

space for inspiration



BILBAO
29-31 October
2018

be part of the story

PROGRAMME

PRE-CONFERENCE

Mon, 29 October 2018

18:30 **Getting ready – Registration**

Networking – Wine & Mingle

Opening of exhibition “Space avenues”

Meet our exhibitors: multi-disciplinary start-ups, academia and space and non-space savvy entrepreneurs.

21:00 **End**

(*) DIGITS: Disruptive Ideas Growing Innovation Towards Sustainability

Insights into the emerging space ecosystem built by visionaries, and business opportunities with ESA in a global marketplace. Targets: low-Earth orbit and the Moon.

08:00 **Registration**

09:00 **Kick-off and welcome**

Moderator: Sarah Cruddas

Opening remarks by ESA Director General Jan Wörner and Head of Spanish delegation at ESA Juan Carlos Cortes Pulido

09:15 **Pave the way**

Current achievements and future steps of [ESA's space exploration programme](#). David Parker, Director of Human and Robotic Exploration, will highlight opportunities to work with ESA for space exploration shareholders.

09:30 **Why most organisations can't innovate and what to do about it**

Mark Stevenson is an author, broadcaster and expert on global trends. He is one of the world's most in demand thinkers on the interplay of technology and society.

10:10 **Space goes commercial (presentations)**

Not far from Earth, there is an emerging ecosystem for commercial research and applications. Achievements, concerns and future plans for the International Space Station – and beyond.

Moderator: Bernhard Hufenbach, ESA

Presentations from:

- Oliver Juckenhoefel, Airbus Defence and Space
- Walter Cugno, Thales Alenia Space
- Timo Stuffer, OHB
- Jeffrey Manber, Nanoracks

10:50 **Coffee break & networking opportunities**

11:20 **Space goes commercial (panel discussion)**

- Sam Scimemi, NASA
- Christian Ziach, High-Tech Gründerfonds Management
- Ken Savin, CASIS
- Sam Waes, Verhaert
- Sam Adlen, Satellite Applications Catapult

DIGITS – New elements for rocket systems in Commercial Orbital Transportation Services (COTS)

Raúl Torres, PLD Space

12:00 **Exploring life in the universe**

[Ray Jayawardhana](#), Dean of Arts & Sciences and Professor of Astronomy at Cornell University offers an innovative perspective on one of the most inquisitive questions driving the exploration of space – life in the universe.

12:30 **The exploration effect – benefits for society and business**

Advice on how to bring user communities to the space exploration world. Established companies will pitch leading examples and discuss key factors for success in renewable energies and human health.

Moderator: Sarah Cruddas

- Rudy Aernoudt, European Commission DG-GROW
- Marybeth Edeen, NASA
- Francesc Gòdia, Universitat Autònoma de Barcelona, MELISSA
- Barbara Ghinelli, STFC-UK

DIGITS - SENER 50 years in Space and application in Renewable Energy and 50 years in Space and application in Human Health

Juan Ruiz de Gopegui and Eduardo Urgoiti, SENER.

13:15 **Lunch break & networking opportunities**

14:15 Splinter sessions

	Splinter 1	Splinter 2	Splinter 3
14:15	<p>Ready to fly with ESA commercial partners</p> <p>Hosted by ESA</p> <p>Chair Cynthia Bouthot Space Commerce Matters</p> <p>Hilde Stenuit ICE-Cubes, Space Applications Services</p> <p>Marco Berg Dream Chaser for Europe, OHB</p> <p>Alessandro Donati Bioreactor Express, Kayser Italia</p> <p>Gary Lay Surrey Satellite Technology</p> <p>Mathew Cosby Goonhilly Earth Station</p> <p>Christian Steimle Airbus, Bartolomeo</p>	<p>The opportunities of Space Resources utilisation</p> <p>Hosted by Luxembourg Space Agency</p> <p>Chair Marc Serres Luxembourg Space Agency</p> <p>DIGITS</p> <p>Ann Delahaye QinetiQ, Highly Efficient Water Treatment System</p> <p>Andreas Dietz Fraunhofer, Modern Electrochemistry in Space</p> <p>Andrea Jaime OHB, Europe goes to the Moon</p> <p>Luis Ferreira Airbus, The Moonrace</p>	
15:00	Change to the next splinter sessions		
15:10	<p>Investors & Space Exploration Masters</p> <p>Hosted by ESA</p> <p>Chair Inma Martinez Deep Science Ventures</p> <p>Christian Ziach HTGF</p> <p>Marc Serres Luxembourg Space Agency</p> <p>Roberto Grosso Business Angel – Qmax Srl</p> <p>Ulrich Kuebler Airbus Defence and Space</p> <p>Michael Gamber Merck</p> <p>Paul Veger DECOS</p> <p><i>European investment, innovators and new players in the space sector.</i></p>	<p>Space exploration: a driver for new habitats</p> <p>Hosted by SOM</p> <p>Chair Daniel Inocente SOM</p> <p>DIGITS</p> <p>Anja Frey AVS, The MOON habitat 3D printer</p> <p>Oleh Dotsenko Yuzhnoye State Design Office, Mars habitation</p> <p>Peter Humphries AMS, Universal Utility Module as a Standard Unit for Space Exploration</p> <p>Juergen Schlutz ISS-ABOVE, ISS and life in space real time</p>	<p>60 minutes to innovate</p> <p>Hosted by KIM and Verhaert</p> <p>Chair Andrea Mari KIM</p> <p>Alexander Frimout Verhaert</p> <p><i>Technology transfer between space and non-space industry and how the ESA Broker Network supports this activity.</i></p>

16:00 Networking break

16:30 Our eyes on the Earth's companion: fly me to the Moon

Sergio Montúfar, former official astro-photographer for Ciudad de La Plata Planetarium in Argentina, will propose a visual trip over a lunar mosaic.

16:50 Growth hacking the moon – a business case

Growth hacking identifies the most efficient ways to grow a business in rapid experimentation across sectors. Private sector pitches on how to develop the lunar ecosystem will be followed by a discussion with ESA Director General Jan Wörner on how to growth hack the Moon Village initiative.

Moderator: Sarah Cruddas

- Kyle Acierno, ispace
- Agata Jozwicka-Perlant, Arianegroup
- Jürgen Brandner, PTScientists
- Gary Lay, Surrey Satellite Technology
- Mathew Cosby, Goonhilly Earth Station
- Daniel Inocente, Skidmore, Owings & Merrill LLP (SOM)

One-to-one interview with Jan Wörner, ESA's Director General.

17:40 The extra-terrestrial exploration

Héctor Guerrero Padrón, Instituto Nacional de Técnica Aeroespacial (INTA) will touch upon crucial points such as the journey of man to the moon, the development of the necessary technologies to explore around Earth's orbit, the exploration of the Solar System and the possibilities of exploration beyond it.

DIGITS – Science visualisation

Yuri Tanaka, Tokyo University of the Arts

18:00 End of the Business Opportunities Day

18:15 Space Exploration Masters Awards Ceremony

19:30 Departure of busses to dinner location

19:45 Dine and discuss

DIGITS – New inspirational perspectives

Benjamin Davis, Davis Group

Building safe pathways to implement innovative technologies for space exploration.

08:00 **Registration**

08:45 **Opening**

Moderator: Sarah Cruddas

08:50 **Disruptive solutions – an international perspective**

Global engagement opportunities in space and how disruptive technology innovation may alter current thinking. Discussions between representatives from the International Space Exploration Coordination Group (ISECG).

Moderator: Sarah Cruddas

Presentation by M. Lauster, Fraunhofer Institute

Panel discussion:

- Naoki Sato, JAXA
- Kathy Laurini, NASA
- Christian Lange, CSA
- Stefaan De Mey, ESA

DIGITS – Music, science and astronauts

Luis Luque Alvarez, violin teacher and member of the European Low Gravity Research Association.

09:35 **Making exploration real – on Earth**

New solutions to de-risking space exploration missions while building networks and securing businesses. Analogues activities to optimise scientific and technological needs in robotic and manned missions to the Moon or Mars.

Moderator: Francesco Sauro,
Geologist, explorer, expedition leader, consultant for ESA

Presentation by Bjarke Ingels, Bjarke Ingels Group

Panel discussion with:

- Victor Parro Garcia, Instituto Nacional de Técnica Aeroespacial
- Melanie von der Wiesche, DLR
- Vadim Guschin, Institute Biomedical Problems
- Pierre Crespi, Air Liquide

10:35 **Coffee break & networking opportunities**

11:00 Accelerated digitalisation: AI and the new super humans

Inma Martínez, Venture Partner at Deep Science Ventures, the UK’s first venture-builder for science-driven companies, illuminates the audience on how humanity’s exploration in A.I. will transform the way human cognition adapts to the New Age of Digitalisation and turn us into “Super Humans”.

11:40 Splinter sessions

	Splinter 1	Splinter 2	Splinter 3
11:40	<p>Innovative space propulsion and transportation technologies</p> <p>Hosted by Ariane Group</p> <p>Chair Joost Van Tooren ArianeGroup</p> <p>Marco Caporicci ESA</p> <p>DIGITS</p> <p>Patricia Revuelta Electric power generation for CubeSat – Deep Space mission</p> <p>Serhii Yerofieiev Yuzhnoye State Design Office, Modular self-propelled platform</p> <p>Thomas Zehetbauer RiseFlyOrbit, Ultralight (aerostatic buoyant) launch vehicle</p> <p>Frank Koch Orbit Recycling Initiative, Space Debris techs as an enabler for further space exploration potentials</p> <p>Marco Berg Dream Chaser for Europe, OHB</p> <p>Luciano Saccani Dream Chaser for Europe, SNC</p>	<p>Robotics</p> <p>Hosted by GMV</p> <p>Chair Mariella Graziano GMV</p> <p>DIGITS</p> <p><i>Discover what Robotic Systems hold for the future of Space Exploration.</i></p> <p>Mariella Graziano GMV Aerospace and Defence, Robotic Autonomy for Space Exploration</p> <p>Javier Vinals SENER, SIROM (Standard Interface for Robotic Manipulation of payloads in future space missions)</p> <p>Claudio Rossi Universidad Politecnica de Madrid (UPM), Evolutionary Robotics for Space Colonization</p>	<p>Health technology to innovate</p> <p>Hosted by STFC</p> <p>Chair Philip Carvil STFC</p> <p>DIGITS</p> <p>Thomas Bartzanas University of Athens, Space Agrobox</p> <p>Dani Sors Open Cosmos</p> <p>Richard Trimlett Royal Brompton Hospital</p> <p>David Zolesi Kayser Space</p> <p>Mario Cypko ESA</p> <p><i>An insight into the transformative synergy between the space and terrestrial healthcare disciplines.</i></p>
12:25	Change to the next splinter sessions		
12:35	<p>Scalable industrial lunar operations</p> <p>Hosted by SOM</p> <p>Chair Daniel Inocente SOM</p> <p><i>Share and investigate scalable industrial lunar operations for surviving and conducting science on the polar regions</i></p>	<p>Spaceship EAC paving the way to the Moon - how you can get involved</p> <p>Hosted by ESA</p> <p><i>Innovation team Spaceship EAC looks at technologies enabling future lunar exploration.</i></p> <p><i>Participants get the chance to think along during an interactive session on five different lunar challenges:</i></p> <ul style="list-style-type: none"> • 3D printing and in-space manufacturing • Energy systems • Life support systems • In-situ resource utilization 	<p>Key-enabling technologies for Small-Satellite</p> <p>Hosted by SSTL and GES</p> <p>Chair Matthew Cosby GES</p> <p>DIGITS</p> <p>Anna Gregorio PICOSATS, the structure of small satellites</p> <p>Valerio Di Tana Argotec, Small-Sat survives in lunar orbit</p> <p>Juan Tomás Hernani</p>

13:20 **Lunch break & networking opportunities**

14:20 **The future of innovation: a few propositions**

Ying Zhang, Rotterdam School of Management

Innovation will create an alternative path for human beings to a new system, and act as an essential instrument (besides institutions and transitional arrangement) to resolve tensions between the two spheres of our world (technology and society) and lag between the present and future.

14:40 **Fearless dreams from young generations**

Outcome of the children's contest "Designathon".

DIGITS - Educational space resources for the next generation of space explores

Domingo Escutià, ESERO SPAIN-ESA - Parque de las Ciencias

14:55 **Making space missions possible**

International cooperation and engagement of new players.

Paolo Nespoli, ESA astronaut

15:25 **Now, New, Next**

Key outcomes of the splinter sessions, overview of message wall and conclusions by David Parker ESA Director of Human and Robotic Exploration.

16:00 **Networking – Wine & Mingle**

17:00 **End of conference**