed Deputy Director for the Strategic Planning and Management Department of JAXA. In 2006 he was seconded as a Visiting Professor of the Asian Institute of Technology in Thailand. In 2009 Professor Kibe was appointed Director of the Innovative Technology Research Center of Research and Development Directorate at JAXA, and was Special Advisor to the Director from 2012 through 2017. Currently he is active as Advisor for JAXA international affairs. He received the Award for Exquisite Research Activity from the Minister of the Science and Technology Agency in 2000 and the Distinguished Service Award from Japan Society of Eco-Engineering in 2010. Professor Kibe has shown a strong desire to bridge the gap between the Asian space community, including emerging nations in the South East Asian area, and the international space community. In addition, he wants to stimulate international development activities related to space environment remediation issues and closed ecological life support systems for the interplanetary emigration of mankind, making full use of the IAF platform.



Stuart Minchin

GEO Principal of Australia/Chief of the Environmental Geoscience Division,

Geoscience Australia

Australia

Dr. Stuart Minchin is currently the Chief of the Environmental Geoscience Division of Geoscience Australia. The Environmental Geoscience Division (~200 staff) includes the National Earth and Marine Observations, National Geospatial Information, and Groundwater Branches. The Environmental Geoscience Division of Geoscience Australia is the centre of expertise in the Australian Government for environmental earth science issues and the custodian of national environmental geoscience data, information and knowledge. Stuart has previously been responsible for the Environmental Observation and Landscape Science (EOLS) research program in CSIRO and prior to that was a Principal Scientist with the Victorian Department of Sustainability and Environment.

He has an extensive background in the management and modelling of environmental data and the online delivery of data, modelling and reporting tools for improved natural resource management.

Stuart represents Australia in key international forums and is Australia's Principal Delegate to both the UN Global Geospatial Information Management Group of Experts (UNGGIM) and the Intergovernmental Group on Earth Observations (GEO). He also currently serves on the Editorial Board of the international Journal "Ecological Indicators".

**Jorge Del Rio Vera**

Scientific Affairs Officer,
United Nations Office for Outer Space Affairs
Austria

Del Rio Vera is Scientific Affairs Officer (Space Technology) in the United Nations Office for Outer Space Affairs. He holds a PhD in earth observation and a MSc in Telecommunications Engineering and has worked as an engineer in the two major European space endeavors, Galileo and Copernicus. He started his career in the Physical Oceanography Group of the University of Malaga where he used earth observation to study the Mediterranean Sea.

During this period, he had research stays at the Colorado State University, the University of British Columbia and the NASA Goddard Space Flight Centre, which gave him better insights into how satellites and techniques needed to process their data are used. Later, he joined the European Space Agency, working on Envisat, the largest earth observation satellite ever built, and Copernicus, the biggest European earth observation programme. He has also worked for the NATO Underwater Research Centre applying space knowledge to underwater systems and the European Maritime Safety Agency using satellites to identify polluting ships. Then, he moved to the European Global Navigation Satellite Systems Agency, the European agency in charge of the exploitation of Galileo, the European global navigation satellite system, where he worked setting up the operations of the Galileo Security Monitoring Centre until he joined the Office for Outer Space Affairs in the United Nations (UNOOSA), as a Scientific Affairs Officer, to promote international cooperation in the peaceful uses of outer space.

**Chiaki Mukai**

Senior Advisor,
Japan Aerospace Exploration Agency (JAXA)
Japan

Dr. Chiaki Mukai is Japan's first female astronaut, and currently JAXA Senior Advisor and Vice President of the Tokyo University of Science. This year Dr. Mukai has been appointed as Chair of the Scientific and Technical Subcommittee of the United Nations Committee on the Peaceful Uses for Outer Space, which addresses the global community's attempts to reduce space debris, to realize the long-term sustainability of outer space activities and the SDGs, Sustainable Development Goals. As medical doctor and the first female astronaut from Asia, Dr. Mukai flew as a Payload Specialist on the Space Shuttle Columbia (STS-65/Second International Microgravity Laboratory: IML-2) in 1994, and on the Space Shuttle Discovery (STS-95) mission in 1998, and conducted various life science and space medicine experiments.

16:45- 17:45
Hall D

Space Optics: Next Steps of Optical Communications Enhancing Our Interconnected World

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:



Matthias Motzigemba

*Director Laser Products,
 TESAT Spacecom GmbH
 Germany*

Matthias was born in Frankfurt/Main - Germany in 1962. He is a graduated engineer in Telecommunication and focused his study to optical communication networks. In 1988, he started his career as Head of Projects at ANT Nachrichtentechnik / Bosch Telecom GmbH, Germany, for the Global Defense Markets with key account for the German Air Force. Later on, Matthias hold leading job positions at the telecom industry in Germany, like GAH Communications, where he was the Sales Director for Telecom Markets with key account Deutsche Telecom, Siemens and Nortel Networks. In 2004, he took the position of Managing Director for SELEX Communications in Germany, a Finmeccanica Company. He is a member of AFCEA and American Chamber of Commerce in Germany. Matthias Motzigemba is working at Tesat-Spacecom GmbH & Co.KG in Backnang/Germany since 2011. Today he is responsible for Communication Systems in the role of a Director in Tesat.



Shiro Yamakawa

*Optical Engineer,
 Japan Aerospace Exploration Agency (JAXA)
 Japan*

Dr. Shiro Yamakawa was born in 1969 in Tokyo, Japan. He received the B.E. degree in electric engineering and the M.E. and Ph.D. degrees in material science from Keio University, Tokyo, Japan, in 1992, 1994, and 1998, respectively. In 1997, he joined the National Space Development Agency of Japan, where he was engaged in research and development of inter-orbit laser communications. He is now the mission manager of JDRS Project Team, Space Technology Directorate I., Japan Aerospace Exploration Agency (JAXA). Dr. Yamakawa is a member of the Japan Society of Applied Physics, the Institute of Electronics, Information and Communication Engineers of Japan, and the Japan Society for Aeronautical and Space Sciences.



Gerd Rudolf Kraft

*Head of the Department of Commercialisation,
German Aerospace Centre (DLR)
Germany*

- 1973 – 1981 Study of Physics, Universität Marburg and University of Manchester
- 1981 Diploma Degree in Physics, Universität Marburg
- 1981 - 1985 Ph.D., Max-Planck-Institut für Strömungsforschung (Fluid Dynamics) and Universität Göttingen
- 1986 – 1992 Space Industry, ERNO Raumfahrttechnik Bremen
- 1992 – 1997 Head of Department System Analysis, Technology Planning, Technology Transfer of German Space Agency DARA, Bonn
- since 1997 Deutsches Zentrum für Luft- und Raumfahrt DLR (German Aerospace Centre) in Bonn
- 1997 – 2000 Head of DLR Department Commercialisation
- 2000 – 2011 Head of German Delegation in ESA-Programme Board for Satellite Communications JCB
- 2002 Secondment to Canadian Space Agency (CSA) / Communication Research Centre Canada (CRC) and Telesat, Ottawa, Canada
- 2009 – 2016 Head of Department ESA-Affairs of DLR Space Administration
- since 2016 Head of Programme Directorate of DLR Space Administration



Phil Stimson

*Research Leader,
Assured Communications National Security Group
Australia*

Dr. Stimson has worked in his career as scientist in different university institutes and governmental institutions both in the US and Australia. He is specialized in leading R&D for new communications systems such as protected satellite communications, machine learning architectures for optimisation of communications as well as mobile ad-hoc radio networking. A new field of interest for him is laser communications.



Steve Townes

*Chief Technologist of the Interplanetary Network Directorate,
National Aeronautics and Space Administration (NASA)
United States*

Dr. Townes is the Chief Technologist of the Interplanetary Network Directorate at NASA's Jet Propulsion Laboratory (JPL). During his career at JPL he has been the Manager of the Communication Technologies and Standards Program Office, Deputy Manager of the Systems Concepts, Integration and Planning Office, Deputy Project Manager of the Mars Laser Communication Demonstration, Manager of the Communications Systems and Research Section, and an analyst for various projects related to the Deep Space Network. He is a Principal Engineer. He has also worked at The MITRE Corporation, Bedford, MA, in adaptive signal processing for communications and radar and at Stanford Telecommunications, Inc., Mountain View, CA, as an analyst for GPS and digital communications systems. He has a PhD, MS and BE in Electrical Engineering from North Carolina State University, Stanford University and Vanderbilt University respectively.



MODERATOR

Norbert Frischauf

*Scientist,
SCaN Member
Austria*



CO-MODERATOR

Stephanie Wan

*SCaN Member
United States*

16:45- 17:45
Hall C**New Generation Recoverable Satellite — An Advanced Space Platform for Space Environment Utilization**

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:*****Xin Liu***

Director Designer,
China Academy of Space Technology (CAST)
China

***Qi Kang***

Professor,
China Academy of Space Technology (CAST)
China

***MODERATOR******Li Ming***

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

Mr. LI Ming is a member of IAF IPC Steering Group. He is a member of International Academy of Astronautics. He is the Vice President and Chairman of Science & Technology Committee of China Academy of Space Technology (CAST). He is also the Chairman of Space System Expert Group of CNSA.

Friday, 29 September

09:30- 11:00 Astronauts Event
Riverbank 7&8

Astronauts from all over the world will be sharing their experiences in space and answering questions from the audience. Thos event will be open to the general public.

Speakers:



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



Pamela A. Melroy
*Senior Advisor, Space
 Strategy,
 Nova Systems
 United States*



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



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



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



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



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



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

11:00- 12:00
Riverbank 7&8

Global Real-Time Data Exchange Satellite Constellation Project

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 their cellphone, and we will never be along.

Organised by:

China Great Wall Corporation

**中国长城工业集团有限公司**
中国航天 China Great Wall Industry Corporation**Speaker:****Mu Jia***Deputy General Manager,*
China Great Wall Industry Corporation
China

14:00- 15:00
Hall A-D

Making Humans a Multi-Planetary Species

SpaceX CEO and Lead Designer Elon Musk will provide an update to his technical presentation from IAC 2016 regarding the long-term technical challenges that need to be solved to support the creation of a permanent, self-sustaining human presence on Mars.

Organised by:

Space X



Speakers:



Elon Musk
CEO and Founder,
SpaceX
United States



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

Notes

IAF Alliance Partners





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