



**GLEC2019**  
GLOBAL CONFERENCE  
ON SPACE FOR  
EMERGING COUNTRIES

# FINAL PROGRAMME

24-26 APRIL 2019 | MARRAKECH, MOROCCO

[www.glec2019.org](http://www.glec2019.org)

*Bridging the Space Divide in Emerging Countries*



Partner Organization



To Mars and beyond...

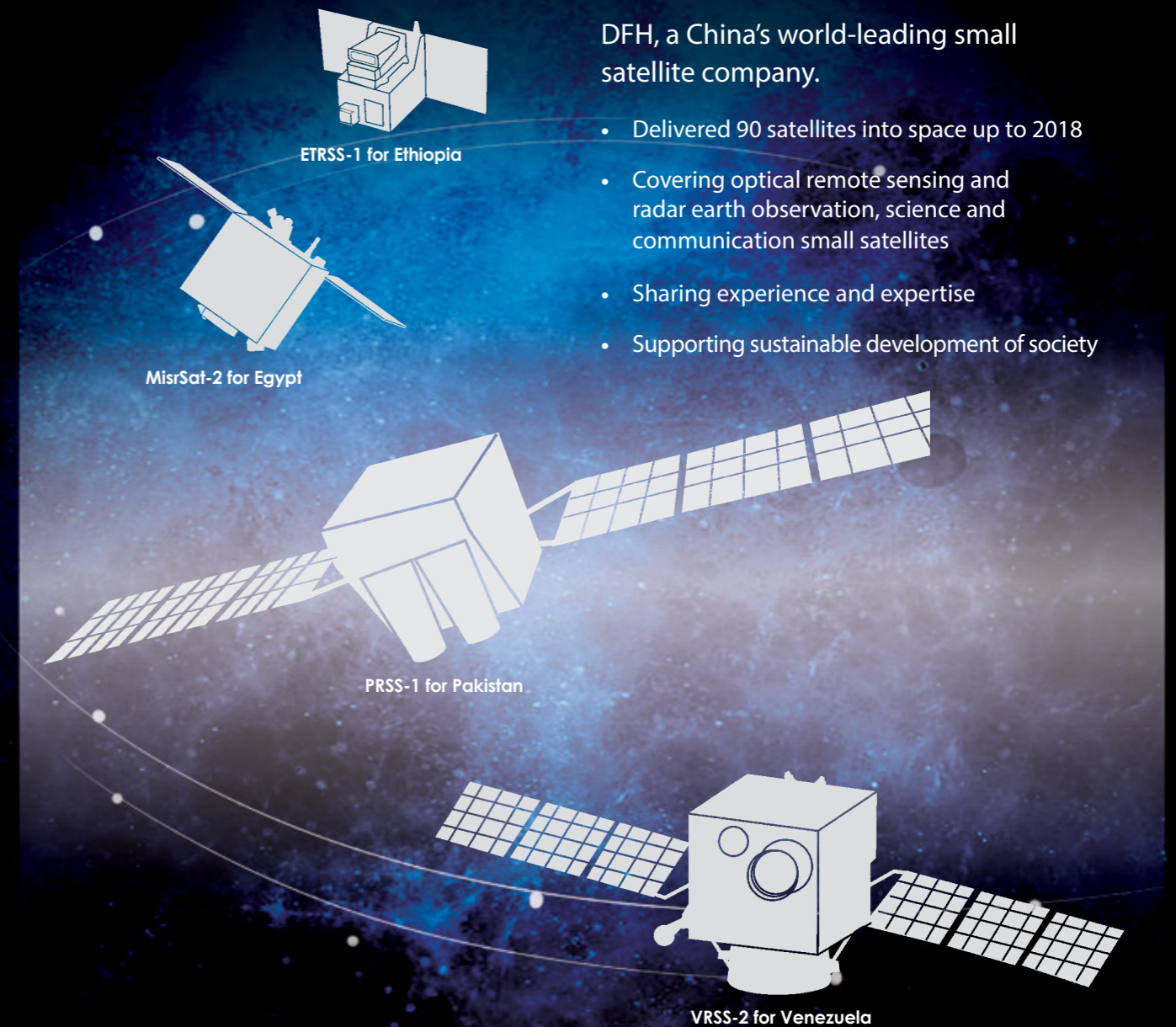
Scheduled to enter the Martian atmosphere in 2021, the same year that the UAE celebrates its 50<sup>th</sup> anniversary, the Emirates Mars Mission or "Hope probe" will not only be the world's first Martian weather satellite, it will also be the first Arab and Islamic mission to another planet. Equipped with a powerful digital camera, as well as infrared and ultraviolet spectrometers, the Hope probe will be the first to provide a comprehensive picture of the Martian climate, studying it through daily and seasonal cycles in order to understand how the planet's atmosphere evolves over time. Currently, more than 70 Emirati scientists and engineers, almost all of whom are under 35, are working on the probe. That number is expected to grow to 150 by 2021. After collecting science data from the probe, the UAE will share the data with more than 200 academic and scientific institutions around the world for free. The mission will leave behind a valuable and enduring legacy in the form of human capital: a generation of experienced scientists and engineers trained and inspired by the Mars mission.

The Hope Probe, Emirates Mars Mission



## Bring Space Benefits to You

### Please Meet Us at Stand No.1



DFH, a China's world-leading small satellite company.

- Delivered 90 satellites into space up to 2018
- Covering optical remote sensing and radar earth observation, science and communication small satellites
- Sharing experience and expertise
- Supporting sustainable development of society

WE BRING A NEW DIMENSION  
TO YOUR HORIZONS



**ThalesAlenia**  
a Thales / Leonardo company *Space*

#SPACEFORLIFE



# 70<sup>th</sup> INTERNATIONAL ASTRONAUTICAL CONGRESS

**SAVE THE DATE!**  
**21-25 October 2019**

Washington, D.C.  
United States

#IAC2019 will celebrate the  
50<sup>th</sup> anniversary of a feat  
once thought impossible:  
humans walking on the moon.



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



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# 1 WELCOME MESSAGES

## 1.1 Welcome Message from IAF

Dear GLEC 2019 Delegates,

We are delighted to welcome you to the ninth IAF Global Conference, and the Federation's first event ever to be held in Morocco! The Global Conference on Space for Emerging Countries, GLEC 2019, is co-organized together with our colleagues from the Royal Centre for Remote Sensing (CRTS) and the Centre National d'Études Spatiales (CNES).

First conference of its kind, GLEC 2019 aims at actively engaging emerging countries in the space scene by highlighting the socio-economic benefits of space applications. A rich and comprehensive programme has been prepared for the Conference and will feature stimulating plenaries and keynotes, an exhibition, a seminar focusing on the next generation and several social events and networking opportunities.

Over the course of the next three days we will closely examine what are the key aspects for resourcing, operationalizing and establishing successful national space programmes in emerging and developing space countries.

In line with its mission to promote international development and "Connecting @ll Space People", the IAF truly believes in the value of involving everyone in the space arena, and we look forward to fruitful discussions, knowledge sharing and to the creation of renewed international relations between space faring nations and space developing nations.

Once again, we would like to repeat our sincere gratitude to everyone, starting from the IPC Co-Chairs and Members, who has worked tirelessly in putting together this Global Conference. A big thanks also to all participants who have joined us here in Morocco to take part in this exceptional event and contribute to such a timely discussion.

We are confident that you will find the upcoming days to be enriching and inspiring, enjoy GLEC and Marrakech!



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



**Pascale Ehrenfreund**  
Incoming President and VP for Global  
Conferences,  
International Astronautical Federation (IAF)



**Driss El Hadani**  
Director General,  
Royal Centre for  
Remote Sensing  
(CRTS),  
Morocco



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



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

## 1.2 Welcome Message from the IPC Co-Chairs

On behalf of the International Programme Committee, we warmly welcome you to the GLEC2019 Conference on "Space for Emerging Countries" in the beautiful city of Marrakech. We believe we have chosen a venue that guarantees a successful technical conference amid the culture and scenery of Marrakech.

The conference theme "Bridging the space divide in emerging countries", has been carefully chosen to mark an important milestone of the IAF Global Innovation Agenda 2016-2019. The first aim of this strategy is related specifically to expanding the scope of IAF activities to emerging countries and connecting with new communities with a view to involve stronger participation of emerging countries in the IAF activities, and broadly in space activities, provide knowledge and expertise support to these countries, and ultimately produce benefits for these countries.

The proposed program is rich and varied with Keynote speakers and invited panelists split between six plenary sessions and a GLEC 2019 Seminar on the Next Generation's View on Space for Emerging Countries. This exciting programme will allow participants to reflect upon and celebrate accomplishments of space emerging countries, and jointly explore current and future opportunities, as well as discuss solutions to the challenges faced by emerging countries.

This event is even more interesting because it takes place at a time when space activities are undergoing profound changes, with the double effect of technological innovations and the emergence of new actors.

The expected contributions of participants representing space agencies, industry, academia and the younger generation, will undoubtedly help to provide collective insight to the challenges facing emerging countries. We hope this will create opportunities for more collaborations and networking that will strengthen the links of cooperation and exchange between the actors in the global space venture.

We hope all participants will have a productive and fun-filled time at this very special conference.





## 2 ORGANIZERS INFORMATION

### 2.1 International Astronautical Federation (IAF)



Founded in 1951, the International Astronautical Federation is the world's leading space advocacy body with more than 366 members, 68 countries on six continents, including all leading agencies, space companies, societies, associations and institutes worldwide.

Following its theme "A space-faring world cooperating for the benefit of humanity", the Federation advances knowledge about space and fosters the development and application of space assets by advancing global cooperation.

As the organizer of the annual International Astronautical Congress (IAC), and other meetings on specific space-related topics, the IAF actively encourages the development of astronautics for peaceful purposes and supports the dissemination of scientific and technical information related to space.

#### International Astronautical Federation (IAF)

100 Avenue de Suffren  
75015 Paris  
France

Phone: +33 1 45 67 42 60

Email: [info@iafastro.org](mailto:info@iafastro.org)

Website: [www.iafastro.org](http://www.iafastro.org)

**Connecting @ll Space People**

Be part of the conversation @iafastro



### 2.2 Royal Centre for Remote Sensing (CRTS)



The Royal Centre for Remote Sensing (CRTS) is the national institution responsible for the promotion, use and development of remote sensing applications in Morocco. CRTS coordinates and carries out the national programme of remote sensing in collaboration with ministerial departments, private operators and universities.

CRTS uses operational systems to collect, produce and analyze data from Earth observation satellites and other sources. It also runs the national archiving facilities. CRTS provides its expertise in remote sensing to national and regional organisations, ranging from private sector companies to government and non-government institutions, involved in projects for resources management and environmental assessment.

#### Royal Centre for Remote Sensing (CRTS)

Angle Avenue Sanawbar et Avenue Allal El Fassi quartier Hay Riad  
11000 Rabat  
Morocco

Phone: +212 5 37 71 14 35 / +212 5 37 71 54 48

Website: [www.crtsgov.ma/](http://www.crtsgov.ma/)

### 2.3 Centre National d'Études Spatiales (CNES)



Founded in 1961, the Centre National d'Études Spatiales (CNES) is the government agency responsible for shaping and implementing France's space policy in Europe. Its task is to invent the space systems of the future, bring space technologies to maturity and guarantee France's independent access to space.

CNES is a pivotal player in Europe's space programme, and a major source of initiatives and proposals that aim to maintain France and Europe's competitive edge. It conceives and executes space programmes with its partners in the scientific community and industry, and is closely involved in many international cooperation programmes — the key to any far-reaching space policy.

The agency's more-than 2,400-strong workforce constitutes an exceptional pool of talent, with some 1,800 engineers and executives, 35% of whom are women. Through its ability to innovate and its forward-looking vision, CNES is helping to foster new technologies that will benefit society as a whole, focusing on:

- access to space-civil applications of space
- sustainable development
- science and technology research
- security and defence

#### Centre National d'Études Spatiales (CNES)

2 Place Maurice Quentin  
75039 Paris  
France

Phone: +33 1 44 76 75 00

Website: [www.cnes.fr](http://www.cnes.fr)

## 3 PARTNER ORGANIZATION INFORMATION

### 3.1 Space Generation Advisory Council (SGAC)



The Space Generation Advisory Council in Support of the United Nations Programme on Space Applications (SGAC) is a global non-governmental, non-profit organization and network which aims to represent university students and young space professionals ages 18-35 to the United Nations, space agencies, industry, and academia.

Headquartered in Vienna, Austria, the SGAC network of members, volunteers and alumni has grown to more than 13 000 members representing more than 150 countries.

SGAC was conceived at UNISPACE III in 1999, whereby states resolved, as part of the Vienna Declaration, "To create a council to support the United Nations Committee on the Peaceful Uses of Outer Space, through raising awareness and exchange of fresh ideas by youth. The vision is to employ the creativity and vigour of youth in advancing humanity through the peaceful uses of space".

#### Space Generation Advisory Council (SGAC)

c/o ESPI, Schwarzenbergplatz 6  
1030 Vienna  
Austria

Email: [info@spacegeneration.org](mailto:info@spacegeneration.org)

Website: <http://spacegeneration.org>



## 4 INTERNATIONAL PROGRAMME COMMITTEE

### 4.1 International Programme Committee Co-Chairs



**Driss El Hadani**

Director General,  
Royal Centre for  
Remote Sensing  
(CRTS),  
Morocco



**Jean-Pascal Le Franc**

Director of Planning,  
International Relations  
& Quality,  
Centre National d'Études  
Spatiales (CNES),  
France



**Valanathan Munsami**

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

### 4.2 International Programme Committee Members

**Ahmed ABDI**, Africa Space Workshops, United Kingdom

**Naser ABDULLATIF AL HAMMADI**, United Arab Emirates Space Agency (UAESA), United Arab Emirates

**Salem AL MARRI**, Mohammed Bin Rashid Space Centre (MBRSC), United Arab Emirates

**Adnan ALRAIS**, Mohammed Bin Rashid Space Centre (MBRSC), United Arab Emirates

**Snidvongs ANOND**, Geo-Informatics and Space Technology Development Agency (GISTDA), Thailand

**Kirsten ARMSTRONG**, Petra Strategy, United States

**Morgan BAILEY**, RocketLabs, United States

**Roberto BATTISTON**, University of Trento, Italy

**Kammy BRUN**, HEAD Aerospace Corporation, China

**Philippe BRUNET**, European Commission (EC), Belgium

**Carlos David Caballero LEON**, Comisión Nacional de Investigación y Desarrollo Aeroespacial (CONIDA), Peru

**Gilberto CAMARA**, Group on Earth Observations (GEO), Switzerland

**Riadh CAMMOUN**, Thales Alenia Space, France

**Simonetta CHELLI**, European Space Agency (ESA), Italy

**Bruce CHESLEY**, Boeing, United States

**Jason CHOU**, HEAD Aerospace Corporation, China

**Michael DAVIS**, Space Industry Association of Australia (SIAA), Australia

**Clementine DECOOPMAN**, Space Generation Advisory Council (SGAC), Austria

**Christianus DEWANTO**, Indonesian National Institute of Aeronautics and Space (LAPAN), Indonesia

**Thomas DJAMALUDDIN**, Indonesian National Institute of Aeronautics and Space (LAPAN), Indonesia

**Anas EMRAN**, African Regional Centre for Space Science & Technology, Morocco

**Sim EUNSUP**, Korea Aerospace Research Institute (KARI), Republic of Korea

**Ahmed FARID**, German Aerospace Centre (DLR), Egypt

**Jörg FEUSTEL-BÜECHL**, Space Consultant, Germany

**Martha GAGGERO**, Centro de Investigación y Difusión Aeronáutica Espacial (CIDA-E), Uruguay

**Christina GIANNOPAPA**, European Space Agency (ESA), France

**Toshihiko HAYASHI**, Mitsubishi Electric Co., Japan

**Karim HOUARI**, Agence Spatiale Algérienne (ASAL), Algeria

**Mahmoud HUSSINI**, National Authority for Remote Sensing & Space Sciences, Egypt

**Oniosun Temidayo ISAIAH**, SpaceNews Africa, Nigeria

**Juan Jaramillos ROJAS**, Ecuadorian Civilian Space Agency (EXA), Ecuador

**Mohamed KHALFAOUI**, National Centre for Scientific and Technical Research (CNRST), Morocco

**Seishiro KIBE**, Japan Space Exploration Agency (JAXA), Japan

**John Njoroge KIMANI**, Kenya Space Agency, Kenya

**Yoshiaki KINOSHITA**, Japan Space Exploration Agency (JAXA), Japan

**Otto KOUDELKA**, Graz University of Technology (TU Graz), Austria

**Sergey KRIKALEV**, ROSCOSMOS, Russian Federation

**Raul KULICHEVSKY**, Comisión Nacional de Actividades Espaciales (CONAE), Argentina

**Amal LAYACHI**, Royal Centre for Remote Sensing (CRTS), Morocco

**Joo-Jin LEE**, Korea Aerospace Research Institute (KARI), Republic of Korea

**Raksina LEKTHANOO**, Geo-Informatics and Space Technology Development Agency (GISTDA), Thailand

**Fernanda LIMA**, Brazilian Space Agency (AEB), Brazil

**Moussa Faki MAHAMAT**, African Union Commission, Republic of Chad

**Aboubakar MAMBIMBA NDJOUNGUI**, Agence Gabonaise d'Études et d'Observation Spatiales (AGEOS), Gabon

**Peter MARTINEZ**, University of Cape Town, South Africa

**Francisco MENDIETA JIMENEZ**, Mexican Space Agency (AEM), Mexico

**Fritz MERKLE**, OHB System AG, Germany

**Andiswa MLISA**, South African National Space Agency (SANSA), South Africa

**Sias MOSTERT**, Space Commercial Services Holdings (Pty) Ltd, South Africa

**Clay MOWRY**, Blue Origin, United States

**Ronnie NADER**, Ecuadorian Civilian Space Agency (EXA), Ecuador

**Praveen NAIR**, Indian Space Research Organisation (ISRO), India

**Tidiane OUATTARA**, Science and Technology Division, Human Resources, Science and Technology Department African Union Commission, Ivory Coast

**Nicolas PETER**, German Aerospace Centre (DLR), Germany

**Anh Tuan PHAM**, Vietnam National Space Center (VNSC), Vietnam

**Alejandro J. ROMAN**, Paraguayan Space Agency (AEP), Paraguay

**Barbara RYAN**, Group on Earth Observation (GEO) (retired), Switzerland

**Raul SABULARSE**, Philippine Council for Industry, Energy and Emerging Technology Research and Development, Department of Science and Technology, The Philippines

**Imraan SALOOJEE**, Secure World Foundation (SWF), South Africa

**Noer Laela SARI**, Indonesian National Institute of Aeronautics and Space (LAPAN), Indonesia

**Robbie SCHINGLER**, Planet, United States

**Kai-Uwe SCHROGL**, International Institute of Space Law (IISL), France

**Mohamed SEIDU ONEILO**, National Space Research & Development Agency (NASDRA), Nigeria

**Emily SHANKLIN**, SpaceX, United States

**Mary SNITCH**, Lockheed Martin Corporation (LMC), United States

**Luc ST PIERRE**, United Nations Office for Outer Space Affairs (UNOOSA), Austria

**Sir Martin SWEETING**, Surrey Satellite Technology Ltd (SSTL), United Kingdom

**Nguyen Truong THANH**, Vietnam National Space Center (VNSC), Vietnam

**Akinawale Abraham TOBILOBA**, Space Generation Advisory Council (SGAC), Nigeria

**Jean-Jacques TORTORA**, European Space Policy Institute (ESPI), Austria

**Rania TOUKEBRI**, Space Generation Advisory Council (SGAC), Tunisia

**Anthony TSOUGRANIS**, National Aeronautics and Space Administration (NASA), United States

**Saud bin Mohammad Al Saud TURKI**, King Abdulaziz City for Science & Technology (KACST), Saudi Arabia

**Carlo VIBERTI**, SpaceLand Africa, Mauritius

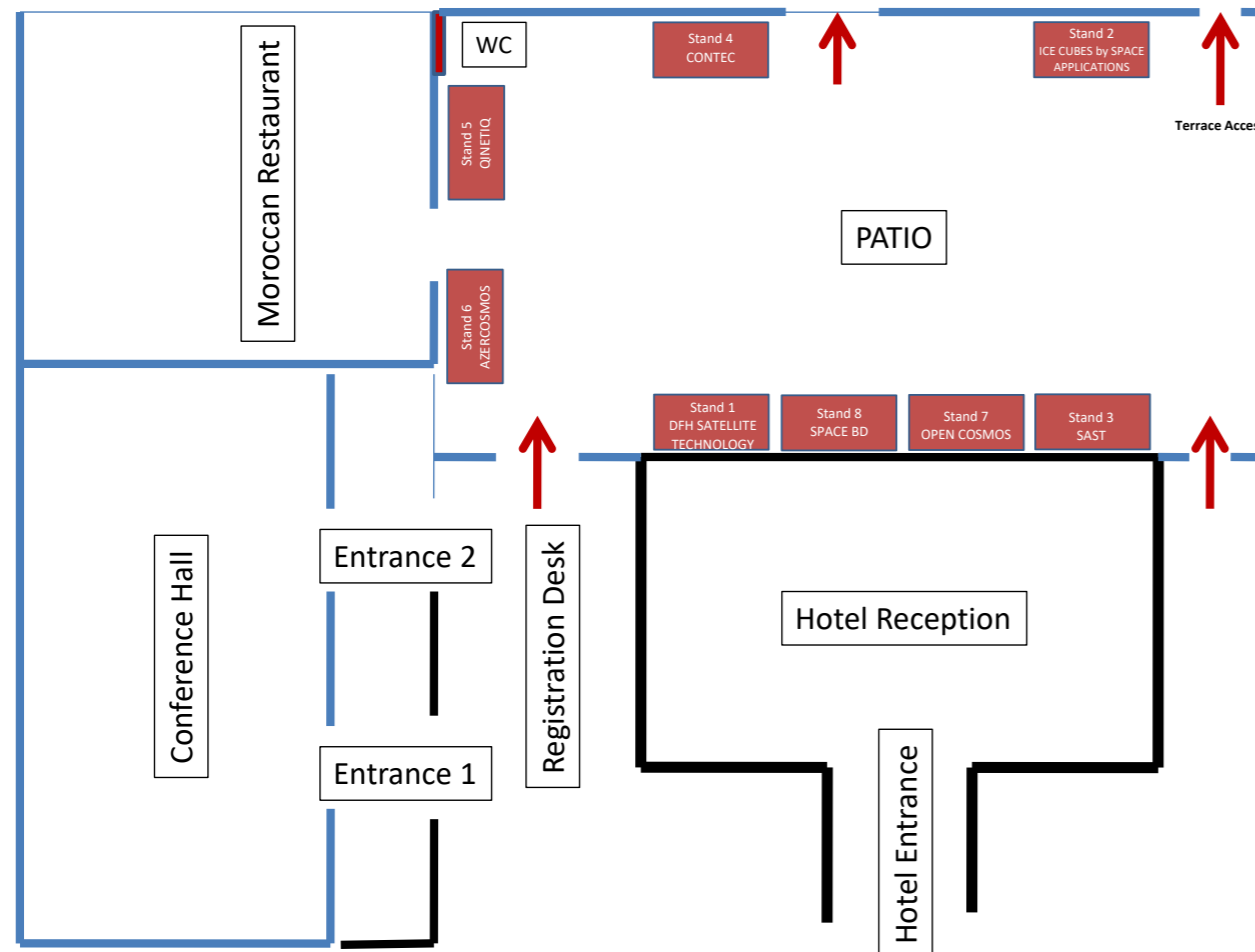
**Jim VOLP**, Pcs4Kids, Germany



## 5 PRACTICAL INFORMATION

### 5.1 Floor Plan and Maps

Les Jardins de l'Agdal Hôtel



- 1: GLEC 2019 at the Les Jardins de l'Agdal Hôtel: Avenue Mohammed VI, Marrakech 40000
- 2: Gala Dinner at La Maison Arabe Hôtel: Derb Assehbi, Marrakech 40000
- 3: Koutoubia Mosque – Famous Mosque in Marrakech
- 4: Jemaa Al Fna – Busy Square and Marketplace
- 5: Jardin Majorelle – Botanical Garden and Yves Saint Laurent Museum



## 5.2 Registration

### Opening Hours

Wednesday 24 April, 08:00-18:00

Thursday 25 April, 08:30-18:00

Friday 26 April, 08:30-16:30

## 5.3 Useful information

### About Morocco

**AIRPORT AND LOCAL TRANSPORTS INFO:** <http://www.transfert-marrakech.com/>

**TIME ZONE:** UTC +1

**CURRENCY:** 1€ = 11,50 Moroccan Dirhams (MAD)

**AREA:** 710,000 square kilometres

**POPULATION:** Approx. 33 million people

**CAPITAL:** Rabat

**LANGUAGE:** Moroccan Arabic is the official language and Amazigh (Berber) will be heard most, along with French. English is also spoken in many places.

**TIPPING:** Tip at your own discretion.

**ELECTRICITY:** 220 Volts & 50 Cycles – standard 2 circular pins (take adapter as per Europe).

**TELEPHONE:** The international direct dialling code for Morocco is +212.

**GIFTS AND SOUVENIRS:** For centuries, Moroccan crafts have been world-famous for their variety and quality. The best thing to remember is that hard bargaining is essential!

**VACCINATION AND HEALTH:** Please consult your GP regarding vaccinations. Most people who travel to Morocco do not take additional vaccinations but advice varies. This is entirely your choice. Malaria is not normally present in Morocco, however you should ensure good bite avoidance by covering up with clothing such as long sleeves and long trousers especially after sunset and using insect repellents on exposed skin.

**WATER:** Water is not safe to drink straight from the tap, rivers or creeks. If you drink water in a café or restaurant, make sure you ask for 'mineral' water.

**CLIMATE:** Early mornings will immediately warm up as soon as the sun rises and the days will be warm and hot depending on the season.

### TEMPERATURE:

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
Max °c	19	21	25	27	29	35	38	38	33	29	23	20
Min °c	6	8	11	13	15	19	21	21	19	16	11	8

### Morocco Entry Requirements

**VISAS:** British & European nationals do not need a visa to enter Morocco for the purpose of tourism for up to 3 months.

When entering the country, make sure your passport is stamped. Some tourists have experienced difficulties leaving the country because their passport bears no entry stamp.

**PASSPORT VALIDITY:** Your passport should be valid for at least 3 months following your stay in Morocco but we suggest having 6 months remaining on your passport as a precaution. If you are unsure about this timing, please contact us for confirmation.

To get all useful information related to visa application for Morocco, please visit:

<https://www.consulat.ma/en/visitingexploring-morocco>.



## 6 CONFERENCE PROGRAMME

### 6.1 Conference at a Glance

	08:00	09:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00
<b>Wednesday 24 April</b>	Registration	Opening ceremony	High-Level Keynote	Exhibition Opening + Tea/Coffee Break	Keynote 1 - Part 1 High-Level Panel Part 1 Benefits of Space Technology and Applications to Socio-Economic Development	Welcome Lunch Sponsored by Airbus D&S	Keynote 1 - Part 2 High-Level Panel Part 2 Benefits of Space Technology and Applications to Socio-Economic Development	Tea/Coffee Break	Keynote 2 Plenary 2 Financial Models and Resourcing	WR Sponsors Presentation	Welcome Reception			
<b>Thursday 25 April</b>	Registration	Keynote 3 Plenary 3 Technology and Skills Development	Tea/Coffee Break	Keynote 4 Plenary 4 Base Infrastructure Requirements	IDEA Lunch	Seminar on the Next Generation's view on Space for Emerging Countries							Gala Dinner	
<b>Friday 26 April</b>	Registration	Keynote 5 Plenary 5 Space Industry Development and Support	Tea/Coffee Break	Keynote 6 Plenary 6 Legal and Policy	Lunch	Results & Recommendations of Plenaries	Closing							

## 6.2 Day-by-day (Plenaries & Side Events)

### Wednesday, 24 April

#### 09:30 - 10:30 OPENING CEREMONY

Location: Les Jardins de l'Agdal Hôtel

Speakers:



**Abdellatif Loudiyi**  
Minister Delegate to the Head of Government in charge of the National Defense Administration, Morocco



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



**Moulay Hafid Elalamy**  
Minister of Industry, Investment, Trade and Digital Economy, Morocco



**Pascale Ehrenfreund**  
VP for Global Conferences and Incoming President, International Astronautical Federation (IAF), Germany



**Driss El Hadani**  
GLEC 2019 Local Organizing Committee Chair, Director General, Royal Centre for Remote Sensing (CRTS), Morocco



**Master of Ceremony: Christian Feichtinger**  
Executive Director, International Astronautical Federation (IAF), France

#### 10:30 - 10:50 HIGH LEVEL KEYNOTE 1

Location: Les Jardins de l'Agdal Hôtel

Speaker:



**Mahama Ouédraogo**  
Director Human Resources, Science and Technology, African Union Commission (AUC), Ethiopia

#### 10:50 - 11:40 EXHIBITION OPENING and TEA/COFFEE BREAK

Location: Patio Andalou, Les Jardins de l'Agdal Hôtel

#### 11:40 - 13:10 SESSION 1: PART 1

Location: Les Jardins de l'Agdal Hôtel

The primary focus of emerging countries in developing national space programmes is to leverage the benefits of space technologies and applications products and services. Whereas some countries may have a fair appreciation of what this entails, there are a significant number of emerging countries that have not grasped this important benefit and how this can assist in the socio-economic development of the country. The Session focus will be on:

1. Recognizing the relevance of space technologies and applications to achieving the Sustainable Development Goals (SDGs),
2. Valuing how space technologies and applications can assist in the socio-economic development of a country.

Moderator:



**Jean-Pascal Le Franc**  
GLEC2019 IPC Co-Chair, Director of Planning, International Relations and Quality, Centre National d'Études Spatiales (CNES), France

#### 11:40 - 11:50 KEYNOTE 1: Part 1

Speaker:



**Driss El Hadani**  
GLEC2019 IPC Co-Chair, Director General, Royal Centre for Remote Sensing (CRTS), Morocco

**11:50 - 13:10 PLENARY 1: High Level Panel 1 Part 1 – Benefits of Space Technology and Applications to Socio-Economic Development - Agency Perspective**

Location: Les Jardins de l'Agdal Hôtel

Speakers:



**Mohammed Al Ahbabi**  
Director General,  
UAE Space Agency (UAESA),  
United Arab Emirates



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



**John Njoroge Kimani**  
Coordinator,  
Kenya Space Agency (KSA),  
Kenya  
(Invited)



**Sergey Krikalev**  
Executive Director of Piloted  
Spaceflights,  
ROSCOSMOS,  
Russian Federation



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



**Chris Lee**  
Chief Scientist,  
UK Space Agency,  
United Kingdom



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



**Rashad Nabiye**  
CEO / Chairman of the  
Board,  
Azercosmos,  
Azerbaijan



**Azzedine Oussedik**  
General Director,  
Agence Spatiale Algérienne  
(ASAL),  
Algeria  
(Invited)



**Dominique Tilmans**  
Honorary Senator,  
Chair of YouSpace  
Chair of EURISY,  
France



**Mohamed Bayoumy  
AbdelKader Zahran**  
Chairman,  
National Authority For  
Remote Sensing and Space  
Sciences (NARSS),  
Egypt  
(Invited)

**13:10 - 14:40 AIRBUS WELCOME LUNCH**

Location: Les Jardins de l'Agdal Hôtel

Keynote:



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

Sponsored by:



**14:40 - 16:10 SESSION 1: Part 2**

Location: Les Jardins de l'Agdal Hôtel

The primary focus of emerging countries in developing national space programmes is to leverage the benefits of space technologies and applications products and services. Whereas some countries may have a fair appreciation of what this entails, there are a significant number of emerging countries that have not grasped this important benefit and how this can assist in the socio-economic development of the country. The Session focus will be on:

1. Recognizing the relevance of space technologies and applications to achieving the Sustainable Development Goals (SDGs),
2. Valuing how space technologies and applications can assist in the socio-economic development of a country.

Moderator:



**Valanathan Munsami**  
GLEC 2019 IPC Co-Chair,  
VP for Developing Countries  
and Emerging Nations,  
International Astronautical  
Federation (IAF),  
CEO,  
South African National Space  
Agency (SANSA),  
South Africa

**14:40 - 14:50 KEYNOTE 1: Part 2**

Location: Les Jardins de l'Agdal Hôtel

Speaker:



**Charles F. Bolden**  
President / CEO,  
The Bolden Consulting  
Group LLC,  
United States

**14:50 - 16:10 PLENARY 1: High Level Panel 1 Part 2 – Industry Perspective**

Location: Les Jardins de l'Agdal Hôtel

Speakers:



**Kyle Acierno**  
Vice President for Global  
Sales,  
ispace, inc.,  
Japan



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



**Jean-Philippe Duval**  
Francophone Africa  
Advisory Leader and PwC  
Relationship Partner,  
AfDB, PwC,  
France



**Jean-Louis Galle**  
CEO,  
Thales Alenia Space,  
France



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



**Stuart Martin**  
CEO and Executive  
Director,  
Satellite Applications  
Catapult Ltd.,  
United Kingdom



**Sias Mostert**  
Managing Director,  
Space Commercial Services  
Holdings (SCS),  
South Africa



**Kevin O'Connell**  
Director of the Office of  
Space Commerce,  
United States



**Vitaly Safonov**  
Deputy Director General,  
JSC Glavkosmos,  
Russian Federation

**16:10 - 16:40 TEA/COFFEE BREAK**

Location: Patio Andalou, Les Jardins de l'Agdal Hôtel

**16:40 - 18:10 SESSION 2: FINANCIAL MODELS AND RESOURCING**

Location: Les Jardins de l'Agdal Hôtel

Given the many competing social and economic priorities of emerging countries, the finances usually committed to national space programmes is generally sub-optimal. However, additional levels of funding are contingent upon demonstrating an appreciable value proposition through either a return on investment or value on investment. The Session focus will be on:

1. Categorizing the financial models that could be adopted in national/regional space programmes, and
2. Pinpointing what development banks are looking for in providing financial loans and assistance for space technologies and applications.

Moderator:



**Kirsten Armstrong**  
President,  
Petra Strategy,  
United States

**16:40 - 16:50 KEYNOTE 2**

Location: Les Jardins de l'Agdal Hôtel

Speaker:



**Steve Bochsinger**  
COO,  
Euroconsult,  
France

**16:50 - 18:10 PLENARY 2: FINANCIAL MODELS AND RESOURCING**

Location: Les Jardins de l'Agdal Hôtel

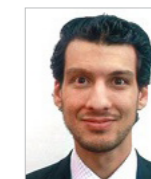
Speakers:



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



**ZHONG Penghua**  
Deputy Director of  
International Business  
Department,  
DFH Satellite Co., Ltd,  
China



**Talal Al Kaissi**  
Advisor – Strategic  
Projects,  
UAE Space Agency  
(UAESA),  
United Arab Emirates



**Mmboneni Muofhe**  
Co-Chair,  
Group on Earth Observation  
(GEO),  
South Africa



**Joerg Kreisel**  
CEO,  
JKIC,  
Germany



**Mahesh Murthy**  
Managing Partner,  
Exseed Electron Fund,  
India

**18:10 - 18:30 WELCOME RECEPTION SPONSORS PRESENTATION**

Speakers:



**Jean-Loïc Galle**  
CEO,  
Thales Alenia Space,  
France



**Jean-Marc Gardin**  
CEO,  
Telespazio France,  
Deputy CEO,  
Telespazio Group  
France

Sponsored by:



**18:30 - 20:30 WELCOME RECEPTION**

Location: Les Jardins de l'Agdal Hôtel

Avenue Mohammed VI, Marrakech 40000, Morocco

Sponsored by:



**Thursday, 25 April**

**09:30 - 11:00 SESSION 3: TECHNOLOGY AND SKILLS DEVELOPMENT**

Location: Les Jardins de l'Agdal Hôtel

Given the nascent stage of developing countries in the field of space science and technology, technology and skills development become important success factors for the long-term sustainability of national space programmes. Hence, the consideration of different approaches to such development and the protection of intellectual property is vitally important during the implementation phase of national space programmes. The Session focus will be on:

1. Grasping the role played by academia in developing the requisite knowledge and skills required for national space programmes, and
2. Contextualising the role of government in supporting the implementation of national space programmes.
3. Understanding the cooperation modalities among the key players involved in skills and technology development.

Moderator:



**Rania Toukebri**  
National Point of Contact  
for Tunisia,  
Space Generation  
Advisory Council (SGAC),  
Tunisia

**09:30 - 09:40 KEYNOTE 3**

Location: Les Jardins de l'Agdal Hôtel

Speaker:



**Juan de Dalmau**  
President,  
International Space  
University (ISU),  
France

**09:40 - 11:00 PLENARY 3: TECHNOLOGY AND SKILLS DEVELOPMENT**

Location: Les Jardins de l'Agdal Hôtel

Speakers:



**Abdelaziz Benjouad**  
Vice President for Research & Development,  
International University of Rabat,  
Morocco



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



**Aimin Niu**  
Programme Officer,  
United Nations Office for Outer Space Affairs (UNOOSA),  
Austria



**Amal Layachi**  
Head of Capacity Building Department,  
Royal Centre for Remote Sensing (CRTS),  
Morocco



**Pierluigi Mancini**  
NAVISP Programme Manager,  
European Space Agency (ESA),  
France



**Tidiane Ouattara**  
Space Science Expert and GMES & Africa Program Coordinator,  
African Union Commission (AUC),  
Ethiopia



**Jörg Feustel-Büechl**  
Space Consultant,  
Germany



**Carlo Viberti**  
Director,  
SpaceLand Africa,  
Mauritius

**11:00 - 11:30 TEA/COFFEE BREAK**

Location: Patio Andalou, Les Jardins de l'Agdal Hôtel

**11:30 - 13:00 SESSION 4: BASE INFRASTRUCTURE REQUIREMENTS**

Location: Les Jardins de l'Agdal Hôtel

Given the limited experience of emerging countries in space science and technology, the full scope of the infrastructure requirements is not always understood and appreciated. Also, the appropriate use of such infrastructure also goes hand in glove with the infrastructure itself. These considerations are important to ensure that national space programmes are both efficient and effective. The Session focus will be on:

1. Identifying the base infrastructure required for operationalizing efficient and effective national space programmes,
2. Appreciating how to develop the appropriate skills and expertise required for the efficient operations of space infrastructure.

Moderator:



**Krystal Wilson**  
Director of Space Applications Programs,  
Secure World Foundation (SWF),  
United States

**11:30 - 11:40 KEYNOTE 4**

Location: Les Jardins de l'Agdal Hôtel

Speaker:



**Pilar Zamora**  
Executive Director,  
Colombian Space Agency,  
Colombia

**11:40 - 13:00 PLENARY 4: BASE INFRASTRUCTURE REQUIREMENTS**

Location: Les Jardins de l'Agdal Hôtel

Speakers:



**Salem AlMarri**  
Assistant Director General for Science and Technology Sector,  
Mohammed Bin Rashid Space Centre (MBRSC),  
United Arab Emirates



**YAO Jianting**  
Deputy Director General,  
Satellite Assembly Integration and Test Center,  
China National Space Administration (CNSA),  
China



**Neevy van Laningham**  
Asia Pacific Space Policy Cooperation Senior Specialist,  
U.S. Department of State,  
United States



**Rei Kawashima**  
Secretary General,  
UNISEC-Global,  
Japan



**Agnieszka Lukaszczyk**  
Senior Director, European Affairs,  
Planet,  
Belgium



**Andiswa Mlisa**  
Managing Director for Earth Observation,  
South African National Space Agency (SANSA),  
South Africa



**Luigi Scatteia**  
Director – Space,  
PwC Advisory,  
France



**Adam Lewis**  
Australian Lead,  
Digital Earth Africa,  
Australia

**13:00 - 14:30 IDEA “3G” DIVERSITY LUNCH**

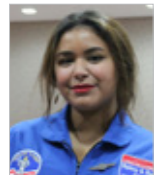
**Location:** Les Jardins de l’Agdal Hôtel

The IDEA “3G” Diversity Lunch will feature a Keynote Speech by Widad Elkachradi, Student at the National School of Applied Sciences of Agadir.



The lunch, organized in the frame of the IAF “3G” International Platform for Diversity and Equality in Astronautics (IDEA) will focus on the importance of highlighting excellent role models for young female space professionals from Morocco. In this purpose, Widad Elkachradi, 18 year-old Moroccan, space camp alumni, and passionate about aeronautics and robotics will give a 10-minute keynote on the utmost importance of women’s right and how each of us can contribute to a brighter future for women from emerging countries.

Speaker:



**Widad Elkachradi**  
Student,  
National School Of  
Applied Sciences Of  
Agadir,  
Morocco

**14:30 - 18:00 SEMINAR ON THE NEXT GENERATION’S VIEW ON SPACE FOR EMERGING COUNTRIES**

**Location:** Les Jardins de l’Agdal Hôtel

The GLEC 2019 Seminar on the Next Generation’s view on Space for Emerging Countries is a half-day seminar organized in cooperation with the Space Generation Advisory Council (SGAC). The event aims to engage Moroccan and African students and young professionals and provides an opportunity for capacity building and policy input on space applications.

The programme will feature 3 keynote addresses, 5 working group discussions and a short panel discussion where participants can ask questions.



**PROGRAMME**

**14:30 - 14:40 Workshop Introduction**

**Temidayo Isaiah**  
African Regional Coordinator,  
Space Generation Advisory  
Council (SGAC)

**Imane El Khantouti**  
National Point of Contact for Morocco,  
Space Generation Advisory Council (SGAC)

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

**14:40 - 14:55 Keynote 1**

**Salem Humaid Al Marri**  
Assistant DG for Science &  
Technology Sector  
Mohammed Bin Rashid Space  
Centre (MBRSC)

**14:55 - 15:10 Keynote 2**

**Driss El Hadani**  
Director General,  
Royal Centre for Remote  
Sensing (CRTS)

**15:10 - 15:25 Keynote 3**

**Amal Khatri**  
Executive Director: Space Programme  
South African National Space Agency

**15:25 - 15:40 Special Guest**

**Charles F. Bolden**  
Former administrator,  
National Aeronautics and Space  
Administration (NASA)

**15:40 - 15:45 Working Group Introduction**

**Abraham Akinwale**  
National Point of Contact for Nigeria,  
Space Generation Advisory Council (SGAC)

**15:45 - 17:00 Working Groups**

**Working Group 1: Regional Collaboration on Space Applications**

**Working Group Coordinator:**  
**Andiswa Mlisa**  
Managing Director Earth Observation,  
South African National Space Agency  
(SANSA)

**Working Group 2: IoT and Space Applications**

**Maria-Gabriella Sarah**  
Senior Partnership Officer,  
European Space Agency (ESA)

**Working Group 3: Legal and Policy Challenges of Space Applications**

**Agnieszka Lukaszczyk**  
Senior Director,  
European Affairs  
Planet





**Working Group 4: Technology Development for Socio-Economic Development**

**Neevy van Laningham**  
Senior Specialist  
Asia Pacific Space Policy Cooperation

**Working Group 5: Engagement of the Next Generation from Emerging Countries**

**Hansley Noruthun**  
SGAC 2<sup>nd</sup> African Space Generation  
Workshop Manager

**17:00 - 17:30 Panel**

**Moderator:**  
**Leehandi De Witt**  
National Point of Contact for South Africa,  
Space Generation Advisory Council (SGAC)

**Hansley Noruthun**  
SGAC 2<sup>nd</sup> African Space Generation  
Workshop Manager

**Kyle Acierno**  
Vice President Global  
Sales and Strategy,  
ispace Japan

**Agnieszka Lukaszczyk**  
Senior Director,  
European Affairs,  
Planet

**17:30 - 17:55 Summary of Group Work (5' per Working Group)**

**17:55 - 18:00 Conclusion**

**Rania Toukebri**  
National Point of Contact for Tunisia,  
Space Generation Advisory Council (SGAC)

**19:30 - 22:00 GALA DINNER**

**Location: La Maison Arabe Hôtel**

**Derb Assehbi, Marrakech 40000, Morocco**  
Bus departure at 19:30 outside Les Jardins de l'Agdal Hôtel.



**Friday, 26 April**

**09:30 - 11:00 SESSION 5: SPACE INDUSTRY DEVELOPMENT AND SUPPORT**

**Location: Les Jardins de l'Agdal Hôtel**

Recent developments in the global space sector demonstrates an increasing role played by the space industry and private sector institutions. This underscores the need for developing a local space industry as an important segment of the space value chain, especially where there is a move for space agencies to farm out key space initiatives to the local industry rather than building in-house capabilities to implement these. The Session focus will be on:

1. Unpacking the role to be played by a local space industry sector in the space value chain,
2. Understanding the evolution of private space sector institutions from the start-up phase to the fully operational phase.

**Moderator:**

 **Kammy Brun**  
Head of Global Business  
Development,  
China HEAD Aerospace  
Group,  
China

**09:30 - 09:40 KEYNOTE 5**

**Location: Les Jardins de l'Agdal Hôtel**

**Speaker:**


 **Pascale Ehrenfreund**  
Chair of the Executive Board,  
German Aerospace Centre  
(DLR),  
Germany

**09:40 - 11:00 PLENARY 5: SPACE INDUSTRY DEVELOPMENT AND SUPPORT**

**Location: Les Jardins de l'Agdal Hôtel**

**Speakers:**

 **Kasia Clatworthy**  
Head of Customer Know-  
How Transfer and Training  
Department,  
Surrey Satellite Technology  
Ltd (SSTL),  
United Kingdom

 **Nomfuneko Majaja**  
Chief Director,  
Legal and Compliance –  
Special Economic Zones and  
Space Affairs,  
Vice Chair,  
South African Council for  
Space Affairs Department of  
Trade and Industry,  
South Africa

 **YUAN Hongyi**  
General Manager,  
Hiwing Satellite Operations  
Division, Third Academy of  
China Aerospace Science  
& Industry Corporation  
(CASIC),  
China



**Lon Levin**  
President and CEO,  
GEOshare,  
United States



**Cornelis J.J. Eldering (Niels)**  
Technology Transfer Officer,  
European Space Agency (ESA),  
The Netherlands



**Ben Baseley-Walker**  
Partner,  
Andart Global,  
United Arab Emirates



**Tobias Aebi**  
Manager,  
Arthur D. Little Global,  
United Arab Emirates



**Takayoshi Fukuyo**  
Associate Professor,  
Center for Spatial  
Information Science,  
University of Tokyo,  
Japan

**11:00 - 11:30 TEA/COFFEE BREAK**

Location: Patio Andalou, Les Jardins de l'Agdal Hôtel

**11:30 - 13:00 SESSION 6: LEGAL AND POLICY**

Location: Les Jardins de l'Agdal Hôtel

Given the sensitive nature of space science, especially in respect of (i) dual use technologies, (ii) the United Nations (UN) Treaties and Conventions, and (iii) national space law that is needed to govern the peaceful use of outer space; legal and policy considerations must be given to these important factors. Emerging countries are not necessarily familiar with this domain and these can easily be ignored in the establishment phase of national space programmes. The Session focus will be on:

1. Understanding the key policy drivers of national space programmes and the process entailed in developing national space policies,
2. Highlighting the relevance of UN Treaties and Conventions to national space programmes, and
3. Creating awareness on the need for national space legislation to ensure the peaceful use of outer space

Moderator:



**David Kendall**  
Former Chair,  
United Nations Committee on  
the Peaceful Uses of Outer  
Space (UNCOPUOS),  
Canada

**11:30 - 11:40 KEYNOTE 6**

Location: Les Jardins de l'Agdal Hôtel

Speaker:



**Irmgard Marboe**  
Professor of International Law,  
Head of the National Contact  
Point for Space Law,  
University of Vienna,  
Austria

**11:40 - 13:00 PLENARY 6: LEGAL AND POLICY**

Location: Les Jardins de l'Agdal Hôtel

Speakers:



**Mohammed Khalil Ibrahim**  
Professor,  
School of Aerospace and  
Automotive Engineering,  
Rabat International  
University,  
Morocco



**Marta Gaggero**  
Chief Counsel,  
Centro de Investigación  
y Difusión Aeronáutica  
Espacial (CIDA-E),  
Uruguay



**Jean-Jacques Tortora**  
Director,  
European Space Policy  
Institute (ESPI),  
Austria



**Mohamed Amara**  
General Counsel,  
UAE Space Agency (UAESA),  
United Arab Emirates



**Magda Cocco**  
Partner ICT / Space Group,  
VdA – Vieira de Almeida,  
Portugal



**Jairo Becerra**  
Director of the Socio-Legal  
Research Centre,  
Universidad Católica de  
Colombia,  
Colombia



**Tanja Masson-Zwaan**  
Assistant Professor and  
Deputy Director of the  
International Institute of Air  
and Space Law (IIASL),  
Leiden University,  
The Netherlands

**13:00 - 14:30 LUNCH**

Location: Les Jardins de l'Agdal Hôtel

**14:30 - 15:50 RESULTS AND RECOMMENDATIONS**

Location: Les Jardins de l'Agdal Hôtel

Moderator:



**Driss El Hadani**  
GLEC2019 IPC Co-Chair,  
Director General,  
Royal Centre for Remote  
Sensing (CRTS),  
Morocco

Speakers:



**Panel 1 – Part 1  
Moderator  
Jean-Pascal Le Franc**  
GLEC2019 IPC Co-Chair,  
Director of Planning,  
International Relations and  
Quality,  
Centre National d'Études  
Spatiales (CNES),  
France



**Panel 1 – Part 2  
Moderator  
Valanathan Munsami**  
GLEC2019 IPC Co-Chair,  
VP for Developing Countries  
and Emerging Nations,  
International Astronautical  
Federation (IAF),  
CEO,  
South African National Space  
Agency (SANSA),  
South Africa



**Panel 2 Moderator  
Kirsten Armstrong**  
President,  
Petra Strategy,  
United States



**Panel 3 Moderator  
Rania Toukebri**  
National Point of Contact for  
Tunisia,  
Space Generation Advisory  
Council (SGAC),  
Tunisia



**Panel 4 Moderator  
Krystal Wilson**  
Director of Space Applications  
Programs,  
Secure World Foundation  
(SWF),  
United States



**Seminar on the Next  
Generation's View on  
Space for Emerging  
Countries Moderator  
Imane El Khantouti**  
National Point of Contact  
for Morocco,  
Space Generation  
Advisory Council (SGAC),  
Morocco



**Panel 5 Moderator  
Kammy Brun**  
Head of Global Business  
Development,  
China HEAD Aerospace Group,  
China



**Panel 6 Moderator  
David Kendall**  
Former Chair,  
United Nations Committee on  
the Peaceful Uses of Outer  
Space (UNCOPUOS),  
Canada

**15:50 - 16:20 CLOSING CEREMONY**

Location: Les Jardins de l'Agdal Hôtel

Speakers:



**Pascale Ehrenfreund**  
VP for Global Conferences  
and Incoming President,  
International Astronautical  
Federation (IAF),  
France



**Driss El Hadani**  
GLEC2019 Local Organizing  
Committee Chair,  
Director General,  
Royal Centre for Remote  
Sensing (CRTS),  
Morocco



**Jean-Pascal Le Franc**  
GLEC2019 IPC Co-Chair,  
Director of Planning,  
International Relations and  
Quality,  
Centre National d'Études  
Spatiales (CNES),  
France



**Valanathan Munsami**  
GLEC2019 IPC Co-Chair,  
VP for Developing Countries  
and Emerging Nations,  
International Astronautical  
Federation (IAF),  
CEO,  
South African National Space  
Agency (SANSA),  
South Africa



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



**Master of Ceremony:  
Christian Feichtinger**  
Executive Director,  
International Astronautical  
Federation (IAF),  
France

## 7 GALA DINNER

Thursday, 25 April

**Location:**

La Maison Arabe Hôtel  
Derb Assehbi, Marrakech 40000, Morocco

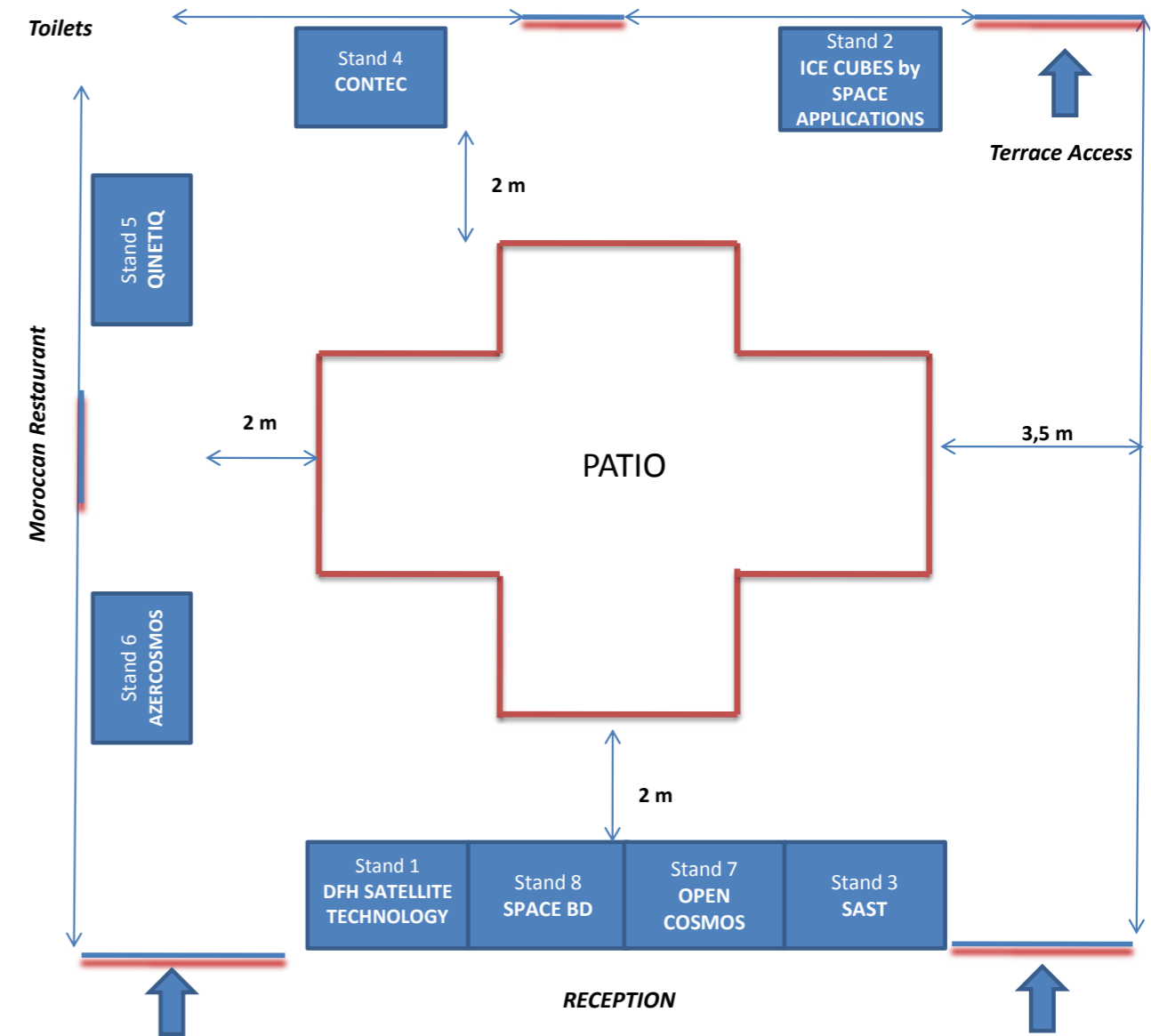
Bus departure at 19:30 from Les Jardins de l'Agdal Hôtel.

The ticket price (including VAT) is € 60,00 and can be purchased online or on-site in cash.



## 8 EXHIBITORS AND SPONSORS

### 8.1 Exhibition Area Floorplan





## 8.2 List of Exhibitors by Stand Number

### Stand: 6 Azercosmos



**Contact:**  
Nargiz Samadova  
Events Manager

**Tel:** 994 12 5650055 ext. 266  
**Fax:** +994 12 5650066  
**Mobile:** +994 55 9033586  
**Mail:** [nargiz.samadova@azercosmos.az](mailto:nargiz.samadova@azercosmos.az)  
**Web:** [www.azercosmos.com](http://www.azercosmos.com)

**Address:**  
72 U. Hajibeyli str.,  
AZ1000, Baku  
Azerbaijan

Azercosmos is the national satellite operator of Azerbaijan.

The company, established with the mission to connect people around the world, provides satellite-delivered telecommunications and Earth Observation services to its customers in public and private sectors.

Azercosmos operates 3 satellites. The first, Azerspace-1, is a telecommunications satellite located at 46° East longitude and has a wide coverage area including countries in Europe, Africa, the Middle East, and Central Asia. Manufactured by Orbital Sciences Corporation and launched by Arianespace, Azerspace-1 is equipped with 36 transponders: 24 in C-band and 12 in Ku-band.

Under the terms of a strategic partnership with Airbus DS, in 2014, Azercosmos took over the rights to operate and commercialize SPOT-7 (later commercialized under the title of Azersky), a high resolution optical Earth observation satellite.

To enhance the coverage area and spectrum of services, in 2018, Azercosmos launched its second telecommunications satellite Azerspace-2 into geostationary orbit at 45° East longitude.

To conduct scientific research in the field of astronautics, Azercosmos established the Research and Development Center.

To identify innovative startup projects and products in the space and related industries, Azercosmos conducts the NewSpace Business Acceleration Program. This program provides technological, industrial, and business mentoring and offers seed funding for early stage space startups.

### Stand: 4 CONTEC



**Contact:**  
Sunghee Lee  
CEO

**Tel:** +82-42-863-4523 (Office)  
+82-10-3108-4523 (personal)  
**Fax:** +82-42-863-4524  
**Mail:** [shlee@contec.kr](mailto:shlee@contec.kr)

**Address:**  
O-201, BD22, 169-84 Gwahakro,  
Yuseong-Gu, Daejeon, 34133,  
Republic of Korea

CONTEC provides satellite ground station services and satellite image utilization services through own ground station with our accumulated skills and technologies for future value.

### Stand: 1 DFH Satellite Co., Ltd



**Contact:**  
ZHONG Penghua

**Tel:** +86-18500077727  
**Mail:** [zhongpenghuadfh@spacechina.com](mailto:zhongpenghuadfh@spacechina.com)

**Address:**  
No.104 Youyi Road, Haidian District,  
Beijing 100094  
China

Established in May 2001 in Beijing, DFH Satellite Co., Ltd. (National Engineering Research Center of Small Satellites and Applications) is a professional aerospace company that provides solutions and service of high performance satellite for earth observation, space communication, space science experiment and new technology demonstration.

Up to 2019, the company has launched 90 satellites, with over 78 of them still working in orbit, and the accumulative in-orbit lifetime is nearly 400 years. We also offer a series of related know-how transfer service, including training on satellite research and development and engineering management, mission consultation, joint designing and development.

### Stand: 7 Open Cosmos



**Contact:**  
Remco Timmermans  
Head of Communications

**Tel:** +44 7435 011 792  
**Mail:** [remco@open-cosmos.com](mailto:remco@open-cosmos.com)  
**Web:** [www.open-cosmos.com](http://www.open-cosmos.com)  
**Twitter:** [@Open\\_Cosmos](https://twitter.com/Open_Cosmos)  
**Twitter:** [@timmermansr](https://twitter.com/timmermansr)

**Address:**  
Open Cosmos Ltd.  
RAL Atlas Building R27  
Fermi Avenue  
Harwell OX11 0QX  
United Kingdom

Open Cosmos provides simple and affordable small satellite missions to help solve the world's biggest challenges, enabling organizations from across a wide range of industries to use space technologies as a tool. Open Cosmos removes space access barriers by simplifying space technology, offering a one-stop-shop to orbit, reducing time and cost. Open Cosmos offers constellation services, in-orbit demonstration services, payload development and qualification services.

Open Cosmos is led by its founder Rafael Jorda Siquier, a Spanish entrepreneur who had the idea to make space more accessible. Open Cosmos was created in 2015 and set up in the UK at the Harwell Space Cluster, at the European Space Agency Business Incubation Centre. It has now grown to 40+ employees, with a fully-functional laboratory and clean room to build satellites. Open Cosmos raised US\$7 million in a Series A round of funding in 2018 and attracted several new customers for which it is building satellites that are to be launched from as early as autumn 2019.

At GLEC 2019 Open Cosmos will demonstrate its unique 'beeApp' mission design, analysis, test and operations software, in combination with its accessible and easy-to-use 'beeKit' payload development and qualification hardware platform.



**Stand: 5 QinetiQ Space nv**



**Contact:**  
Peter Holsters  
**Tel:** +32 3 250 14 14  
**Peter:** +32 472 62 95 99  
**Web:** [www.QinetiQ.be](http://www.QinetiQ.be)

**Address:**  
QinetiQ Space  
Hogenakkerhoekstraat 9  
9150 Kruikebeke  
Belgium

Through its longstanding ESA and defence heritage, QinetiQ offers the design, build, launch and operation of complex space infrastructure, ground stations, subsystems and satellites. The PROBA remote sensing satellites are designed and built at our facilities, where today we deliver entire satellites and major satellite equipment including on-board computers, remote terminal units, mass memories, space mechanisms, advanced electric propulsion systems and radio transceivers to enable the most demanding space missions.

QinetiQ supports motivated entrepreneurs to quickly execute their business plans on orbit, by independently researching and developing "best fit" cost-efficient small satellite solutions with a guaranteed lifetime. QinetiQ's capabilities include the provision of safety & security and satellite operations to assure third parties' missions.

QinetiQ offers also affordable high performance sovereign satellite intelligence systems for commercial and reconnaissance applications, based on our heritage design.

**Stand: 3 Shanghai Academy of Spaceflight Technology (SAST)**



**Contact:**  
Wu Linna  
Vice Manager  
**Tel:** 0086-21-24186650  
**Mail:** [wulinna1214@sina.com](mailto:wulinna1214@sina.com)

**Address:**  
YuanJiang Road, No.3888  
Minhang district,  
Shanghai  
China

Headquartered in Shanghai, P. R. China since 1961, Shanghai Academy of Spaceflight Technology (SAST) is a member of China Aerospace Science and Technology Corporation (CASC) and comprises 21 affiliated companies. It is one of the largest suppliers of advanced aerospace technology and air defense products in China. SAST has made significant contributions to the aerospace industry of China by taking a key role in the R&D of launch vehicles, satellites, spacecrafts, deep exploration, air defense, etc. SAST is equipped with distinguished technologies in system engineering, space propulsion, guidance navigation & control (GNC), space power-source, structure material, etc.

SAST has been exploring almost 60 years in the fields of launch vehicles, satellites, multi-range air defense systems, manned spacecrafts, deep space exploration and lunar rovers. With persistent efforts of all the employees, SAST has achieved significant development, and has become one of the most competitive companies in the local and world market. It is capable of providing the one-stop solution from launching to in-orbit service. In the future, SAST will build itself into a world-class integrated aerospace industry group. SAST has the resolution to make significant contribution to science and technology, and create aerospace civilization for human beings

**Stand: 2 ICE Cubes by Space Applications Services**



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ICE Cubes is a commercial space access service created by Space Applications Services NV/SA.

The International Commercial Experiment Cubes service (ICE Cubes) service provides fast, direct and affordable access to space. The service enables any organisation, public or private entity, such as universities, commercial companies and research centres to participate in research, technology and education. The ICE Cubes service provides for a very appealing asset and innovative approach for capacity building and skills development by providing access to space for the broad community.

Space Applications Services NV/SA is an independent Belgian company founded in 1987, with a subsidiary in Houston, USA.

Our aim is to research and develop innovative systems, solutions and products and provide services to the aerospace and security markets and related industries. Our space activities cover manned and unmanned spacecraft, launch/re-entry vehicles, control centres, robotics and a wide range of information systems.

Visit us for a talk on how you can benefit from the ICE Cubes space access service for your research, technology or skills development projects.

**Stand: 8 Space BD Inc.**



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Space BD, an ISS utilization service and satellite launch service provider authorized by JAXA, is a one-stop shop to respond to all issues related to industrialization of space. In 2018, Space BD was selected by JAXA as the official commercial service provider in the area of satellite deployment from ISS "Kibo" module. Since then, we are providing demonstration service on ISS external and internal platform, as well as satellite launch service using both ISS and global launch vehicles. We also extend consistent support in procurement of components from overseas for satellite developers. Moreover, Space BD has started business development in the field of education to cultivate new leadership talents. This educational program targets people of all ages ranging from pre-school education to corporate training. At Space BD, business development experts with experience in various fields approach space from different perspectives such as "Concept," "Hardware," "Market" to promote industrialization. Unbounded by the traditional perspectives of "Technology" and "Access," Space BD will build the foundation for businesses utilizing all available assets.



### 8.3 List of Sponsors

#### Stand: N/A Airbus Defence and Space



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Airbus is a global leader in aeronautics, space and related services. In 2018 it generated revenues of € 64 billion and employed a workforce of around 134,000.

With cutting-edge capabilities and decades of experience, the Space Systems Business Line of Airbus has all that it takes to design, develop and operate major space systems. Around the globe commercial and institutional customers alike rely on Airbus' leading space technology and solutions.

The Airbus portfolio contains the whole range of Space products and services: mobility, environment, communication, security, Space exploration, science and access to Space: From the smallest electronic parts to the full in-orbit delivery of satellites, from very-high-resolution Earth observation instruments to unprecedented deep space exploration missions, from today's most reliable telecommunication satellites to flawless International Space Station operations - reaching for the stars is our daily business.

Airbus offers the most comprehensive range of passenger airliners. Airbus is also a European leader providing tanker, combat, transport and mission aircraft, as well as one of the world's leading space companies. In helicopters, Airbus provides the most efficient civil and military rotorcraft solutions worldwide.

#### Stand: 6 Azercosmos



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Azercosmos is the national satellite operator of Azerbaijan.

The company, established with the mission to connect people around the world, provides satellite-delivered telecommunications and Earth Observation services to its customers in public and private sectors.

Azercosmos operates 3 satellites. The first, Azerspace-1, is a telecommunications satellite located at 46° East longitude and has a wide coverage area including countries in Europe, Africa, the Middle East, and Central Asia. Manufactured by Orbital Sciences Corporation and launched by Arianespace, Azerspace-1 is equipped with 36 transponders: 24 in C-band and 12 in Ku-band.

Under the terms of a strategic partnership with Airbus DS, in 2014, Azercosmos took over the rights to operate and commercialize SPOT-7 (later commercialized under the title of Azersky), a high resolution optical Earth observation satellite.

To enhance the coverage area and spectrum of services, in 2018, Azercosmos launched its second telecommunications satellite Azerspace-2 into geostationary orbit at 45° East longitude.

To conduct scientific research in the field of astronautics, Azercosmos established the Research and Development Center.

To identify innovative startup projects and products in the space and related industries, Azercosmos conducts the NewSpace Business Acceleration Program. This program provides technological, industrial, and business mentoring and offers seed funding for early stage space startups.

#### Stand: 1 DFH Satellite Co., Ltd



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Established in May 2001 in Beijing, DFH Satellite Co., Ltd. (National Engineering Research Center of Small Satellites and Applications) is a professional aerospace company that provides solutions and service of high performance satellite for earth observation, space communication, space science experiment and new technology demonstration.

Up to 2019, the company has launched 90 satellites, with over 78 of them still working in orbit, and the accumulative in-orbit lifetime is nearly 400 years. We also offer a series of related know-how transfer service, including training on satellite research and development and engineering management, mission consultation, joint designing and development.

#### UAE Space Agency



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The UAE Space Agency, the first national space agency in the region, was established in 2014, and is responsible for organizing, regulating and supporting the national space sector under federal law. This includes the complete oversight and funding of space missions such as the Mars Hope Probe, the UAE's unmanned mission to Mars.

The primary goals of the UAE Space Agency are to contribute significantly to diversification of the national economy, prepare the upcoming generation of Emiratis for leadership in the space sector through a range of capacity building programmes, and raise awareness about space sciences and STEM fields among the general public. In addition, it is responsible for expanding and enhancing the UAE's international standing in space-related fields, and for issuing policy and laws for the space sector.



## Notes

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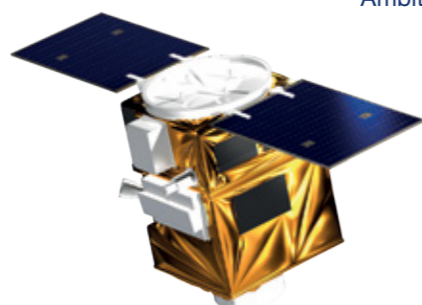
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TO WAIT.**



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Ambition. We make it fly.



Azercosmos is proud to propose candidacy of

**Baku**

to host the 73<sup>rd</sup> International Astronautical Congress  
in 2022 under the theme:

**Global Challenges & Opportunities  
Give Space a Chance!**





### International Astronautical Federation (IAF)

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CRTS

### Royal Centre for Remote Sensing (CRTS)

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