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# A YEAR OF TRANSITION ANNUAL REPORT 2023



UNITED NATIONS



UNITED NATIONS  
OFFICE FOR OUTER SPACE AFFAIRS

# A YEAR OF TRANSITION ANNUAL REPORT 2023



UNITED NATIONS  
Vienna, 2024

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This publication has not been formally edited.  
Publishing production: Publishing Section, United Nations Office at Vienna.

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A photograph of two individuals, a woman on the left and a man on the right, standing in front of a blue backdrop featuring the United Nations logo and text in multiple languages. The woman, Aarti Holla-Maini, has dark hair and wears glasses and a dark blazer. The man, Driss El-Hadani, has short dark hair, wears glasses, a dark suit, a white shirt, and a red tie. Both have their arms crossed. The backdrop includes the UN logo and text in Arabic, Chinese, English, and French.

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UNOOSA diligently serves as secretariat to COPUOS, which despite the global geopolitical context, continues to deliver results on space sustainability, space for sustainable development, the legal aspects of space resource utilization, and much more.

**Aarti Holla-Maini**  
Director

“

UNOOSA is ideally positioned to lead the efforts in shaping a sustainable and inclusive future in space.

**Driss El-Hadani**  
Deputy Director/Senior Adviser



# LEADERSHIP STATEMENT

**In joining the United Nations Office for Outer Space Affairs (UNOOSA) after a career in the private sector, I have come to realize the pivotal role the Office has to play and the responsibility that falls upon it as the only part of the Secretariat with a mandate entirely dedicated to space. The Office truly is the custodian of Space4SDGs and against this background, I appreciate its work even more.**

Space may seem invisible but its pervasive nature in our daily lives means that it is a critical infrastructure for the functioning of society. The global governance of space is an unquestionable necessity. The treaties, principles, guidelines and resolutions collectively represent a set of “rules of the road” for how Member States and industry use space safely and sustainably, and their implementation are critical to our continued reliance on space technology, data and services to help achieve the Sustainable Development Goals (SDGs).

Without space, many applications that play an intrinsic role in our daily lives would cease to function. Live coverage of disasters, elections and other world events, and our reliance on in-car navigation systems, weather forecasting, Internet access on ships and planes, and using ATMs regardless of location would all become a thing of the past, not to mention the monitoring of climate change, which to a large extent can only be done from space. As the Earth’s orbits become increasingly congested, the risk of collision in space is also growing. This is not science fiction but a real and possibly even imminent scenario, one which could wipe out our ability to benefit from space services in the manner in which we have become accustomed.

It is the responsibility of the States Members of the Committee on the Peaceful Uses of Outer Space (COPUOS) with UNOOSA as its secretariat, to make sure this does not happen. This requires Member States to rise above their competitive and political interests and remind themselves of the camaraderie and spirit that existed when the Outer Space Treaty was adopted in 1972, at the height of the cold war. If collaboration was possible back then, it is surely possible now, especially if we put people and progress at the centre.

In December 2023, I launched the United Nations Space Bridge, as a platform through which UNOOSA can provide thought leadership by asking the right questions and convening the right stakeholders, be they public, private or from civil society, to identify solutions and establish partnerships for the benefit of humanity.

Under my leadership, UNOOSA is rising to the challenge of ensuring that the international community and the United Nations system leverage space to address the critical challenges of our time: from using space safely and sustainably to the achievement of the SDGs, and from democratizing access to space data and solutions for the benefit of all countries to addressing climate change and lunar governance.

Since joining in September 2023, I have had the pleasure of meeting hundreds of representatives of Member States, industry figures, United Nations staff members and space experts, and come to greatly appreciate the work of UNOOSA, with its 35 staff members and a \$5 million budget. Punching above our weight, we have launched and transformed the space economies of entire nations by helping them deploy their very first satellites and by providing certainty for investments through the development of national space legislation. UNOOSA diligently serves as secretariat to COPUOS, which despite the global geopolitical context, continues to deliver results on space sustainability, space for sustainable development, the legal aspects of space resource utilization, and more new areas that are emerging from developments in this fast-paced sector.

I am pleased that space is being addressed at the highest level of the United Nations. In May 2023, Secretary-General António Guterres recognized the growing importance of space in policy brief 7: For all humanity – the future of outer space governance. This initiative, arising from the seventy-fifth session of the General Assembly and the launch of “Our Common Agenda”, aims to bolster the role of COPUOS and enhance the global governance of space to ensure its safe, secure and sustainable use.



And 2023 was just the start ...

**Aarti Holla-Maini**  
Director, UNOOSA



# LEADERSHIP STATEMENT

**In an era characterized by rapid and significant transformations in the space sector, UNOOSA stands at the forefront of navigating the accompanying challenges and seizing the emerging opportunities.**



The current pace of innovation and expansion in space activities marks an extraordinary period in history. However, it also underscores the critical need for robust international space governance to ensure the safety and sustainability of space for all nations and entities.

The past year has been pivotal for UNOOSA. Under dynamic new leadership, we embarked on a transformative journey, formulating and adopting a visionary strategy to enhance our impact and relevance significantly. This strategic shift is not only elevating our role but is also strengthening the Committee on the Peaceful Uses of Outer Space (COPUOS), positioning UNOOSA as a more influential player in the global space arena.

Moreover, as we advance on this journey, we must also consider how to enforce internationally agreed rules and regulations effectively. Developing rules and regulations is a delicate balance. We must ensure that we do not stifle innovation and new enterprises with unnecessary red tape. Space law must preserve the freedom to generate new ideas and implement new applications, while also supporting countries and the United Nations system, to implement the Sustainable Development Goals.

Additionally, in our commitment to space sustainability, the leadership of UNOOSA is dedicated to giving a voice to all countries, allowing them to contribute meaningfully to the debate on space sustainability. This inclusive approach ensures that diverse perspectives and needs are considered in shaping the future of space governance.

At UNOOSA, we acknowledge that the challenges of today's space sector are intertwined with substantial opportunities. Our dedicated team is actively working to develop and implement innovative mechanisms and programmes aimed at building the capacity of Member States. This includes capacity-building on the implementation of long-term sustainability guidelines, making space data and services not only accessible and affordable but also widely used across all Member States. We are committed to scaling operational solutions from local levels to the global stage, catering to a diverse range of stakeholders that include commercial entities and political organizations.

As we forge ahead, I am personally thrilled to be part of this dynamic and evolving field. The road ahead is indeed filled with challenges, but with the unwavering commitment of our team and a clear strategic direction, UNOOSA is ideally positioned to lead the

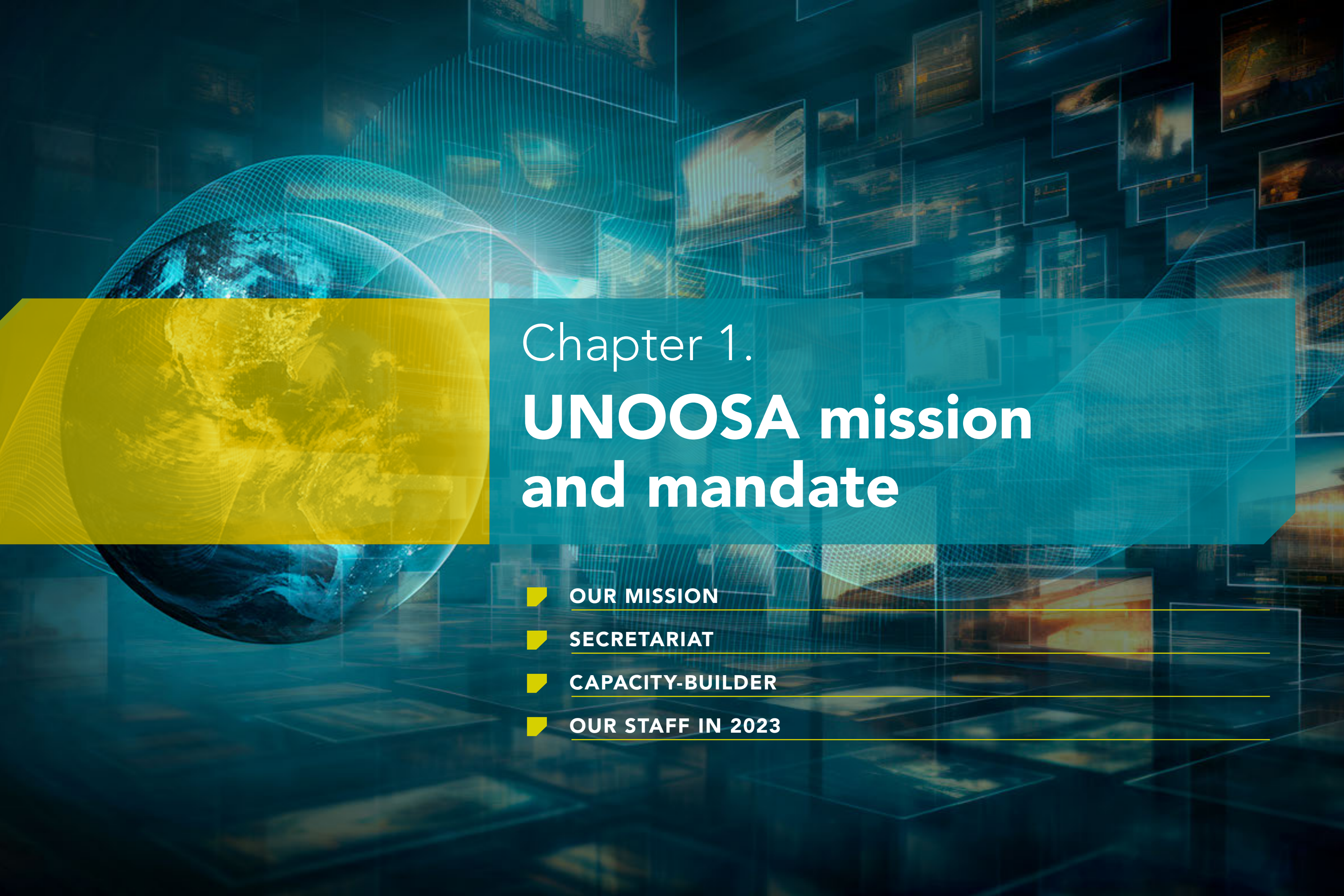
efforts in shaping a sustainable and inclusive future in space. This is a future that not only respects the domain of space but also maximizes its potential for the betterment of humanity.

Together, we are charting a course towards a future where space is not only a frontier for exploration but also a domain of cooperation, development and shared benefit for all of humanity.

**Driss El-Hadani**

Deputy Director and Senior Adviser, UNOOSA





# Chapter 1.

# **UNOOSA mission and mandate**

- **OUR MISSION**
- **SECRETARIAT**
- **CAPACITY-BUILDER**
- **OUR STAFF IN 2023**



## OUR MISSION

The mandate of UNOOSA focuses on the peaceful uses of outer space. The Office promotes international cooperation, the implementation of space law, access to space science and technology for sustainable development, particularly for the benefit of developing countries, and supports COPUOS in developing the global governance of outer space activities.

## OUR VISION

■ A world that fully captures the benefits of space technology, data and services

■ Where policymakers progress towards achieving the SDGs and improve the state of the world by leveraging space solutions and expertise

■ Supported by a coordinated United Nations system with an adequately resourced Office in charge of space



# SECRETARIAT

The Committee on the Peaceful Uses of Outer Space (COPUOS) is the intergovernmental body responsible for developing the global governance of outer space. COPUOS has two subsidiary bodies, both established in 1961:

The **Scientific and Technical Subcommittee (STSC)** continues to lead international negotiations on the long-term sustainability of outer space activities, the use of nuclear power sources in outer space and the use of space science and technology for sustainable development.

The **Legal Subcommittee (LSC)** addresses the legal aspects of space resources, the definition and delimitation of outer space, and clarifies and reviews the applicability of the outer space treaties.

Operating by consensus, COPUOS reports to the **Fourth Committee of the General Assembly**, which adopts an annual “omnibus” resolution on international cooperation in the peaceful uses of outer space.

UNOOSA also maintains the **United Nations Register of Objects Launched into Outer Space** on behalf of the Secretary-General. The Register was first created in 1961 at the request of Member States and is a treaty-based transparency mechanism that identifies the State responsible for each space object.

By December 2023, 2,588 satellites, a 25 per cent increase in registrations on 2022 (2,055), had been registered with UNOOSA. Since the start of the space age, over 89 per cent of all operational space objects have been registered.

The **International Committee on Global Navigation Satellite Systems (ICG)** brings together global navigation satellite system (GNSS) providers to improve technology, compatibility and interoperability, and the use of GNSS for sustainable development.

The **Space Mission Planning Advisory Group (SMPAG)** connects the world’s space agencies active in the domain of planetary defence. SMPAG is responsible for preparing an international response to a near-Earth object threat through the exchange of information, the development of collaborative research and mission opportunities, and by conducting planning activities to mitigate such threats.

UNOOSA also cooperates with the **International Asteroid Warning Network (IAWN)** in strengthening international coordination and cooperation in the case of near-Earth object impact hazards.

UNOOSA leads the **Inter-Agency Meeting on Outer Space Activities (UN-Space)**, a United Nations-wide endeavour that examines the contribution of space science and technology and their applications to the work of the organization and the achievement of the Sustainable Development Goals. Through the breadth of its activities, UNOOSA addresses all stages and aspects of space applications, space law and space policy, helping all countries leverage the benefits of space for sustainable development.



# CAPACITY-BUILDER

**As a capacity-builder, UNOOSA supports developing countries in the use of space data, services and technology, and develops national space laws and policies, so that they can promote their own space industry and achieve the SDGs.**

Through the **Programme on Space Applications (PSA)**, UNOOSA helps countries build capacity in space science, technologies and their applications in areas such as global health, disaster and climate change management, water and environmental monitoring, and natural resources management.

Via the **United Nations Platform for Space-based Information for Disaster Management and Emergency Response (UN-SPIDER)** programme, UNOOSA helps countries use space data and technologies, such as satellite imagery, to reduce the risks of disaster and respond to disasters when they occur. UN-SPIDER has offices in Beijing, Bonn and Vienna.

UNOOSA works closely with the six **Regional Centres for Space Science and Technology Education affiliated with the United Nations** to reinforce space-related education globally. The Centres provide unique training and education programmes, especially for nurturing talent in developing countries.

UNOOSA also implements a series of extrabudgetary projects focused on the space economy, Space4Women and Space Law for New Space Actors, and ensures the application of the Guidelines for the Long-term Sustainability of Outer Space Activities.

**Space Law for New Space Actors** was established in 2019 to help countries increase their capacity to draft or revise national space law and policy in line with existing international normative frameworks, such as the five United Nations treaties on outer space, the Space Debris Mitigation Guidelines and the Guidelines for the Long-term Sustainability of Outer Space Activities of COPUOS.

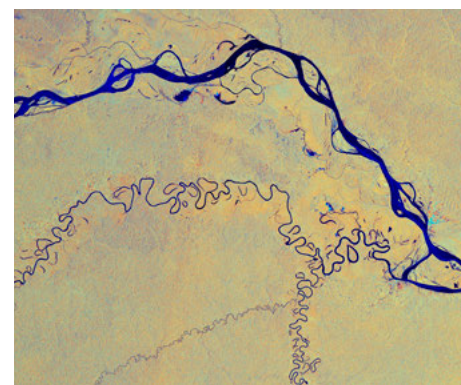
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Space is a fast lane tool for emerging countries. Supporting nations to navigate global and national challenges through the use of space technology and diplomacy is an exciting part of my job.

Jorge Del Rio Vera  
Scientific Affairs Officer  
(Space Technology)



Tentang Surya Satellite-1  
Credit: Surya University, Indonesia



Amazon River, Copernicus Sentinel data (2019), processed by ESA  
Credit: ©ESA



UNOOSA Director speaking at the Space4Women expert event in Ottawa, November 2023  
Credit: Canadian Space Agency



Sixty-second session of the Legal Subcommittee of COPUOS in Vienna, 2023  
Credit: UNIS



# UNOOSA IN ACTION IN 2023



Space4Youth essay competition winners at the NASA Space Camp in Huntsville, Alabama, United States



UNOOSA Director and attendees at the United Nations/IAF workshop pose for a selfie



Director speaking at a Young Professionals event at the 2023 IAC in Baku



Influencer Camille Bergin, @thegalacticgal, with the UNOOSA Director and UNOOSA partnership expert Allison Areias



Behind-the-scenes picture of participants at the United Nations/IAF workshop, Baku



UNOOSA Director meets Rodrigo Olsen Olivares, the new Permanent Representative of Chile to the United Nations in Vienna



ITU/World Radiocommunication Conference 2023 (WRC-23) in Dubai, United Arab Emirates, 2023. Credit: ITU



UNOOSA Director addressing the press at COP 28, United Nations Climate Change Conference in Dubai, United Arab Emirates



Delegates at the sixty-second session of the Legal Subcommittee of COPUOS, 20–31 March 2023, Vienna. Credit: UNIS



UNOOSA staff at end-of-year celebrations in the Rotunda of the Vienna International Centre



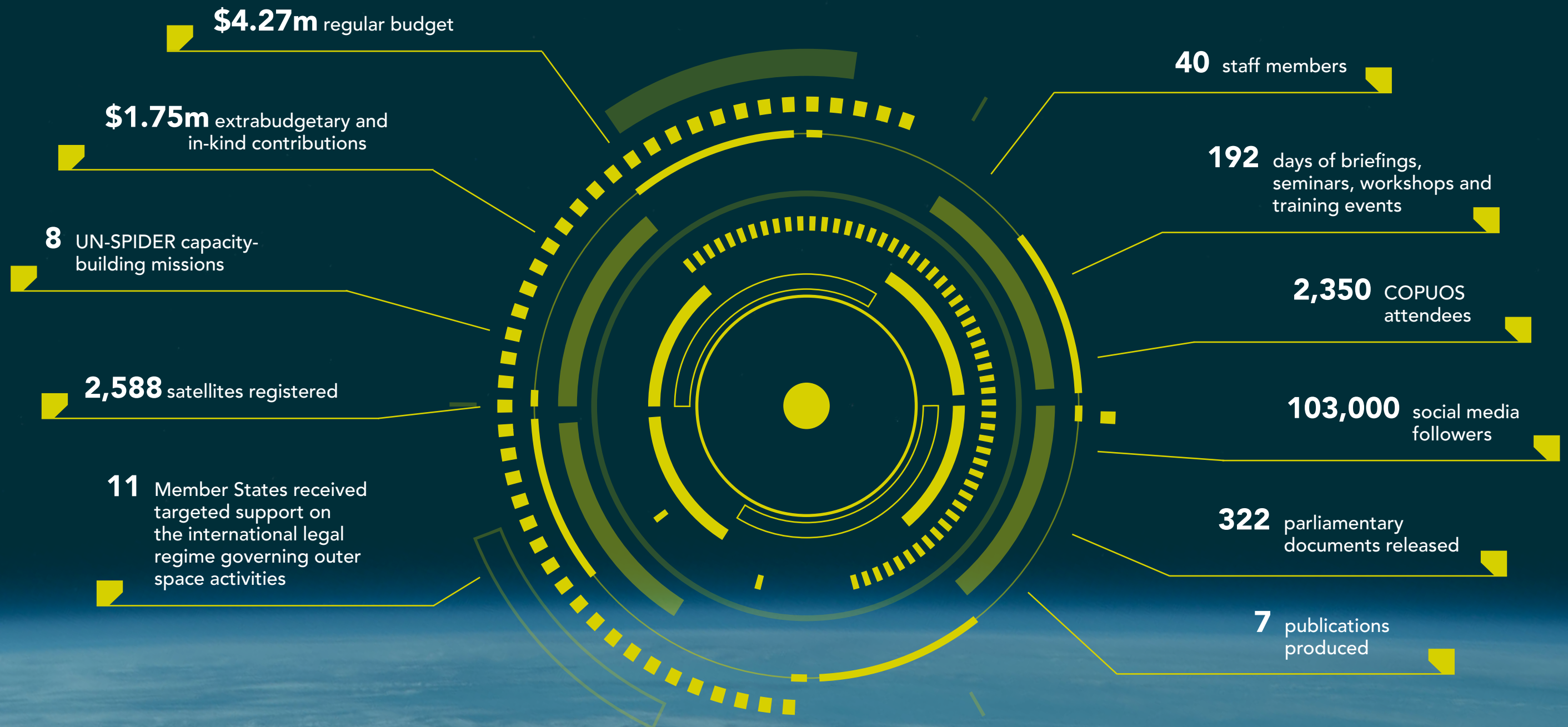
Space4Youth participants at the NASA Space Camp



Light display involving drones in the shape of a satellite at ITU WRC in Dubai, United Arab Emirates



# UNOOSA IN NUMBERS 2023





# UNOOSA STAFF 2023

Aarti Holla-Maini, *Director*  
Driss El-Hadani, *Deputy Director and Senior Adviser*  
Christopher Sto. Domingo, *Front Office*



## Office of the Director

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Allison Areias  
Veronica Cesco  
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Rosanna Hoffmann  
Tanya Keusen  
Romana Kofler  
Michael Newman  
Yukiko Okumura  
Hinata Oshima  
Kurian Maniyanipurathu  
Matej Siget

## International Committee on GNSS

Sharafat Gadimova  
Patrick Gindler

## UN-SPIDER Vienna

Lorant Czarán  
Jumpei Takami

## UN-SPIDER Bonn

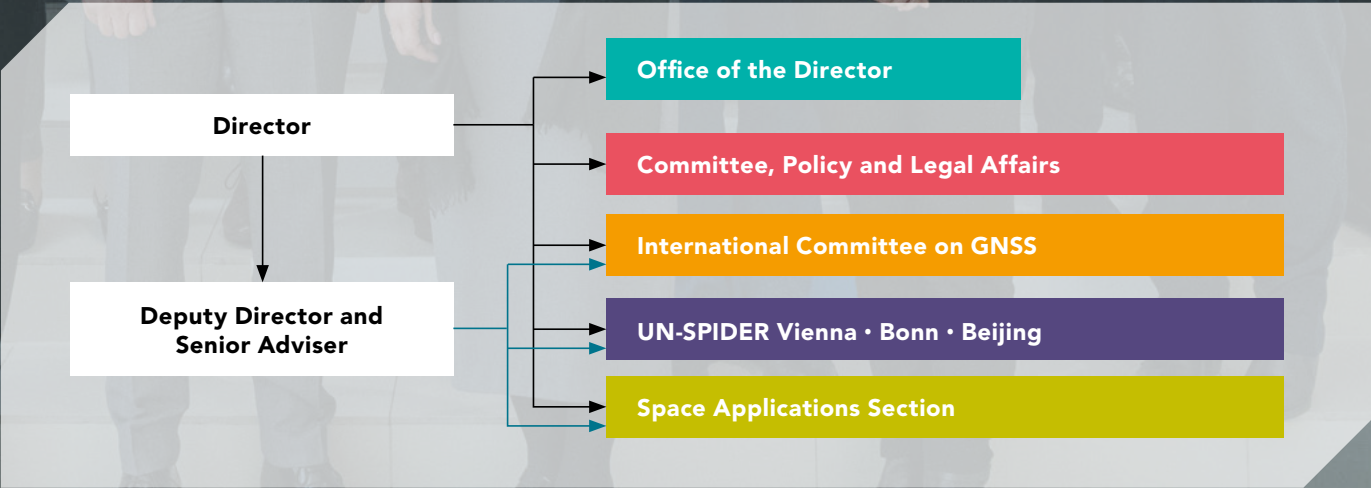
Juan-Carlos Villagran de Leon  
Martin Hilljegerdes

## UN-SPIDER Beijing

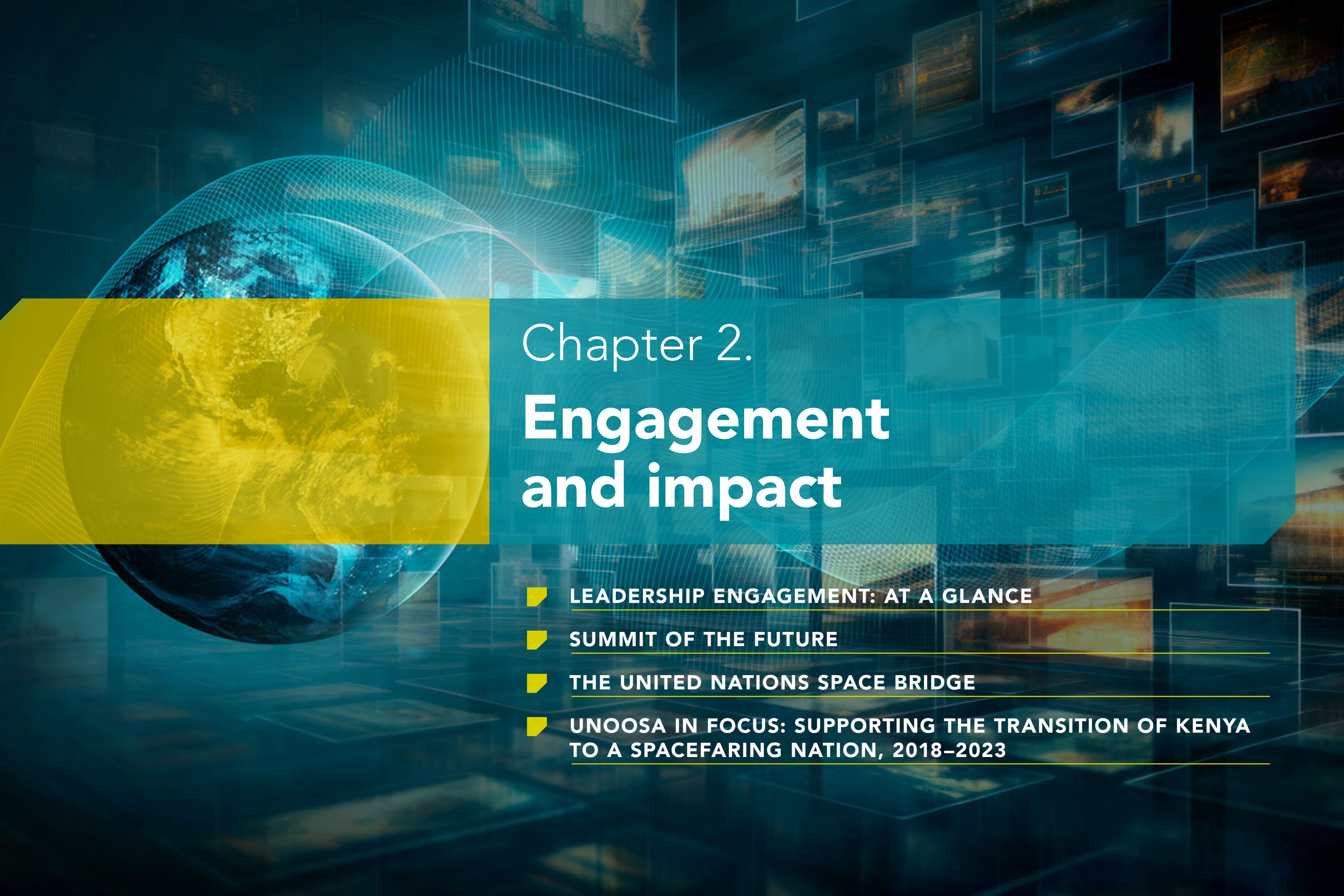
Gao Yuan  
Qu Yumiao  
Tang Tong

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Xing Yi Ang  
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Anne-Claire Grossias  
Nina Kicking  
Li Hongqing  
Nathalie Ricard  
Ahmed Osman  
Hazuki Mori







## Chapter 2.

# Engagement and impact

- **LEADERSHIP ENGAGEMENT: AT A GLANCE**
- **SUMMIT OF THE FUTURE**
- **THE UNITED NATIONS SPACE BRIDGE**
- **UNOOSA IN FOCUS: SUPPORTING THE TRANSITION OF KENYA TO A SPACEFARING NATION, 2018–2023**



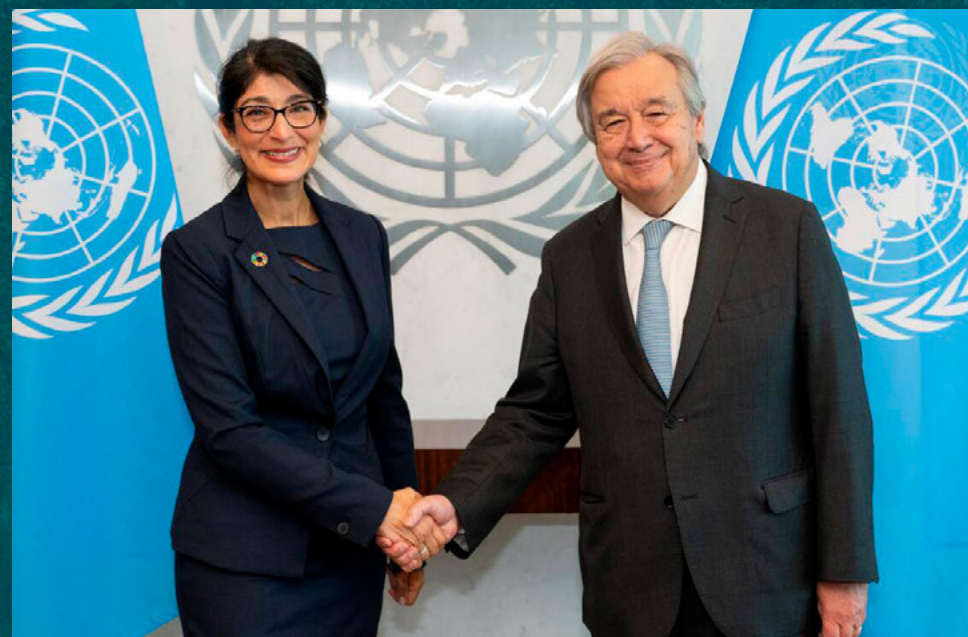
# LEADERSHIP ENGAGEMENT: AT A GLANCE

**2023 was a year of transition for the senior leadership of UNOOSA with Acting Director Niklas Hedman retiring in August, and Director Aarti Holla-Maini and Deputy Director/Senior Adviser Driss El-Hadani assuming their duties in September. This new leadership team brings with it a wealth of experience from the space industry, remote sensing and national administration.**

Between September and December 2023, the Director met with Secretary-General António Guterres, Heads of State, heads of space agencies and international organizations, ministers, Permanent Representatives of diplomatic missions to the United Nations in Vienna, industry leaders, journalists and non-governmental

organizations. These bilateral meetings further informed the Office's understanding of the key priorities of Member States and our partners, as well as our impact, effectiveness and added value. All of this will contribute to the development of a 2024–2030 vision and strategy document.

The following are some of the key events that have taken place under the new leadership of UNOOSA.



## The Fourth Committee of the General Assembly, New York

Director Aarti Holla-Maini travelled to New York for courtesy meetings with Secretary-General António Guterres, other senior United Nations officials and Permanent Representatives of Member States. These meetings underscored the value of the work of COPUOS and UNOOSA, and coincided with the adoption of draft resolution A/C.4/78/L.8 on international cooperation in the peaceful uses of outer space by the Fourth Committee of the General Assembly.



## The International Astronautical Congress 2023 in Baku

UNOOSA attended the seventy-fourth International Astronautical Congress (IAC) from the 2–6 October in Baku. As one of the world's largest and most pre-eminent space conferences, IAC allowed the Director to formally meet heads of space agencies, industry leaders and other international entities, including youth-focused organizations. The Director's outreach at IAC spurred new collaborative activities with Member States and other external stakeholders, as well as further informing the space sector as to the UNOOSA mission and mandate. These meetings provided the Director with a clearer picture of how the space sector perceives UNOOSA and seeks further engagement.



### First Global Monitoring for Environment and Security and Africa (GMES and Africa) Support Programme Phase 2 Forum, Sharm Al Sheikh, Egypt

The GMES and Africa Continental Forum, held in Sharm El Sheikh, Egypt, focused on Earth observation for resilience and innovation in Africa. The Deputy Director attended this Forum and delivered a keynote speech on strengthening engagement with regional and national institutions for the use of Earth observation where he highlighted UNOOSA activities in Africa, including UN-SPIDER technical advisory missions and capacity-building initiatives to aid national disaster management agencies in accessing and utilizing space data during disasters.

An important meeting with African Union representatives focused on advancing space activities and applications in Africa. Strategic activities identified include aligning with the African space policy and strategy, implementing the "Space2030" Agenda, developing policy and regulatory frameworks, focusing on disaster risk reduction, emergency response, and leveraging space-based solutions for sustainable development and health applications. These activities mark the Office's strategic objective of prioritizing cooperation with Africa, aiming to bolster the continent's resilience and innovative use of Earth observation technologies.



### International Telecommunications Union 2023 World Radiocommunication Conference in Dubai, United Arab Emirates

The month-long World Radiocommunication Conference (WRC), held every three to four years, brings together up to 4,000 delegates to review and revise, if necessary, the radio regulations that govern the use of the radio-frequency spectrum and the geostationary-satellite and non-geostationary-satellite orbits. The Director made an intervention in the fifth plenary session, highlighting the role of UNOOSA and COPUOS in space governance, sustainability and capacity-building. In particular, she underscored the need to preserve specific radio frequencies used for disaster management and emergency services, which remain vital in an era of increased climate change-related severe weather events.



### COP28 United Nations Climate Change Conference in Dubai, United Arab Emirates

The 2023 Conference of the Parties in Dubai, United Arab Emirates, parts of which the Director attended from 29 November to 5 December, brought together climate experts, activists and policymakers from around the world to address the pressing challenge of climate change. The Director's speaking engagements and outreach focused on demonstrating the critical role of space and space-based assets in combating climate change, as well as UNOOSA actions to ensure developing countries have access to these technologies and data. Meetings at the Conference of the Parties developed into future collaborative events scheduled for early 2024.



### Space4Women Expert Meeting, Montreal, Canada

The 2023 Space4Women Expert Meeting took place in Canada from 30 October to 3 November and was jointly organized by UNOOSA and the Canadian Space Agency. It was here that the decision was taken to draw up a gender mainstreaming toolkit, based on the expertise of the United Nations, the Canadian Space Agency and the participants at the expert meeting.

### World Space Forum, Vienna

The World Space Forum 2023 took place in Vienna under the banner of "Space for Our Common Future." It served as a pivotal platform for stakeholders to discuss space governance issues, emphasizing the need for multilateral efforts to ensure the peaceful and sustainable use of outer space. Guided by foundational documents such as the Secretary-General's policy brief entitled "For all humanity – the future of outer space governance," participants reaffirmed their commitment to charting a cooperative and inclusive course towards a transparent and sustainable space environment.

Key themes emerged, including the need for inclusive participation, the critical role of international bodies such as COPUOS, and the transformative potential of space technologies in achieving the SDGs by 2030. The Forum set a precedent for future discussions on space sustainability, underscoring the need for a cooperative and inclusive approach to harness space for global good. As the international community looks towards the Summit of the Future, the Forum's insights will undoubtedly shape the future governance of space activities, fostering greater cooperation and coordination for a more peaceful and prosperous future in space exploration and utilization.



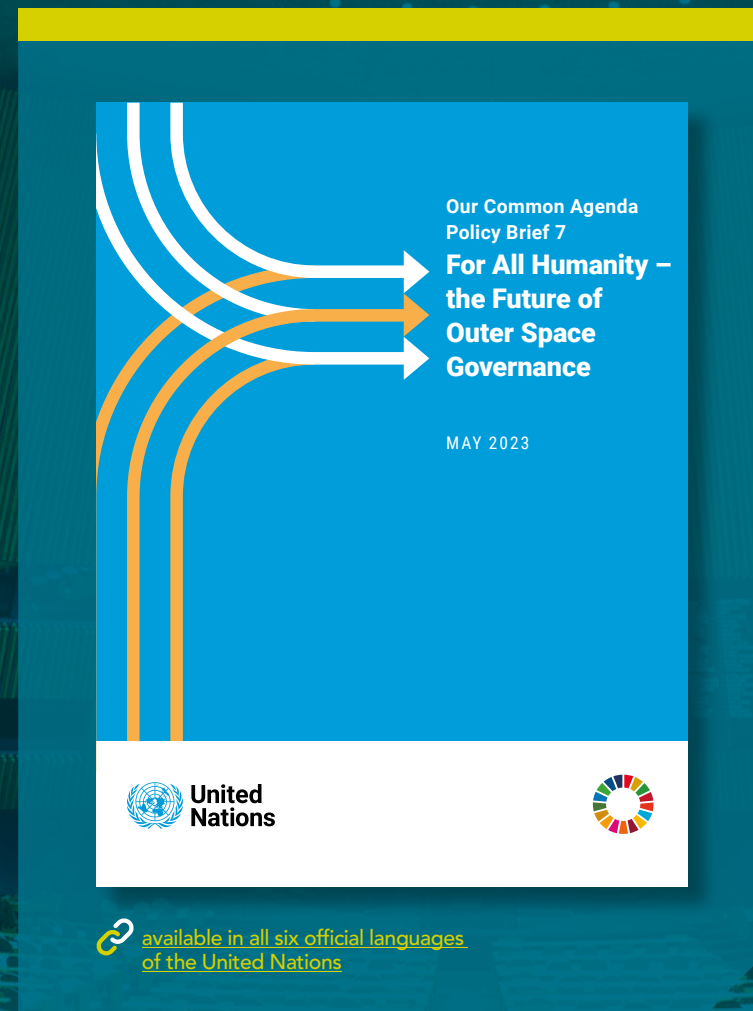


# SUMMIT OF THE FUTURE

Following the seventy-fifth session of the General Assembly and the launch of “Our Common Agenda”, which proposed a Summit of the Future to renew multilateralism and accelerate the implementation of existing commitments, Secretary-General António Guterres published policy brief 7: For all humanity – the future of outer space governance in May 2023.


The policy brief aimed to identify gaps in international governance and proposed recommendations for Member States to reinforce the role of COPUOS and promote the safe, secure and sustainable use of outer space.

As part of UNOOSA commitment to facilitating constructive discourse, one preparatory virtual symposium was organized from 27–29 November 2023, focusing on technical challenges and policy considerations. This symposium provided a robust foundation for deliberations on critical themes such as space traffic management, space resources and space debris.



The policy brief proposes:

-  A strategic framework focusing on the sustainability of outer space, advocating for COPUOS to develop either a unified regime or specific governance frameworks to tackle issues such as space traffic management, debris removal and space resource activities
-  The need for increased collaboration among United Nations entities through the Inter-Agency Meeting on Outer Space Activities (UN-Space), to expedite the use of space assets in achieving the SDGs
-  Inclusive governance approaches, urging Member States to facilitate the involvement of commercial actors, civil society and other stakeholders in outer space-related processes. Member States will continue to discuss the proposals for the Pact of the Future, which will be negotiated at the General Assembly in New York in September 2024

 available in all six official languages of the United Nations



# THE UNITED NATIONS SPACE BRIDGE: THOUGHT LEADERSHIP, PRAGMATISM, ACTION

**Director Holla-Maini launched the United Nations Space Bridge (USB) in December 2023. The objective is to promote global dialogue to enable local action using space solutions.**

This action will be achieved by convening policymakers and key stakeholders through dedicated round tables aimed at enhancing international expertise, asking the right questions and breaking down silos.

USB will also help scale national or local solutions that empower international policymakers to advance space sustainability and leverage space for the SDGs.



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UNOOSA is the only part of the United Nations with a mandate entirely dedicated to space. As such, we carry the responsibility of ensuring that every Member State can contribute to and benefit from space technology, data and services. USB will enhance our capacity-building activities to ensure that space solutions can be scaled where needed to drive transformational change, build resilience and enhance global sustainability.

Aarti Holla-Maini  
Director



# UNOOSA IN FOCUS: SUPPORTING THE TRANSITION OF KENYA TO A SPACEFARING NATION, 2018–2023

UNOOSA continues to engage with Member States across all areas of space policy, science and technology. We take pride in our recent partnerships with Kenya, where we have supported the country in her spacefaring journey on Earth, through parliament and into orbit. These projects have also allowed UNOOSA to strategically support countries to implement international commitments stemming from COPUOS for the benefit of their citizens.



1KUNS-PF (Kenya) and Irazu (Costa Rica), deployed at the same time, from ISS  
Credit: JAXA

## Kenya deploys its first satellite from the International Space Station

1KUNS-PF was the first satellite deployed by Kenya, as well as the first satellite ever developed and deployed under the auspices of the United Nations. Named "1KUNS-PF", or the "First Kenyan University Nano Satellite-Precursor Flight", it was developed by a team at the University of Nairobi after they were selected for the first round of KiboCUBE in 2016. KiboCUBE is a cooperation programme between UNOOSA and the Japan Aerospace Exploration Agency (JAXA) offering developing countries the opportunity to develop and deploy their own cube satellite (CubeSat) from the Japanese Experiment Module "Kibo" on the International Space Station.

The team from Kenya deployed 1KUNS-PF on 11 May 2018 and had the opportunity to test technologies for the future launch of a larger Earth observation satellite, as well as acquiring additional data that allows Kenya to monitor agriculture and coastal areas. The successful deployment of 1KUNS-PF proved to be a catalyst for the creation of the Kenya Space Agency.

## Registration of 1KUNS-PF

The registration of objects launched into outer space helps to understand the basic question of "who owns what in space?", and it is an obligation for both States Parties to the Registration Convention and Member States of the United Nations mandated by General Assembly resolution 1721(B) of 1961.

Following the successful deployment of 1KUNS-PF, Kenya demonstrated itself to be a responsible actor by registering it with the United Nations Register of Objects Launched into Outer Space that UNOOSA maintains on behalf of the Secretary-General.

## Supporting Africa's climate mission

In 2021, a consortium team from the space agencies of Egypt and Kenya and the Ugandan National Space Programme was selected by UNOOSA and Airbus Defence and Space and awarded the opportunity to jointly develop a remote sensing camera system to monitor weather, floods and impacts of climate change in East Africa.



UNOOSA and Airbus pick African team to fly "free" climate monitoring payload on the International Space Station  
Credit: Airbus

ClimCam will be attached to Bartolomeo, the Airbus external payload hosting platform on board the International Space Station for one year. The institutions have agreed to an open data policy, sharing information and images acquired from the project to guide climate change mitigation efforts across the entire region.



## From telescopes to asteroid warning

UNOOSA and the Keldysh Institute of Applied Mathematics of the Russian Academy of Sciences (KIAM RAS) have announced the winners of their joint opportunity ISONscope. The Kenya Space Agency and the Nigeria Centre for Basic Space Science of the National Space Research and Development Agency will receive two small wide field-of-view telescopes as a prize.

It is foreseen that the provision of such telescopes could allow Kenya and Nigeria to contribute to the mission of the International Asteroid Warning Network (IAWN) by broadening global asteroid detection capabilities.

## The Kenya space bill: a robust regulatory framework

Prior to a tailor-made space law technical advisory mission in 2023, Kenya participated online in an introductory regional space law technical advisory mission in 2020 and an in-person regional mission for African countries in 2022.

In April 2023, the same week that Kenya launched its first indigenously produced and operational satellite, Taifa-1, UNOOSA delivered a tailor-made technical advisory mission in Nairobi, in partnership with the Kenya Space Agency. This technical advisory mission was conducted under the auspices of the UNOOSA Space Law for New Space Actors project, and funded with the generous support of France.

This mission focused on the review of the draft Kenya space bill. Specific areas addressed were authorization, licensing and continuous supervision of space activities; liability and insurance; international and national registration requirements; safety considerations; Earth observation legal regimes; satellite data security; and the legal aspects of spaceports.

The mission established a whole-of-government approach to developing space law and engaged academia and the private sector to understand the national space landscape. In November 2023, Kenya initiated public consultations on the draft national space bill, showcasing the country's commitment to establishing a comprehensive legal and policy framework to govern its space sector.

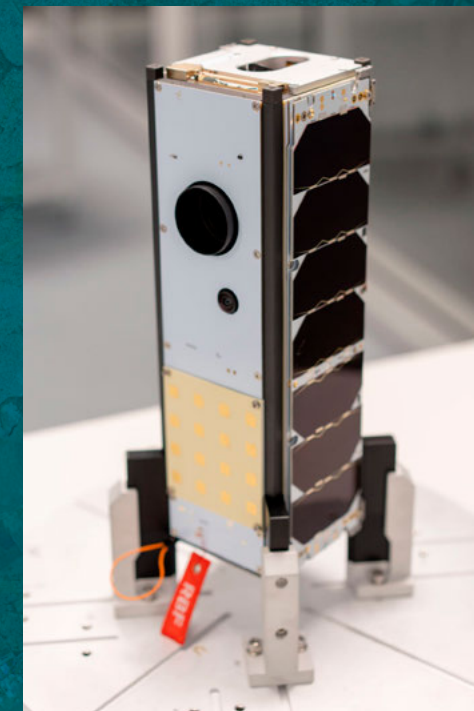


Chairperson of the Kenya Space Agency Board (KSAB), James Aruasa, Ambassador Harriet Nduma, Deputy Permanent Representative of Kenya to the United Nations in Vienna, and Chief Executive Officer of the Kenya Space Agency Brig. Hillary Kipkosgey

Credit: A. Peebles/UNOOSA



Kenya Space Law Project  
Credit: A. Peebles/UNOOSA



Taifa-1 Sat is Kenya's first operational Earth observation satellite

Credit: Kenya Space Agency

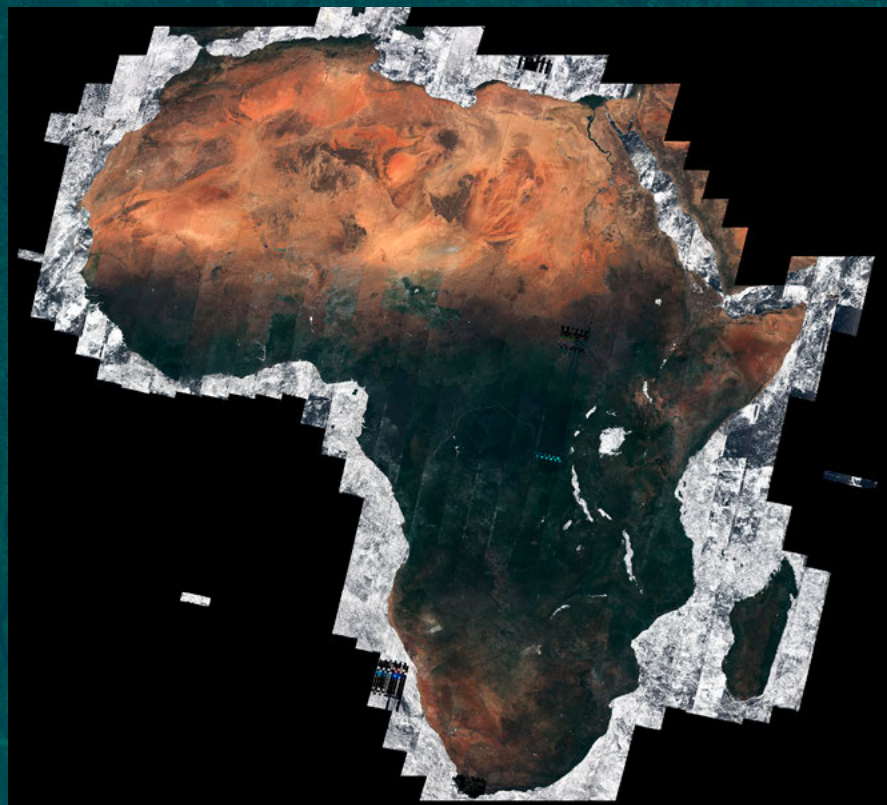


## Towards the future: Universities, the Avio Vega-C launcher and the China Space Station

There remain further opportunities for Kenya and UNOOSA to partner. The University of Nairobi was recently chosen as the first round awardee for the UNOOSA Vega-C opportunity, which is another free of charge U3 CubeSat satellite slot using the Avio Vega-C rocket. The nanosat "NaSPUoN – OGPM2030" will be developed by a consortium involving the University of Nairobi, the University of Arizona and Space Trust, a non-profit based in the United Kingdom. The project's two objectives involve transmitting a voice recording of world leaders into

deep space, and conducting Earth observation with a level of at least 10-metre resolution.

Machakos University in Kenya is also part of a consortium of La Sapienza Università di Roma and the Italian firm In-Quattro s.r.l. established to test fluid physics and combustion in microgravity on board the China Space Station, which is a recent opportunity under the UNOOSA Access to Space for All initiative. The experiment is currently being developed.



African mosaic composed of Copernicus Sentinel data (2016), processed by Brockmann Consult/ Université catholique de Louvain as part of the ESA Climate Change Initiative Land Cover project  
Credit: ©ESA



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UNOOSA lives true to its clarion Access to Space for All initiative. Through its technical assistance programmes aimed at democratizing space, UNOOSA has given aspiring spacefaring nations such as Kenya “real wings to fly into space.” UNOOSA has supported Kenya through impactful capacity-building projects targeted at space systems engineering, harnessing space-derived data for decision support, and providing technical support in instituting a sound policy, legal and regulatory framework for sustainable national space activities.

Brig. Hillary Kipkosgey,  
Ag. Director General/Chief Executive Officer,  
Kenya Space Agency





# Chapter 3.

## Our impact: 2023 highlights

■ SPACE SUSTAINABILITY

■ SPACE4CLIMATEACTION

■ SPACE FOR THE SUSTAINABLE  
DEVELOPMENT GOALS

■ DEVELOPING COUNTRIES

■ PARTNERSHIPS

■ UNITED NATIONS REGISTER OF OBJECTS  
LAUNCHED INTO OUTER SPACE

■ REGIONAL CENTRES FOR SPACE SCIENCE  
AND TECHNOLOGY EDUCATION  
(AFFILIATED TO THE UNITED NATIONS)

■ PUBLICATIONS



# SPACE SUSTAINABILITY

Ensuring the safe and sustainable use of space, through the implementation of COPUOS commitments and the development of global space governance, preserving it for future generations

## Space Law for New Space Actors, promoting the implementation of COPUOS commitments

In 2023, the Office provided technical advisory services to 11 governmental entities that included regional technical advisory missions to member States of the Asia-Pacific Space Cooperation Organization (APSCO), as well as tailor-made events for the national authorities of Chile, Costa Rica and Kenya.



Technical advisory mission for APSCO member States (Focus 5a)  
Credit: APSCO

In June, the Office welcomed representatives from six APSCO member States to the Vienna International Centre for a customized in-person technical workshop, specifically China, Mongolia, Pakistan, Peru, Thailand and Türkiye. Experts provided insights on a wide array of subjects, including the application of international space law, authorization, licensing, continuous supervision of space activities, liability and registration requirements.

UNOOSA also delivered a series of lectures to students enrolled in the Space Engineering International Course at the Kyushu Institute of Technology in Japan on space law and policy that also focused on the importance of responsible and sustainable use of the space environment.

The Space Law for New Space Actors project is generously supported by the Governments of Belgium, Chile, France, Italy, Japan, and APSCO, Kyutech and the Secure World Foundation

[Project page](#)

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Robust regulation and national space laws can attract economic investment, ensuring predictability and that space exploration is equitable and sustainable. At UNOOSA, contributing to space sustainability is fulfilling. Our “Space Law for New Space Actors” project educates and guides States in the safe and sustainable use of outer space, grounded in the fundamental legal principles established by the Outer Space Treaty.

Rosanna Hoffmann  
Associate Legal Officer



## Accessing Space Treaty Resources Online (ASTRO) database



Space Law for New Space Actors technical advisory mission to Costa Rica, November 2023  
Credit: Ministry of Foreign Affairs of Costa Rica

With the financial support of Luxembourg, UNOOSA developed the ASTRO database, which was launched in March 2023. ASTRO is a collection of international and national instruments on space activities and includes a depiction of the current country ratification status of the five United Nations treaties on outer space. The database includes national instruments on space activities, including laws and policies, which are continuously collected and uploaded to share best practices and foster the development of national space-related legislation and policies.

[Astro database](#)



# SPACE SUSTAINABILITY

## The registration project: understanding “who owns what in space?”

Underpinning our role in maintaining the United Nations Register of Objects Launched into Outer Space, and thanks to the generous support of the United Kingdom Space Agency, we conducted a stakeholder study of 47 Member States and ESA on their registration practices and implementation of the Registration Convention. The study identified how:



States are determining “the State of Registry” of a launched object in an era of joint launches and multinational space missions



The relevance of registration for new and novel space activities, such as active debris removal or in-orbit servicing and manufacturing

The study was strengthened by the first expert meeting of national focal points on registration, held in Vienna from 28–29 May 2023. Since the project began, UNOOSA has received registrations pertaining to legacy space objects and approximately 50 new or updated national focal points of registration.



**You would of course register your new car with the local driving authority. Registering space objects answers the question of “who owns what in space?” It is a critical transparency mechanism and will become increasingly important with the onset of new and novel space missions, large constellations and transfers of ownership.**

Andrew Peebles  
Associate External Relations Officer



## Awareness-raising and capacity-building related to the implementation of the Guidelines for the Long-term Sustainability of Outer Space Activities

The Office continues to prioritize its work on space sustainability. In 2023, the Office implemented phase three of its multi-year project: “Awareness-raising and capacity-building related to the implementation of the Guidelines for the Long-term Sustainability of Outer Space Activities (LTS Guidelines)”. Phase three included the organization of a series of virtual events that engaged diverse experts in peer-to-peer exchanges. The first event focused on policy and regulatory frameworks; the second event on the safety of space operations; the third on international cooperation, capacity-building and awareness; and the last on scientific and technical research and development. The four multi-stakeholder events allowed for the showcasing of good practices and possible models and tools to support the implementation of the LTS Guidelines.



The project also developed a new, free online course on the long-term sustainability of outer space activities and the LTS Guidelines, which was launched in September 2023.

All resources, including video recordings, implementation case studies and other activities carried out through the Project are available at the dedicated [website](#).

The project is made possible through financial support provided by the United Kingdom.



# SPACE4CLIMATEACTION

Ensuring space technologies, data and services are utilized to address climate-related challenges, climate action, disaster-risk reduction and environmental sustainability



Space is part of our natural capital. At UNOOSA we contribute to raising global awareness on the sustainable use of outer space and Earth observation to tackle climate change proving that the sky is no longer the limit.

Anne-Claire Grossias  
Associate Programme Officer



## UNOOSA signed the charter on the establishment of the Space for Climate Observatory

The Space for Climate Observatory (SCO) is an international initiative defined by the charter on the establishment of the Space for Climate Observatory. It is a collective effort devoid of legal personality, based on the best efforts of its 42 signatories, with UNOOSA signing the charter in June 2023.

The objectives of SCO are to provide operational tools (SCO projects) and studies to help decision makers to adapt to climate change. This will foster cooperation on the practical use of space technology and build a network for space agencies and public and private entities involved in the use of Earth observation data for operational climate action.

## UN-SPIDER training supporting the activation of the International Charter on Space and Major Disasters

Since 2019, UN-SPIDER has been co-organizing training courses with the International Charter on Space and Major Disasters to train professionals from developing countries on the procedures employed by project managers and value-added providers in case of activations. In 2023, UN-SPIDER activated the International Charter at the request of the national disaster management agencies of Ghana, Mozambique and Zambia following the serious floods that affected these countries.

In 2023, UN-SPIDER and the International Charter organized two training courses for professionals from disaster management and space agencies of countries in Africa and Latin America on the use of the Charter Mapper. The training courses proved critical, as many of those participants were later engaged as project managers or value-added providers, generating maps of areas affected by floods and forest fires. For example, in Nigeria, a few days after the training course, professionals from the National Space Research and Development Agency of Nigeria managed the activation in the wake of the floods on the Benue River. In a similar fashion, professionals from Algeria, Chile and Ecuador were designated to manage activations in their countries a couple of months after the training courses as a result of forest fires or floods in these countries in 2023 and 2024.

## UN-SPIDER: major disasters, strengthening institutional capacity and a regional network

UN-SPIDER carried out institutional strengthening missions to South Africa and Tonga and a scoping mission to Tonga to continue promoting the use of solutions developed by the space community in disaster management applications. Following this, we welcomed the South African National Space Agency (SANSA) as the newest Regional Support Office. In this role, SANSA will work with UN-SPIDER in facilitating the use of space-based information in disaster management applications in southern African countries.

UN-SPIDER organized three international training courses and three national training courses with several partners. The international training courses allowed more than 50 professionals from national disaster management institutions, space agencies and universities from developing countries to learn how to use specific procedures or tools developed by the space community and by UN-SPIDER. The international training courses targeted professionals from Algeria, Argentina, Barbados, Bolivia (Plurinational State of), Brazil, Chile, Colombia, Cook Islands, Costa Rica, Ecuador, Eswatini, French Polynesia, Ghana, Kiribati, Madagascar, Mexico, New Caledonia, Nigeria, Palau, Peru, Samoa, Solomon Islands, South Africa and Tonga. National training courses also targeted more than 85 professionals from El Salvador, Nepal and South Africa.



# SPACE FOR THE SUSTAINABLE DEVELOPMENT GOALS

Advancing the implementation of the SDGs through the use of space technology, data and services

## Space4Women: empower, connect, grow

Space4Women connects hundreds of women and girls, empowers them to pursue studies and careers in the space sector, and increase the capacity of organizations to advance gender equality. In 2023, the third edition of the mentorship programme was launched. It included 94 mentors and 152 mentees from 67 countries, including 32 from the Global South. As a result, mentees improved their skills, had access to scholarship and internship opportunities, boosted their careers, developed new projects, gained self-confidence and became better equipped to navigate the space industry. Supported by the Government of Israel, the mentorship programme empowered women and girls globally.

Organized jointly by UNOOSA and the Canadian Space Agency, the 2023 Space4Women Expert Meeting took place in Canada from 30 October to 3 November. The most tangible output of this meeting is the agreement to develop a gender mainstreaming toolkit. International experts from the United Nations, the Canadian Space Agency and the participants at the expert meeting provided concrete measures and case studies that can assist space organizations in increasing the representation and retention of women in the space sector.

Data availability and accessibility on women's participation in the space sector is also limited. In the absence of quantifiable data, it is difficult to have an evidence-based perspective on measures to advance gender equality. In 2023, with the support provided by the Republic of Korea, UNOOSA launched the Landmark Study on Gender Equality and the Space Sector. To be published in 2024, this study will provide key data on gender diversity and provide a baseline to track progress towards achieving SDG 5.



Participants at the Space4Women expert event, Montreal, Canada  
Credit: Canadian Space Agency

## Health in the space age

It is only a matter of time before the next health emergency materializes. Preparedness is crucial and space plays a key role. Satellites are used to identify malaria and dengue hotspots, and can connect remote areas to the Internet, thus enabling telemedicine. There are even actors researching the possibility of printing 3D body parts in zero gravity.

The General Assembly recognized the importance of Space for Global Health in resolution 77/120. To put the resolution into action, in November 2023, a multidisciplinary international conference was organized to support the United Nations mandate of the Space and Global Health Network.

Work subsequently started on the preparation of an action plan addressing three core needs:

- **Lack of multidisciplinary experts**  
Action: design of a curriculum for capacity-building on space and global health
- **Space data continuity and availability**  
Action: identification and description of space-based essential health variables so new space missions could take them into account
- **Space and health interoperability**  
Action: advance organizational and technical interoperability in the field of space and global health so that data can be shared and used where and whenever needed

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GNSS is an invisible, critical infrastructure that the planet relies on for trade and seamless movement.

Sharafat Gadimova  
Scientific Affairs Officer



## International Committee on GNSS (ICG)

ICG is an important platform for communication and cooperation in the field of global navigation satellite systems (GNSS). As new systems emerge, signal compatibility and interoperability among the various GNSS and transparency in the provision of open civil services will be key factors in ensuring that civil users around the world receive the maximum benefit from GNSS and their applications. One main challenge is to provide assistance and information for those countries seeking to integrate GNSS into their basic infrastructure. In 2023, the European Commission organized and hosted the seventeenth meeting of ICG in collaboration with the Spanish Presidency of the European Union. At this meeting, Algeria and Türkiye were recognized as new members of ICG.



# DEVELOPING COUNTRIES

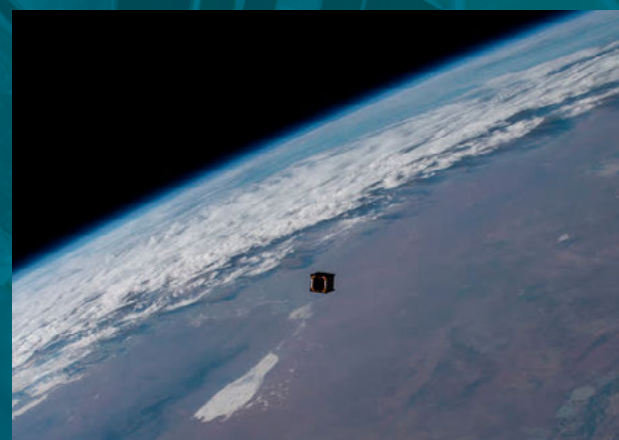
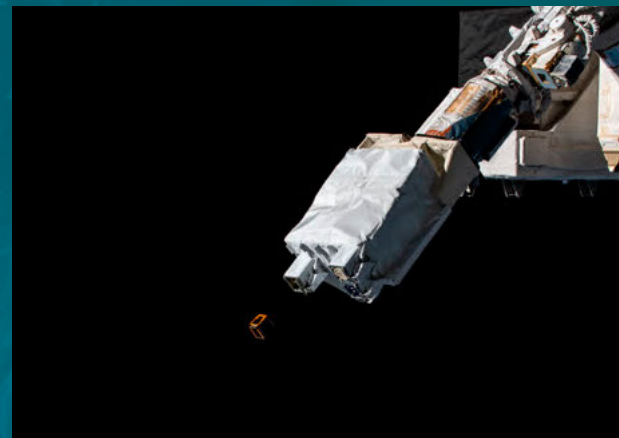
Ensuring developing countries can contribute to, and benefit from, space tech, data and services

## Enabling access to space for all with KiboCUBE: successful deployment of the first CubeSat from Indonesia

Since 2018, UNOOSA has supported the launch of satellites from Kenya, Guatemala, Mauritius and the Republic of Moldova. These activities have been the catalysts for the creation of space economies and agencies, and have helped Member States register space objects for the first time.

As the awardee of the third round of the programme, the student team from Surya University in Indonesia received technical advice and support from JAXA that allowed them to build the Surya Satellite-1 (SS-1).

SS-1 was the fifth CubeSat deployed into space under KiboCUBE. Working closely with the JAXA teams, the first CubeSat designed and manufactured by undergraduate students of Indonesia was deployed from the International Space Station (ISS) on 6 January 2023, with the mission of testing communication between an Automatic Package Reporting System payload and the ground using amateur radio frequency. The development and operation of SS-1 will serve to disseminate nanosatellite technology in Indonesia, especially to students and universities, and further develop national capacities.



JEM Small Satellite Orbital Deployer (J-SSOD)  
Credit: JAXA/NASA

## Unlocking hypergravity experiments for all: the HyperGES Fellowship

The HyperGES Fellowship programme is a joint initiative between UNOOSA and the European Space Agency (ESA) providing selected research teams from developing countries with access to the ESA Large Diameter Centrifuge facility to conduct hypergravity experiments. From September to December 2023, three teams selected in the past two rounds of the HyperGES carried out their hypergravity experiment series at the largest ESA site, the European Space Research and Technology Centre in Noordwijk, the Kingdom of the Netherlands. The team from Mahidol University, Thailand, had the opportunity to study the effect of hypergravity on watermeal, the smallest and fastest-growing flowering plant on Earth. This research holds great potential for helping unlock various possibilities for the future application of the plant as a food and oxygen source for space exploration as well as on other planets where gravity may be higher than on Earth.

The all-female team from the Universidad Católica Boliviana San Pablo of Bolivia (Plurinational State of) examined how hypergravity affects the break-up of human red blood cells to improve the understanding of anaemia in space. Along with showcasing the efforts of Bolivian women in the space field, this research may provide invaluable insights to advance medicine both in space and on Earth.

Finally, the team from the University of Science and Technology of Macao, China, analysed the medical and biotechnological potential of fungi for future space exploration, opening an additional door to the future of outer space activities.



The team from Mahidol University, Thailand, had the opportunity to study the effect of hypergravity on watermeal  
Credit: Mahidol University, Thailand



The second round awardee of HyperGES from the Universidad Católica Boliviana of the Plurinational State of Bolivia conducted experiments in hypergravity conditions  
Credit: ©ESA

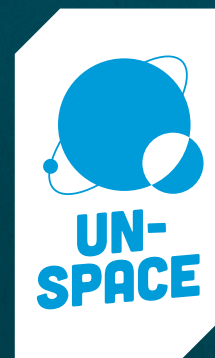


# PARTNERSHIPS

## Matchmaking: United Nations/ International Astronautical Federation workshop

Prior to the formal opening of the 2023 International Astronautical Congress (IAC) in Baku, UNOOSA, Azercosmos and the International Astronautical Federation (IAF) co-hosted the thirtieth United Nations/IAF workshop on space technology for socioeconomic benefits: “Challenges and Capacity-building Opportunities for Emerging Space Nations”. Part of the UNOOSA capacity-building mandate is to encourage and facilitate more capacity-building efforts by the private sector for the benefit of emerging spacefaring ecosystems, bringing benefits to both capacity-building providers and beneficiaries and paving the way for future partnerships and commercial relationships. To this end, UNOOSA held a special matching session during the United Nations/IAF workshop at IAC in 2023, where capacity-building providers or experts connected with capacity-building beneficiaries to discuss how better to develop partnerships and identify barriers to further collaboration. The session was particularly well received, with requests for similar sessions at future workshops and at other venues, and a recognition that, globally, more opportunities are needed to bring these two communities together.

## UN-Space



The Inter-Agency Meeting on Outer Space Activities, now called UN-Space, has been the inter-agency mechanism coordinating efforts related to the use of space technology and applications in the work of United Nations entities since the mid-1970s. The Office is the secretariat for UN-Space.

In 2023, UN-Space partnered with the Working Group on Capacity-building and Data Democracy of the Committee on Earth Observation Satellites (CEOS). The joint meeting was devoted to the identification of the needs of Member States and United Nations entities for capacity-building in the use of space-based observations.

In October 2023, UN-Space held meetings in Brindisi, Italy in collaboration with the Service for Geospatial, Information and Telecommunications Technologies at the United Nations Global Service Centre. For its forty-second closed session, the Office again partnered with CEOS and representatives of space agencies and partners providing a full day of demonstrations of technologies and training on tools covering identified needs.



Participants of the eighth IAA Planetary Defence Conference in Vienna  
Credit: Max Alexander

## The International Academy of Astronautics Planetary Defence Conference, 3–7 April 2023, Vienna

Planetary defence, the activity of defending the planet Earth from asteroids and comets, constitutes a challenge combining the knowledge of astronomers, the ingenuity of engineers and global cooperative efforts to pull resources together in the case of an asteroid impact threat.

The eighth Planetary Defence Conference (PDC) of the International Academy of Astronautics (IAA) organized with the support of UNOOSA, ESA and the Geosciences Commission of the Austrian Academy of Sciences brought together world experts to discuss human knowledge about potentially hazardous

asteroids and comets and possible defensive action in the event of a collision course with Earth.

The highlight of the 2023 PDC was the hypothetical asteroid impact threat exercise, which for the first time examined the possibility of a large asteroid on a collision course with Earth. Deflection of the hypothetical threat was based on an asteroid estimated to measure between 220 to 660 metres in diameter at discovery, with a potential impact in several African countries.

As the key biennial global conference in this area since 2009, the 2023 IAA PDC examined the topics of near-Earth object discovery and characterization, planetary defence missions, asteroid deflection techniques, public communications and media relations, disaster preparedness, and space policy and legal implications.



# UNITED NATIONS REGISTER OF OBJECTS LAUNCHED INTO OUTER SPACE

The transformative power of space assets keeps driving new and novel space missions and new actors entering the space sector. The increased number of launch services and the number of functional objects being deployed into space is one metric to measure this and determine ownership and liability for space objects. Last year, the international space community broke the record both for annual rocket launches, satellites reaching orbit and objects registered with the United Nations voluntarily under General

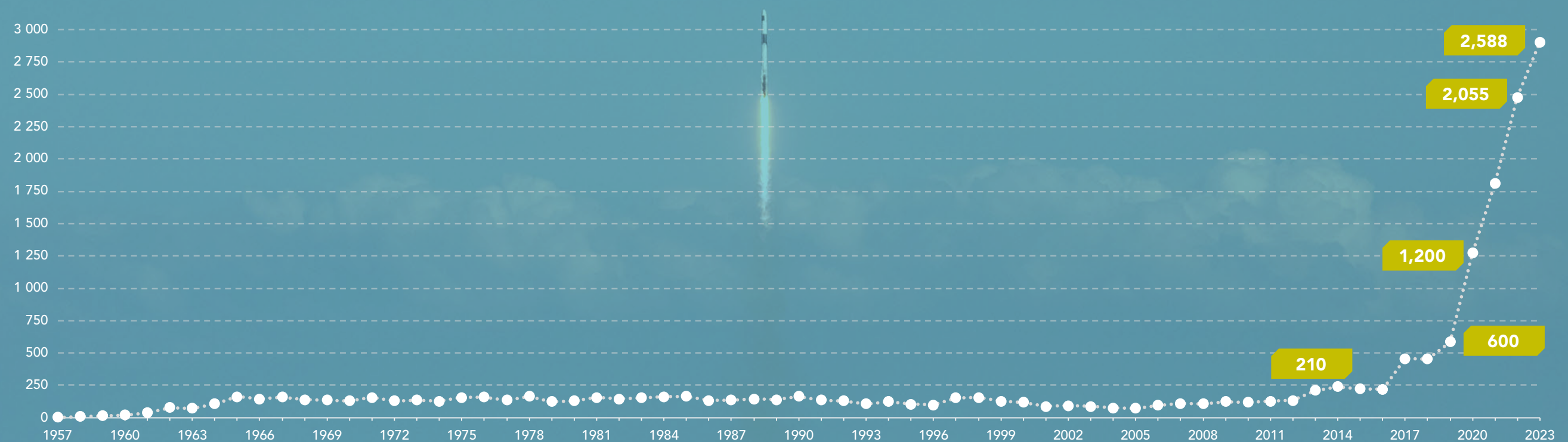
Assembly resolution 1721B (XVI) or as a treaty obligation under the 1975 Convention on Registration of Objects Launched into Outer Space.

In 2023, 33 Member States and one international intergovernmental organization submitted registrations on 2,588 satellites, a 25 per cent increase in registrations on 2022 (2,055). Registrations of mega-constellation satellites continued to be the driving force behind this growth and the trend is expected

to amplify in the years to come. First-time registrations were received from Djibouti and Uganda. The UNOOSA registration project also saw over 50 Member States nominate new or update national focal points for registration.

From 1957 to 2012, the number of satellites launched into outer space remained remarkably consistent, at approximately 150 each year. This includes the eras of human flight to Earth orbit and to the Moon,

the development of global communication satellite systems and the construction of ISS. However, a decade ago, the number of satellites launched into orbit began to increase at an exponential rate, from 210 (2013), to 600 (2019), to 1,200 (2020) and, most recently, to 2,588 in 2023.





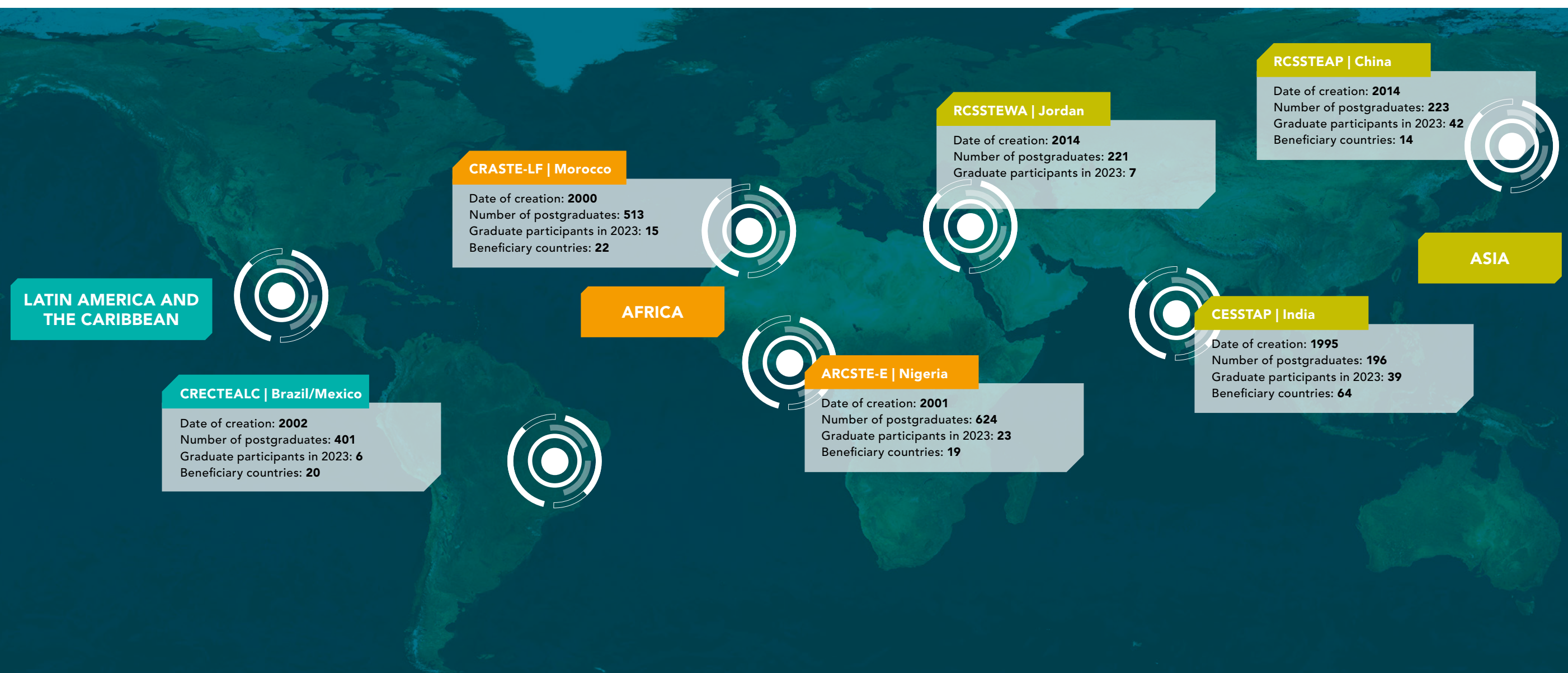
# REGIONAL CENTRES FOR SPACE SCIENCE AND TECHNOLOGY EDUCATION (AFFILIATED TO THE UNITED NATIONS)

The United Nations-affiliated Regional Centres for Space Science and Technology Education are instrumental in providing educational, research and practical application opportunities in space science and technology. These Centres aim to enhance the expertise and capabilities of university educators,

researchers and scientists in practical, tailored and theoretical aspects of space science and technology. This is achieved through comprehensive training involving theory, research, fieldwork and pilot projects, all focused on leveraging space technology for sustainable development in each country.

Delivering quality education requires a common standard of teaching. Education curricula developed by the Office focus on all major fields of space applications, including satellite meteorology, climate, satellite communications, space and atmospheric science, remote sensing, as well as GIS and GNSS.

These materials are open source, free of charge and available to other educational institutions.



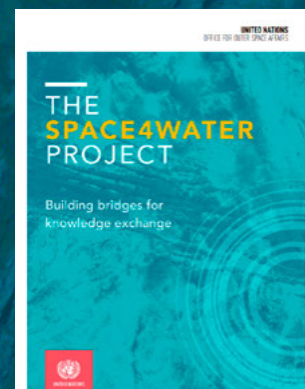


# PUBLICATIONS



UNOOSA 2022  
Annual Report

[Online version](#)



The Space4Water Project:  
Building bridges for  
knowledge exchange

[Online version](#)



Sonification: A tool for  
research, outreach and  
inclusion in space sciences

[Online version](#)



The "Space2030" Agenda:  
Space as a Driver of  
Sustainable Development

[Online version](#)



Contribution to the  
"Space2030" Agenda:  
EU Space – Supporting a  
World of 8 Billion People

[Online version](#)



Stakeholder Study on  
the Registration of Objects  
Launched into Outer  
Space

[Online version](#)



Near-Earth Objects  
and Planetary Defence

[Online version](#)







# Chapter 4.

## **COPUOS in 2023**

- COMMITTEE ON THE PEACEFUL USES OF OUTER SPACE
- STATEMENTS BY THE CHAIRS
- 2024 AND BEYOND



# COMMITTEE ON THE PEACEFUL USES OF OUTER SPACE

COPUOS welcomed Guatemala and Uzbekistan as the newest members of the Committee as well as two new international organizations with observer status with the Committee, taking the overall membership of COPUOS to 102 Member States and 51 permanent observers (international and regional organizations or international non-governmental organizations).

## Scientific and Technical Subcommittee

Reinforcing the commitment of States to space sustainability, the **Working Group on the Long-term Sustainability of Outer Space Activities** continued to address three core areas: (a) identifying and studying challenges and considering possible new guidelines for the long-term sustainability of outer space activities; (b) sharing experiences, practices and lessons learned from voluntary national implementation of the adopted Guidelines; and (c) raising awareness and building capacity, in particular among emerging space nations and developing countries.

The **Working Group on the Use of Nuclear Power Sources** in outer space agreed on a new, five-year workplan 2024–2028, to further work on the safety aspects of nuclear power sources in space applications, particularly nuclear fission reactors and new types and uses of radioisotope power systems.

## Legal Subcommittee

The **Working Group on the Status and Application of the five United Nations treaties** on outer space agreed to continue its work on the questionnaires and advanced its work on recommendations to be addressed to States of registry to support the enhancement of registration practices.

The **Working Group on the Definition and Delimitation of Outer Space Activities**, which convenes on a biennial basis, continued to consider matters relating to the definition and delimitation of outer space.

The **Working Group on Legal Aspects of Space Resource Activities** reached consensus on the international conference on space resources to take place in 2024.

The Space and Global Health Network, established by the resolution on space and global health (A/RES/77/120), which was developed under the purview of COPUOS by the **Working Group on Space and Global Health**, started its work on greater coordination and cooperation among all relevant actors in key space activities relevant to global health, fostering the exchange of ideas and data between the space and health sectors.

COPUOS recalled significant advancements in space endeavours in 2023 – from getting the first images of early space from the James Webb Space Telescope to the first changing of the orbit of an asteroid and the continuous robotic exploration of the Moon and Mars. This past year serves as a testament to humankind's desire to reach further. The year 2023 also marked the fifty-fifth anniversary of the first United Nations Conference on the Exploration and Peaceful Uses of Outer Space (UNISPACE).



# STATEMENTS BY THE CHAIRS

## Statement by the Chair of the Committee on the Peaceful Uses of Outer Space



**Omran Sharaf**

Assistant Minister of Foreign Affairs and International Cooperation for Advanced Science and Technology  
United Arab Emirates

Chair of the Committee on the Peaceful Uses of Outer Space  
2022–2023

*Dear Reader,*

It has been in many ways a remarkable two years not only for COPOUS but for the world which we spend so much of our time trying to make a better home for us all. The spectre of geopolitics has never been far from our deliberations and has provided us with a unique range of challenges, but also the opportunity to demonstrate how our focus on a higher purpose can transcend the conflicts and even help to mitigate catastrophes.

On a macro level, the maintenance of cordial and constructive relationships within the Committee, and continuing our shared focus on progress and achievement, given the complexities of our world over the past two years, has been at times frustratingly difficult but was ultimately a highly rewarding task. It has undoubtedly been a huge benefit to be able to approach some of the more difficult discussions from a position of neutrality and at times that has been critical to us in forging consensus. Ultimately, our work together must necessarily remain cooperative and collaborative, regardless of the short-term challenges we face.

Our efforts in streamlining the agendas of the Scientific and Technical Subcommittee and Legal Subcommittee have resulted in an increase in the performance and efficiency of both. The introduction of improved organizational arrangements and working methods have also contributed greatly to this. Furthermore, I am pleased that COPUOS was also able to take concrete steps towards streamlining its activities by merging several of its agenda items. This decision improved its efficiency in a way that allows COPUOS to continue to serve Member States and maximize opportunities for multilateral dialogue.

Finally, I would like to extend my heartfelt thanks to my many colleagues at COPOUS and note that they have made my task of chairing the Committee over the past two years truly a joy.



# STATEMENTS BY THE CHAIRS

## Statement by the Chair of the Scientific and Technical Subcommittee of COPUOS



**Dr. Juan Francisco Facetti**

Ambassador and Permanent Representative  
of the Republic of Paraguay

Chair of the Scientific and Technical Subcommittee  
2022–2023

*Dear Reader,*

Serving as the Chair of the Scientific and Technical Subcommittee (STSC) of the Committee on the Peaceful Uses of Outer Space (COPUOS) at the United Nations Office for Outer Space Affairs (UNOOSA) from 2022 to 2023 has been a profound honour. As a scientist, I have always worked on issues of biodiversity conservation, water resources management and pollution, so I have had the pleasure of supporting the efforts of the different working groups of this Subcommittee, which has in turn, allowed me to see the enormous advances of space applications in the study of environmental and climate variables as well as in the study of space weather, space health and their applications towards achieving the SDGs.

Throughout this period, the collective efforts of the scientific and innovation community have significantly advanced the peaceful use and exploration of outer space, marking several key achievements. This time as Chair has also allowed me to work with colleagues, especially from the Global South, in disseminating knowledge about the benefits of space applications as well as the importance of participating in STSC.

We achieved consensus on the STSC Report during its sixtieth session, a testament of the science and technology community to our commitment to collaborative dialogue and mutual understanding. Our successful advocacy for General Assembly resolution 78/72 on “International cooperation in the peaceful uses of outer space,” adopted in December 2023, underscores our role in fostering global partnerships for space exploration and utilization. In this regard, I would like to highlight the support and close cooperation between the colleagues of the Diplomatic Corps in Vienna and our colleagues at United Nations Headquarters in New York that allowed us to reach consensus and approval at the General Assembly of the text proposed by this presidency.

Our contributions to the Ministerial Declaration of the High-level Political Forum on Sustainable Development in 2022, and the SDG Summit in 2023, highlight the relevance of COPOUS in integrating space technology with global development goals. By promoting the Committee’s work among Member States, we have ensured greater participation and awareness of the potential of space technologies in addressing Earth’s most pressing challenges.

I was pleased to participate in various international forums, such as the United Nations/Spain/IAU Conference on Dark and Quiet Skies, the UN-Space session in Brindisi, Italy, and the 2023 United Nations/Austria Symposium “Space for climate action: space applications and technologies for sustainability on Earth” that took place in Graz, Austria. By working together with the Instituto Astrofísico de Canarias on a proposal for a training course for young diplomats on science and technology space diplomacy, I am proud we have been able to further foster a comprehensive approach to space governance for the benefit of future generations.

Looking ahead, my aspiration for COPUOS and the broader space community is to continue expanding our reach and impact. By embracing the spirit of cooperation, innovation and inclusivity, we can ensure that the benefits of space exploration and technology are shared by all, paving the way for a future where space continues to inspire and benefit humanity on a global scale.



# STATEMENTS BY THE CHAIRS

## Statement by the Chair of the Legal Subcommittee of COPUOS



**Nomfuneko Majaja**

Chief Director, Department of Trade and Industry  
South Africa

Chair of the Legal Subcommittee  
2022–2023

*Dear Reader,*

It has been a great honour to serve the international space community from 2022 to 2023. I have been guided by the lens of history and previous chairs and proponents of the space legal framework, which was led by Professor Manfred Lachs of Poland.

I am equally thrilled to have represented the African continent, which is progressively moving towards adopting space activities in their individual countries and collectively tackling the socioeconomic challenges facing them.

The Legal Subcommittee of COPUOS has always had a special and an important task in developing space law and space governance, addressing critical areas of concern, and promoting the implementation of regulatory frameworks to ensure orderly, peaceful and responsible operations in outer space. The Outer Space Treaty, together with the other core treaties and principles, form the legal order for today's space activities. Despite this great fact, the speed of new technological advancements will require the Legal Subcommittee to step up and meet the challenge; I have full confidence in the combined expertise of the international community to do this.

During my tenure, it was extremely impressive to see the establishment of the Working Group on Legal Aspects of Space Resource Activities, and support intersessional work on space resources conferences to be held in Luxembourg and Vienna in 2024

It was also illuminating for me to lead and participate in the symposiums organized by the International Institute of Space Law and the European Centre for Space Law on the topics of legal models on the potential activities in the exploration, exploitation and utilization of space resources and the legal aspects of dark and quiet skies, respectively, which brought together governments, academia and industry, and non-governmental views. These key topics reaffirm how COPUOS remains at the forefront of international space law, and the growing need for nations to coordinate and strongly commit to legislative efforts as well as non-binding guidelines and mechanisms. These are required to improve global collaboration in space activities to the advantage of all nations, especially developing nations.

Looking towards the future, I will work hard to increase the membership of COPUOS and believe the work of the Subcommittee will be expanded. I would invite all African States that are not yet members to join COPUOS. Membership will sensitize you to how other nations are using space policy,

science and technology for the benefit of their respective citizens, to achieve economic prosperity and sustainable development, and mitigate climate change.

The importance of collaboration with other relevant United Nations entities, such as ITU and ICAO, is critical and cannot be overemphasized. There are various overlapping matters such as the use of geostationary orbit and the definition and the delimitation of outer space to mention but a few. It is my firm conviction, however, that Member States will come together on substance, fast track the work of COPUOS and reaffirm its mandate.

Capacity-building in space law and policy will remain one of my major interests and priorities for Africa since many countries are establishing their space agencies and are getting involved in space activities. The efforts of the Legal Subcommittee and UNOOSA to promote capacity-building in space law and policy is warmly welcomed. That said, there is still more to do to ensure all countries, particularly developing countries, can benefit from space.



# 2024 AND BEYOND

**A VISION AND STRATEGY FOR UNOOSA, 2024–2030**

UNOOSA will launch a strategy in 2024, which will build on our core niches, deliver impact and demonstrate our relevance. Our strategy aims to drive global awareness of space for sustainable development.

**SPACE SUSTAINABILITY**

UNOOSA will advocate for the adoption and implementation of the global governance of outer space, as developed by COPUOS and the landmark Guidelines for the Long-term Sustainability of Outer Space Activities.

**UNITED NATIONS SPACE BRIDGE**

UNOOSA will convene round tables with the right expertise, ask the right questions and scale the existing use of space applications to address global challenges.

**EXPANDING COPUOS MEMBERSHIP**

UNOOSA will leverage our networks and engage Member States to increase the membership of COPUOS, promote the safe and sustainable use of space and ensure all countries have a voice in the negotiation of international space law. This is critical as the General Assembly approves each annual omnibus resolution.

**REINVIGORATING THE REGIONAL CENTRES**

UNOOSA, along with the regional centres, will be updating the free-to-access curricula, embedding the activities of the centres within the strategy of the Office and establishing a regular dialogue and cooperation mechanism between the networks.

**BREAKING DOWN SILOS**

It has been said that space has a public relations problem and that the space community speaks too much to itself. We will be strengthening our communications related to the relevance of space to ensure that policymakers understand the benefits of space.

**PACT FOR THE FUTURE**

In the lead-up to the Summit of the Future in 2024, UNOOSA and Portugal will convene stakeholders to identify global consensus on the areas contained within the Secretary-General’s policy brief. This will inform negotiations on the Summit’s outcome document, the Pact for the Future.

**SPACE LAW, SCIENCE AND TECHNOLOGY**

UNOOSA will leverage the resources of partners to increase our capacity-building initiatives, to ensure that all countries can benefit from space law, data, services and technology for their own socioeconomic development.





# Chapter 5.

## **UNOOSA: funding, staffing and communication**

- **FINANCIAL RESOURCES OVERVIEW**
- **STAFFING AND FUNDING**
- **EXTRABUDGETARY CONTRIBUTIONS**
- **COMMUNICATIONS**

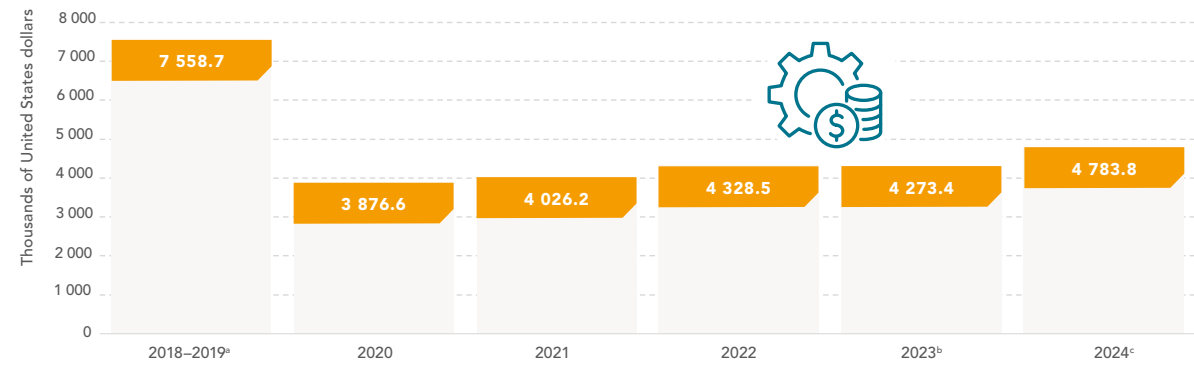


This section presents data on the financial and human resources of UNOOSA covering the period through 31 December 2023. The Office acknowledges and wishes to express its gratitude to all Member States that continuously support its activities, whether through an in-kind or a cash contribution. The data reflected in this section represent cash contributions only.

The full list of in-kind contributors for 2023, can be found within the [statement by Aarti Holla-Maini](#), Director of UNOOSA, at the sixty-first session of the Scientific and Technical Subcommittee of the Committee on the Peaceful Uses of Outer Space, Vienna, 29 January–9 February 2024.

FINANCIAL RESOURCES OVERVIEW

Regular budget overview since 2018



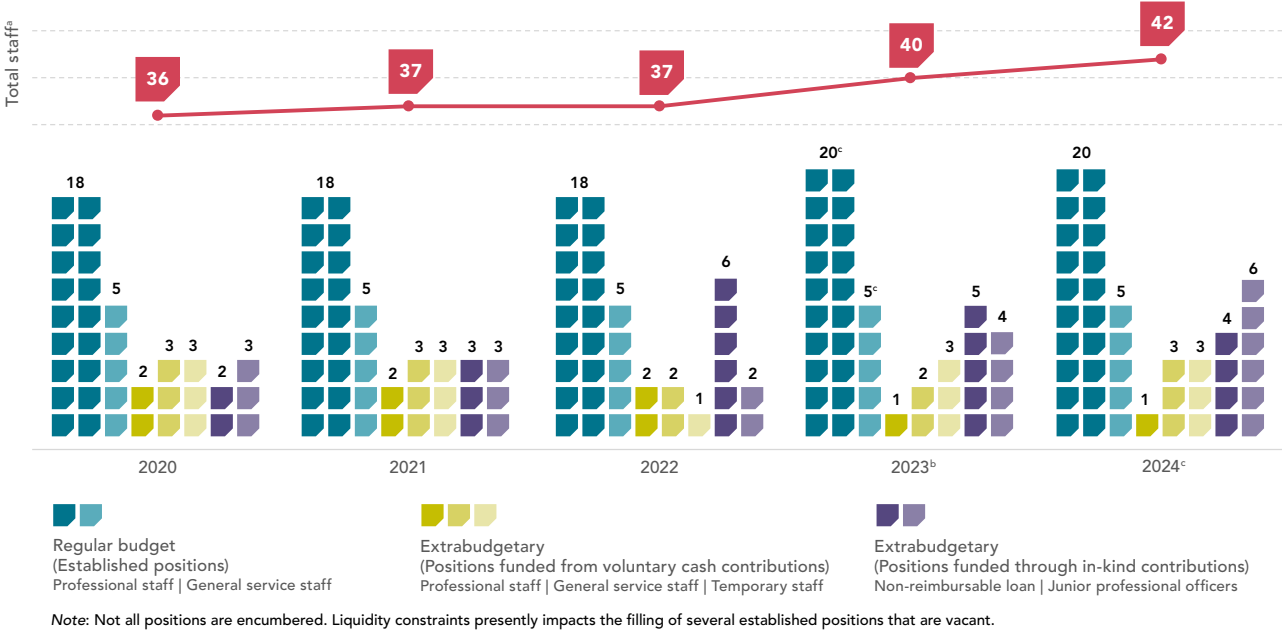
<sup>a</sup> Figure for 2018–2019 reflects a biennial budget.  
<sup>b</sup> Expenditure, excluding year-end adjustments.  
<sup>c</sup> As approved by the General Assembly in December 2023. Final appropriations may be impacted by liquidity constraints.

	2018–2019 <sup>a</sup>	2020	2021	2022	2023 <sup>b</sup>	2024 <sup>c</sup>
Budget in thousands of United States dollars	7 558.7	3 876.6	4 026.2	4 328.5	4 273.4	4 783.8

<sup>a</sup> Figure for 2018–2019 reflects a biennial budget.  
<sup>b</sup> Expenditure, excluding year-end adjustments.  
<sup>c</sup> As approved by the General Assembly in December 2023. Final appropriations may be impacted by liquidity constraints.

STAFFING AND FUNDING

Breakdown of UNOOSA staffing levels since 2020



Note: Not all positions are encumbered. Liquidity constraints presently impacts the filling of several established positions that are vacant.  
<sup>a</sup> Excludes consultants, contractors and interns.  
<sup>b</sup> As at 31 December 2023.  
<sup>c</sup> As at 30 January 2024.

Funding source	2020	2021	2022	2023 <sup>a</sup>	2024 <sup>b</sup>
Regular budget: Established positions	18 Professional staff 5 General service staff	18 Professional staff 5 General service staff	18 Professional staff 5 General service staff	20 Professional staff 5 General service staff	20 Professional staff 5 General service staff
Extrabudgetary: Positions funded from voluntary cash contributions	2 Professional staff 3 General service staff 3 Temporary staff	2 Professional staff 3 General service staff 3 Temporary staff	2 Professional staff 2 General service staff 1 Temporary staff	1 Professional staff 2 General service staff 3 Temporary staff	1 Professional staff 3 General service staff 3 Temporary staff
Extrabudgetary: Positions funded through in-kind contributions	2 Non-reimbursable loan 3 Junior professional officers	3 Non-reimbursable loan 3 Junior professional officers	6 Non-reimbursable loan 2 Junior professional officers	5 Non-reimbursable loan 4 Junior professional officers	4 Non-reimbursable loan 6 Junior professional officers
Total staff <sup>c</sup>	36	37	37	40	42

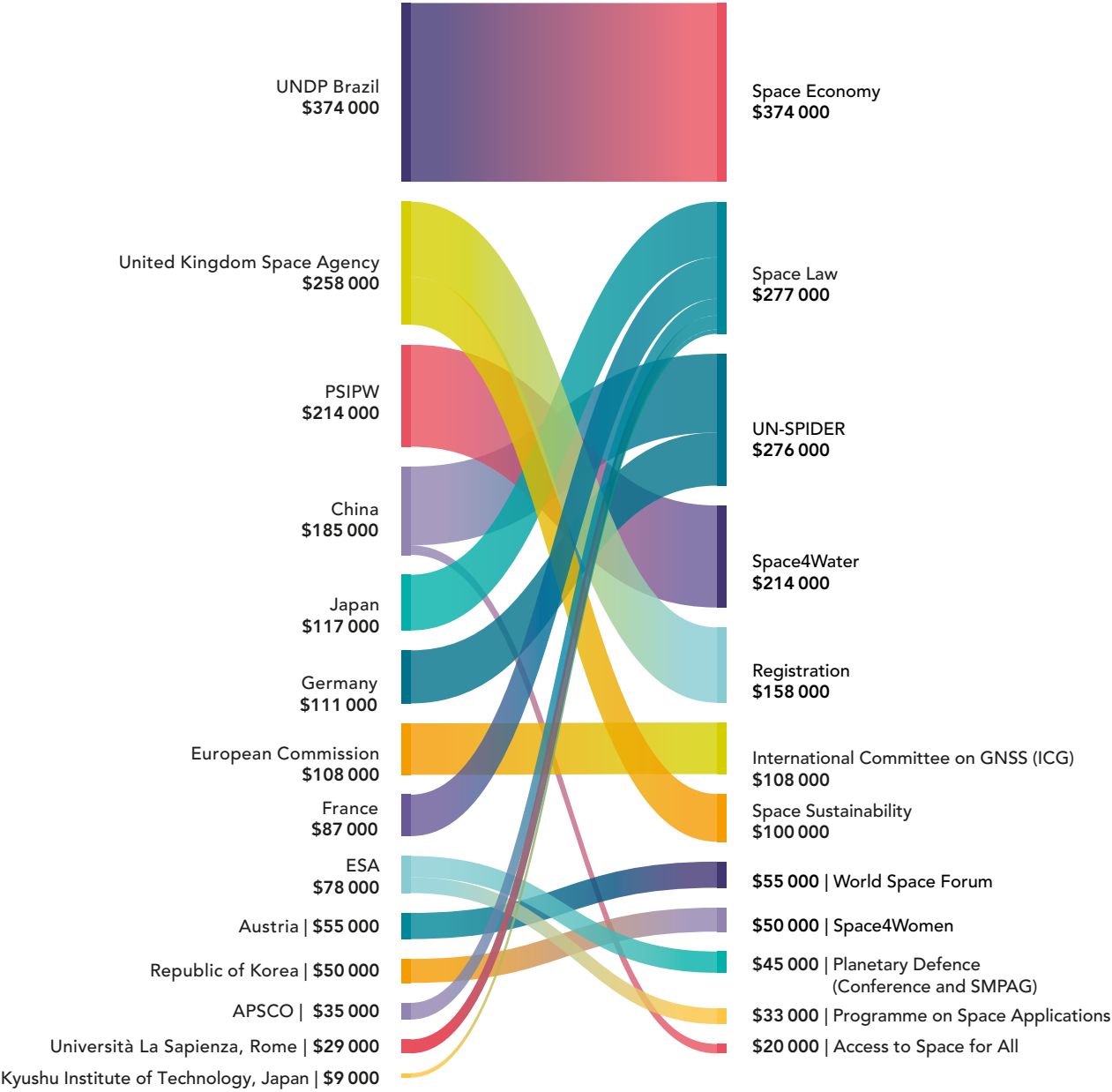
Note: Not all positions are encumbered. Liquidity constraints presently impact the filling of several established positions that are vacant.

<sup>a</sup> As at 31 December 2023.  
<sup>b</sup> As at 30 January 2024.  
<sup>c</sup> Excludes consultants, contractors and interns.



EXTRABUDGETARY CONTRIBUTIONS

UNOOSA extrabudgetary donors, 2023



Note: Figures rounded to the nearest thousand.

UNOOSA would like to thank the following donors for their contributions:



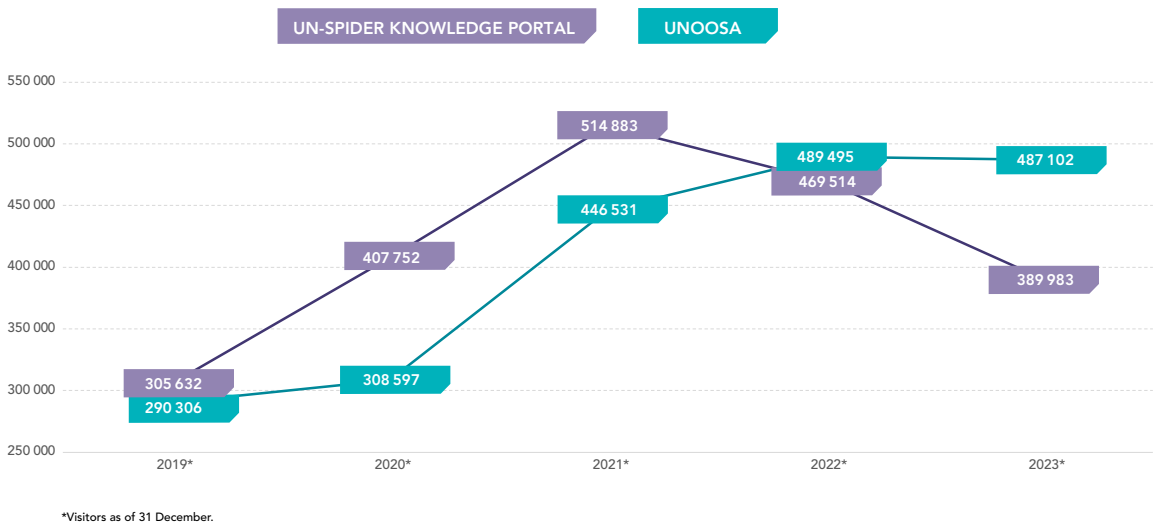
	World Space Forum	Programme on Space Applications	International Committee on GNSS (ICG)	Access to Space for All	UN-SPIDER	Space Law	Space Sustainability	Space4Water	Registration	Space Economy	Space4Women	Planetary Defence (Conference and SMPAG)	Totals
UNDP Brazil										\$374 000			\$374 000
United Kingdom Space Agency							\$100 000		\$158 000				\$258 000
PSIPW								\$214 000					\$214 000
China				\$20 000	\$165 000								\$185 000
Japan						\$117 000							\$117 000
Germany					\$111 000								\$111 000
European Commission			\$108 000										\$108 000
France						\$87 000							\$87 000
ESA		\$33 000										\$45 000	\$78 000
Austria	\$55 000												\$55 000
Republic of Korea											\$50 000		\$50 000
APSCO						\$35 000							\$35 000
Università La Sapienza, Rome						\$29 000							\$29 000
Kyushu Institute of Technology, Japan						\$9 000							\$9 000
Totals	\$55 000	\$33 000	\$108 000	\$20 000	\$276 000	\$277 000	\$100 000	\$214 000	\$158 000	\$374 000	\$50 000	\$45 000	\$1 709 000

Note: Figures rounded to the nearest thousand.

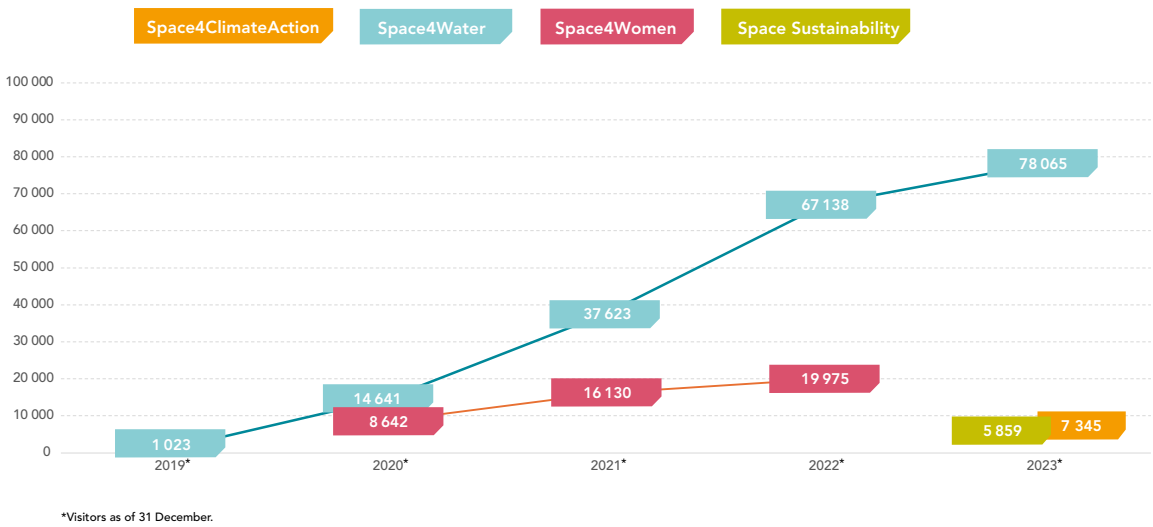


# COMMUNICATIONS

Levels of traffic on the UNOOSA and UN-SPIDER knowledge portal sites, 2019–2023



Levels of traffic on the Space4ClimateAction, Space4Water, Space4Women and Space Sustainability sites, 2019–2023



Website	Visitors as of 31 December 2019	Visitors as of 31 December 2020	Visitors as of 31 December 2021	Visitors as of 31 December 2022	Visitors as of 31 December 2023
UNOOSA	290 306	308 597	446 531	489 495	487 102
UN-SPIDER KNOWLEDGE PORTAL	305 632	407 752	514 883	469 514	389 983
Space4ClimateAction	—	—	—	—	7 345
Space4Water	1 023	14 641	37 623	67 138	78 065
Space4Women	—	8 642	16 130	19 975	—
Space Sustainability	—	—	—	—	5 859



**THE UNITED NATIONS OFFICE  
FOR OUTER SPACE AFFAIRS (UNOOSA)**

IS RESPONSIBLE FOR ADVANCING INTERNATIONAL COOPERATION IN  
THE PEACEFUL USES OF OUTER SPACE AND HELPS ALL COUNTRIES  
USE SPACE SCIENCE AND TECHNOLOGY TO ACHIEVE  
SUSTAINABLE DEVELOPMENT.



**BRINGING THE BENEFITS  
OF SPACE TO HUMANKIND**

[WWW.UNOOSA.ORG](http://WWW.UNOOSA.ORG)