

Special Session	Description
Twenty years of the International Space Station: Shaping the future of human space exploration	Celebrating anniversaries is always a chance to learn lessons and create future opportunities to surpass past achievements. On its twentieth orbital anniversary, exploitation of the International Space Station approaches a major turning-point, involving private actors and customers. Join a collective debate with top ISS program representatives, astronauts and experts to discuss how its social, cultural, technical, operational and political heritage will shape the future of the human exploration beyond LEO.
Commercial Platforms on the International Space Station - New Low Cost Opportunities for Commercial and Institutional Missions	Welcome to the growing low Earth orbit market place, welcome to the International Space Station! New commercial platforms are available on humankind's largest space structure, providing new opportunities and value for you and your space mission. Learn more about your new opportunities and join us for the session. We make space missions possible!
Swarm Systems for Future Space Exploration	Future robotic in-situ space exploration is a precursor for human colonization of our solar system and search for life on other planets. In contrast to modern Curiosity or ExoMars rovers, future robotic platforms will likely consist of multiple units, forming swarms or teams to provide large spatial sensing aperture, increased efficiency, robustness, and autonomy. This special session is dedicated to the use of multi-agent approaches towards future space exploration, its advantages, challenges, and possible applications.
Earth Observation and Sustainable Development Goals – Views from a Decade with the Group on Earth Observations. Panel Discussion on Readiness for a Terrestrial Forecasting System	Enabled by broad, open data policies and practices for the U.S. Landsat Program, and the European suite of Sentinel satellites in the Copernicus Programme, tremendous advances have been made in technologies for global terrestrial observations - permitting analysis of global landscape change that was not possible, heretofore. This Expert Panel reflects how to achieve the United Nation's SDGs by concerted space activities and how to advance Earth observations to a terrestrial forecasting system.
Global Space Exploration: Increasing Benefits through International and Commercial Partnerships	In January 2018 ISECG released the third version of the Global Exploration Roadmap. The Global Exploration Roadmap reflects the common human space exploration vision of space agencies around the world. This session will open a dialogue on partnership opportunities to realise human and robotic space exploration for all stakeholders, including private sector space exploration actors and initiatives. The dialogue will include a discussion on technology challenges for Moon and Mars, and a collaborative approach to address corresponding gaps.
A global space partnership towards 2030: addressing the needs of Member States of the United Nations to achieve the Sustainable Development Goals	As adopted by UNISPACE+50, a "Space2030" agenda and implementation plan, with the goal to strengthen the contribution of space activities and space tools to the achievement of global agendas, will be provided to the General Assembly in 2020. A global partnership is needed to identify user needs and propose long-term space solutions. A high level panel will share their ideas and visions. Please come and join Mr. Jean-Yves Le Gall, President of CNES & IAF, Ms. Simonetta Di Pippo, Director of UNOOSA and other high level speakers to explore more on the global space partnership towards 2030.
Space needs everyone's ideas! Prizes and challenges in the space sector	"No matter who you are, most of the smartest people work for someone else." Prizes and challenges provide a way for space agencies to leverage great ideas from the public in order to broaden participation and bridge technology gaps. This panel will feature experts from NASA, ESA, and academia discussing successes and lessons learned on how organizations can best use these open innovation tools, and how individuals can find exciting opportunities to participate.
New Challenges for Planetary Protection	This special session provides a unique opportunity for members of the established scientific community, rising space powers, the private sector and advocates for human exploration to discuss whether or not the existing international consensus planetary protection policy maintained by COSPAR is sufficiently flexible to encompass their legitimate interests. If not, how should the international space community organize itself to develop a new planetary protection regime response to all of its needs and ambitions.
Quantum technologies for Space - Development and Applications	It's happening now. Quantum technologies promise to change the way mankind will communicate, navigate and compute in the future. The environment of space unleashes the full potential of quantum technologies, it offers the opportunity to achieve higher sensitivities, unprecedented stabilities and secure large-area free-space communication protocols. This special session combines these aspects with world class scientists and technologists to explore our future of quantum technologies in space. Join us for a glimpse on the future.
Open Source Space Workshop	Open source software is used virtually everywhere and open source hardware is getting more and more popular as well. Why not apply the philosophy of open source to space? This session is addressing everyone who is interested in open-source or is even running an open-source space project. We will discuss relevant open-source projects and the advantages and disadvantages of the open-source approach. Also we will provide possibilities to network and build an open-source community.
Commercial Suborbital: Opening the Aperture for Space Utilization	The doors to space are opening wide as commercial suborbital launches are beginning worldwide. How do you get from an idea to your payload in space? This session will provide an overview of the state of commercial suborbital rockets and balloons, then turn to an engaging discussion on how to get more researchers, students, and entrepreneurs personally engaged in this new frontier.
A Scientific "Wish List" for Research Facilities on the Moon	Humans will return to the Moon within the next decades. Now is the time for scientists and to join efforts and identify their discipline's potential goals on the moon and identify synergies with other scientific fields. This session is therefore aimed to explore the basic question of "How should a laboratory on the moon be equipped?", and we are soliciting inputs from researchers of any discipline holding an interest in exploiting the moon scientifically.
The golden age of the European Earth observation	The golden age of European Earth Observation is here. Copernicus is an outstanding program but there is more to this recent success that goes beyond the terabytes of data delivered to the ground daily. This panel will provide context to these efforts and highlight some suggestions to (a) shift Europe's 'grantpreneurs' to become 'entrepreneurs,' (b) the opportunity to attract 'scale-ups' to Europe, and (c) initiate the shift toward procuring commercial services.
#HiddenNoMore: Empowering Young Women in the Space Sector	The success of the movie Hidden Figures inspired a joint exchange program of 21st Century Fox and U.S. State Department called "#HiddenNoMore: Empowering Women Leaders in STEM". What is happening in the space industry and academia? Which are the issues faced by women from all over the world? The aim is to compare two different generations of women, pointing out the importance of mentorship. We want women in STEM fields to be hidden no more.
Space Chemistry: a Key to Fostering Space Exploration	Have you ever wondered if chemistry is different in space than on the ground? Can chemistry be performed using and taking advantage of the extreme conditions in space? Novel challenges of space research require an enhanced role for chemistry. The discussion will cover a wide range of pioneering chemistry technologies from space perspectives, including flow chemistry, photoelectrochemistry, and more novel trends in chemistry. These innovations are also facilitating Mars exploration, including human expeditions.
Challenges, Technologies and Solutions for Exploration of Icy and Ocean Worlds	Recent findings point to oceans on icy bodies across the solar system. Few mission designs exist for these bodies and few technologies have been prepared for exploration, yet scientific interest in such missions continues to grow. This session will explore barriers, informational gaps, requirements, and challenges for missions and technologies for exploration for these destinations. A broad spectrum of related topics will be addressed, from mission requirements and design considerations to detailed ice penetration modeling.
Innovative space craft concepts	Pave the way towards future orbital infrastructure. Translate the increasing needs of society into technological requirements for the next satellite generations and a robotic servicers. Create sustainability through "cooperative" spacecraft design to meet major demands like: adjustability to customers desires and mission needs, rapid development and production on demand, easy maintainability, debris avoidance and cost-efficiency.
Galileo, the European Global Navigation System	Jointly created by the EU and ESA, Galileo is an outstanding European system to provide independent high precision global positioning. The industrial team of OHB, which has been awarded the DGLR Wernher-von-Braun Team Award, will inform about the novel manufacturing process as well as status and performance of the Galileo system.
RF Spectrum for TT&C - Regulatory Framework vs. Needs of Operators	As there are hundreds of new satellites launched every year, how is there frequency need for TT&C accommodated in the regulatory procedures? What needs to be changed and what can be changed in the upcoming years to guarantee interference-free satellite communication? This panel discussion will bring together experts from the regulatory sector and the satellite developer community to discuss the efficient shared use of the available frequency spectrum.

Quantum Key Distribution – The Future of Cryptography	Cyber-security is set to be challenged by the advent of quantum computing requiring encryption methods with forward security to be implemented now rather than later. Satellite Quantum Key Distribution (QKD) is a method of delivering provably secure encryption keys globally. Information is encoded in the quantum properties of light such that any eavesdropping can be detected. During a panel discussion key stakeholders in the field will share their visions for the future of cyber-security.
Landsat-Copernicus Sentinel 2 Collaboration: Integrated operational land imaging to meet user needs worldwide	Come learn about the benefits of Copernicus/Sentinel 2-Landsat collaboration to the global user community! The U.S. Geological Survey and the European Commission will host a special session on current and future collaboration between the U.S. Landsat and European Sentinel-2 missions. This session will showcase the benefits of increased precision, revisit time, and long-term data continuity for land-imaging users. Come dialogue with European and U.S. officials to learn their land-imaging plans and better inform their collaboration!
Adoption of Space Technologies and Applications in Emerging/NewSpace Actors	What are the new vantage points through with emerging/NewSpace actors view their commitments and investments in novel space technologies and applications? How long is the road to the reality of adoption for novel users of new tools today created from space? Discover how emerging space/NewSpace efforts are creating new narratives for the adoption of space applications in tackling the challenge of sustainable development of their local communities by introduction of space-based technology.
Pitch your idea - The Innovation Pitch Challenge	If you want to present your company, your start-up, or your idea, apply to be part of the Innovation Pitch Challenge! If you are interested to hear about new approaches, new companies, innovative ideas, and perhaps are looking for investments opportunities, join us and meet the most innovative people in the space sector! And not only, you will have the chance to vote for the best challenge and select the winner!
Space for Sustainable Development	The Sustainable Development Goals (SDGs) adopted by countries in 2015 set 17 goals to end poverty, protect the planet, and ensure prosperity for all. Space science and technology can play a vital and innovative role in achieving the SDGs. Come and meet the experts, scientists, new businesses and innovators to find out about unique approaches to build a better world by 2030, using space as an enabling or enhancing resource that humanity has in hand.
How to build your future workforce with student industry projects, internships and strategic university partnerships	Recruiting skilled employees for the exponentially growing space industry is difficult, especially if you are not ensuring that you plan for future workforce needs through a combination of Student industry projects, internships and strategic partnerships with international universities. Attend this session to learn the key components of a workforce development program which is cost effective and effective and walk out of the session with a future workforce development framework specifically for your business.
The Nexus of Blockchain and Space	The World Economic Forum describes blockchain as one of the key technologies of the future. As a result, there is a proliferation of initiatives investigating the potential of blockchain in a variety of contexts beyond the well known bitcoin cryptocurrency application. The nexus of blockchain and space is an interesting and underexplored area. This panel seeks to introduce the IAC community to emerging projects in that nexus and some of the governance challenges that emerge.
2018: 10 years Columbus in Space and Delivery of Orion European Service Module	On February 7, 2008, the Space Shuttle Atlantis launched into space with Columbus on board. For ten years now, the space laboratory Columbus has been an integral and important part of the International Space Station ISS. In 2018 the Orion European Service Module is delivered to the Kennedy Space Center as latest European contribution to human-rated space exploration. Panelists from European and US industries and agencies will present their view on the past, actual and future European space exploration missions.
Latin America beyond LEO: Securing regional participation in the Moon Village	United towards the Moon: this session will be an open discussion about why Latin America and the Caribbean region should insert lunar research into its current space activities, actually limited to earth's orbit and in the end of the session we will draw conclusions and plan the steps ahead in order to secure a place for the region in the Moon Village. We will also discuss financial support architecture, opportunities and plans.
The European Research Council – funding opportunities for bright minds	Is an ERC grant for you? Come and find out. We will explain what the European Research Council is and who can benefit from its funding opportunities. As part of the European Commission's programmes supporting research, the ERC helps researchers in pursuing interesting and ambitious projects. The session will be a unique opportunity to ask grantees about their experience with the process and for experts to answer questions about the application and selection process.
The Design Sprint: How to Solve Almost Any Challenge In Less Than a Week	In this session, participants will learn about the Design Sprint by a Design Sprint Master, and get to experience first-hand how it works. A Design Sprint is an open-source, interdisciplinary workshop format with the goal of iterating on a soft- or hardware technical solution, product, service, process or solution to a strategic challenge, without the need to build and roll it out. The Design Sprint is based on the popular problem-solving method Design Thinking.
Space Journalism and outreach workshop	Commercial dreams stated as facts, result driven scientific research and biased reporting are just some of the challenges that journalists face today. The quality of media is not always easy to measure, but aiming for objective view and scientifically correct facts are still the basic ingredients for trustworthy articles and press releases. The aim of this special session is to take a look at some of the challenges the space media is facing these years. The panel offers viewpoints from both an outreach specialist making a press release and a journalist using it for different purposes. There will also be time for group discussion to broaden the perspectives. The session is intended for media professionals and anyone else interested in the subject. You can also ask questions or suggest discussion subjects in Twitter with #iac2018journalism.