



World Space Forum 2021  
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Excellencies, fellow speakers, ladies and gentlemen,

Allow me to welcome you all to the 2<sup>nd</sup> edition of the World Space Forum organized in great cooperation with our partners from the UAE.

Truly, it is my pleasure to see so many of you joining us.

I would very much have preferred seeing you all in person in the wonderful city of Dubai but 2020 has been so far dominated by a global pandemic affecting all of us, our families, our work, our travels and especially the way we communicate.

**Thankfully, we live in a world with a wide range of possibilities to connect and see each other virtually from anywhere.** Hence while COVID-19 has taken away the opportunity of interpersonal contacts, the new modus operandi allows us to reach a much broader audience.

More than 1,100 people from across the world registered for the event underlining not only a global interest in space but also the success of the 1<sup>st</sup> World Space Forum last year and of its preceding High-Level Forums, the first of which took place in 2015.

Let me underline also that 2016 and 2017 saw UAE hosting two editions of the High-Level Forum, paving the way for the WSF great success today.

**At its core, the UN promotes multilateral dialogue, cooperation and inclusiveness.**

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*“And as the gateway to space in the UN, the Office for Outer Space Affairs is uniquely positioned to bring together all relevant stakeholders.”*

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It is therefore great to see that we have with us representatives from all corners of society – governments, space agencies, private sector, academia and the third sector.

Engaging in debates with such a broad representation allows for a diversity of views and perspectives.

And this is critically important for our success in space as different stakeholders conduct different activities, pursue different goals, and policies and decisions – be it at the local, national, or international level – influence them in a variety of ways.

The World Space Forum offers an appropriate and holistic platform to look back and to look forward in space activities and international cooperation in this domain.”

And it is critical for our future to join forces along the four pillars of *space economy, space society, space accessibility and space diplomacy* as **space has indeed become a game-changer.**



Today, we use space for a great variety of activities - in our daily lives, through policy and decision making to industry and services. Space assets have transformed the way we live and study, conduct business, travel, order and deliver goods, prevent damages and loss of lives from disasters, reduce emissions or make efficient use of resources and energy. And I could continue for a few hours here.

And through sustained, reliable and timeless observation, space infrastructure has unlocked virtually limitless access to data and information about the Earth, its processes, spheres and natural wonders. At the same time, we've also progressively learned about the impact of humanity on the planet, nature and ourselves.

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*"Space is virtually everywhere."*

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But let me quantify here to make my point even stronger. The sheer volume of data we collect from space is unprecedented and with new missions, it will amount to dozens of petabytes a day.

Climate science is one of the biggest beneficiaries of our ability to monitor the Earth in almost real-time. The Essential Climate Variables developed to contribute to the characterization of Earth's climate are from a large part reliant on space assets. More than half of the 54 ECVs can only be monitored from space. Without space, we would be essentially blind to the climate emergency.

And space infrastructure goes far beyond its monitoring capabilities to actual services and applications enabling great strides in the quest for sustainable development.

In 2018, UNOOSA joined with the European Commission for a study to evaluate the impact of European space infrastructure on the SDGs. What we found was certainly not a surprise, but a great revelation of the figures behind space and SDGs.

Geolocation and Earth observation directly contribute to almost 40 percent of all 169 targets underpinning the goals. Add SatComs to the mix and I expect we are well over 50 percent.

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*"Today, the role of space is already critical and our dependence on it is, in fact, growing year by year."*

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The good news is that **stakeholders around the world are increasingly aware of these realities** and the advantages of employing space assets for a variety of purposes. **As a result, investments - be it financial, political or human resources - are rapidly growing.**

Last decade brought a major transformation in space exploration, in upstream as well as downstream.

Manufacturing and launching costs kept declining, the value of the industry increased dramatically and the number of stakeholders participating in the domain grew at an unprecedented rate.

The 2010s were also record-breaking for satellite figures with thousands finding their way into Earth orbit. And we certainly feel the impacts of this amazing progress into the 2020s.

We are yet to close the first year of a new decade but the previous record for satellites launched annually was not only broken, but it is no exaggeration to say



that it was shattered. From 580 last year to well over 1,200 so far this year.

While private efforts are now responsible for most of the growth, we are still seeing great progress in government efforts.

**Dozens of countries launched their first satellite since the beginning of the new millennium** – from 38 in the year 2000 to 83 today.

Amazing news, isn't it? It surely is but let me remind that the United Nations has 193 Member States. Clearly, **there is still a huge gap in space capabilities**. We need to rapidly act.

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*We need to use this decade to make a real change – to bring more countries into the space family.”*

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What is the world that we envision in 2030?

Well, we envision a much larger share of UN Member States with a satellite in orbit and having policies, technologies and structures in place to make the best possible use of space assets.

We envision satellites to have played an integral role in accomplishing what is pledged for in internationally agreed frameworks. In 2030, then, we envision that the 17 SDGs are successfully achieved, and we are making great progress in reverting the climate crisis.

Thanks to smart farming, agricultural productivity and efficiency are at their highest levels feeding millions who struggled only a decade ago. Water management and purification tech developed initially for space exploration greatly expand access to potable water.

Global connectivity enables millions of children to pursue education, creates new businesses and markets, and saves thousands of lives through telemedicine and tele-epidemiology.

And cities around the world use smart technology enabled by space assets for efficient use of resources and energy. Air, water and soil are not polluted to harmful levels. And their inhabitants enjoy resilience to adverse impacts of disasters.

**This is the future we want - with science and technology in and from space playing a central role.**

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*We cannot leave anyone behind – not today and definitely not tomorrow.*

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We must do everything in our power as a space community to make space benefits available to everyone, everywhere. And at UNOOSA we are doing what we can to bring a positive change.

**We stand at the center of space affairs in the United Nations.** In our role as an enabler, we have sought pathways to help UN Member States progress in space exploration, science and technology, as well as policy and law.

**Our capacity-building efforts have already reached more than 24-thousand people through over 400 activities.**

And in recent years, we came to realize that for the success of these efforts we must be innovative.

The traditional approaches are no longer sufficient to address the needs and requirements of modern capacity-building.



Especially, we identified the growing demand for hands-on experience.

Practical training and opportunities represent a transformative approach to learning. As we say, you cannot learn to ride a bike by reading a book, you must ride a bike!

And as UNOOSA does not possess space capabilities, at least not yet, we have relied on the great network established in the decades of our existence.

We started to develop partnerships with the hands-on experience element at their core. Different workstreams were developed and as we progressed, a decision was made to consolidate them under a single initiative - **Access to Space for All**.

**Access to Space for All is the definition of what we call triangular cooperation.**

UNOOSA utilizes its global reach to build partnerships with established space stakeholders to support emerging and non-spacefaring countries.

Through such efforts, we ensure that access to space and the benefits it enables will be made available to all.

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*Bridging the space divide naturally translates into a better future for individuals, teams, and ultimately for countries.*

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Announced only in 2018 at the High-Level Forum in Bonn, the initiative now covers the full spectrum of accessing space.

From ground experiments including micro and hypergravity, through manufacturing and launch of satellites, to operations in an orbital mission.

Access to the International Space Station and the China Space Station for educational and research purposes are also part of this unique initiative.

**The support we receive from our partners is invaluable and it fits perfectly into the broader agenda of the UN with the ultimate goal of making the planet a better place to live.**

Let me describe shortly joint ventures we currently have at hand so you can get a better picture of what's possible - for those who might apply, but also for those who might wish to partner with the UN and contribute to expanding access to space benefits.

Our agreement **with ZARM and DLR** allows us to offer students the opportunity to learn and study microgravity science by performing experiments using the Bremen Drop Tower, in Germany. So far, six rounds have been completed benefiting students from all over the world.

Our partnership **with ESA** focuses on the opposite end of the gravity spectrum. Through the Large Diameter Centrifuge at ESTEC in the Netherlands, students and teams will be able to conduct hypergravity experiments. The first selected team was supposed to conduct its experiment in 2020, but we experienced a short delay due to the pandemic.

**China** has also been a strong partner for UNOOSA. We will be capitalizing on its technological and innovative skills and experiences. In the near future, scientists will have an opportunity to conduct their own experiments onboard China's Space Station. Recently we selected nine experiments under development to fly as soon as feasible on the CSS.



And we are also capitalizing on the contributions, technologies and expertise available in the commercial sector.

In cooperation **with Airbus**, we provide a free slot for a 3U-sized class payload getting full Bartolomeo All-in-One Space Mission Service and a one-year free mission operation. This partnership also covers capacity-building on Earth Observation data utilization, supporting proof-of-concept demonstrations and crisis response.

Partnering **with the Sierra Nevada Corporation** also represents a unique opportunity. We are working towards a Dream Chaser Mission to conduct research that cannot be done on Earth. This will be achieved by providing the Member States with the opportunity to develop and fly microgravity payloads for an extended period in orbit.

And **with the Avio company**, UNOOSA is providing institutions with an opportunity to apply to use satellite slots for 1U CubeSat or aggregates using a Vega-C rocket - all free of charge.

In this regard, let me please remind you all that an Announcement of Opportunity was recently released with the deadline in early April 2021.

I encourage everyone, especially individuals and institutions from developing countries, to visit our website for more information about the mission.

And what can I say about our flagship programme under Access to Space for All - the KiboCUBE programme?

KiboCUBE exemplifies how far we can get through cooperative ventures.

The story of this outstanding effort began in 2015 with first discussions **with our great colleagues from Japan, in particular JAXA**.

Soon enough, the programme was launched as a capacity-building activity to offer educational and research institutions from developing countries the opportunity to deploy CubeSats from the Kibo module on the ISS.

In the five years since, KiboCUBE broke records and helped two UN Member States, particularly Kenya and Guatemala, to enter the list of spacefaring nations.

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*KiboCUBE very well represents what the work of UNOOSA is all about – bringing the benefits of space to humankind through facilitating access to space.*

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As the winners of the 1<sup>st</sup> and 2<sup>nd</sup> rounds, teams from these two countries supported by UNOOSA and JAXA, not only achieved great success for their institution but made a big step forward for their nation. And these two satellites are also the first and only ever launched under the UN auspices.

Witnessing the full cycle of these CubeSats from the selection, through assembly and handover, to launch and deployment was a great journey.

I must admit that seeing the UN flag on the ISS next to the flags of these countries and realizing that just a few days separate the CubeSats from the vacuum of space, was truly something special and one of the proudest moments of my career.

My immediate thoughts were - we made it, together.



It was a new kind of experience for me to go through and I am glad to have been part of this journey. This year we closed the 5<sup>th</sup> round of applications and we are already looking forward to seeing more satellites deployed from the Kibo module.

And let me take the opportunity to invite you all to an event we are organizing with JAXA and the Permanent Mission of Japan tomorrow at 8:30 CET. You can expect some exciting news and you are all most welcome to attend.

And we stand ready to support all countries in their space endeavours.

**Access to Space for All represents a unique and transformative tool for executing the global agendas.** Not only we create interesting opportunities but we address multiple SDGs simultaneously.

The basis of the initiative contributes to several goals - "Quality Education", "Decent Work and Economic Growth", "Industry, Innovation and Infrastructure", "Reduced Inequalities" and "Partnerships for the Goals".

And additionally, all the applications must envision their contribution to at least one Goal, making this list even longer through specific opportunities.

UNOOSA recognizes the difficulty of creating such complex applications, and also the challenge of communicating it properly to other stakeholders. In response, we organized a series of Webinars over the past few months.

Improving the quality of applications and the ability to raise awareness about their project and help in considering relevant space law and regulations - those were the main goals.

And in the series, we also looked at the integration of another frontier tech, such as AI into space.

**In the years to come, we are looking forward to continuing the development of the Access to Space for All.**

New partnerships, especially in space exploration, will inspire, educate, create new opportunities for participation and deliver benefits to society as a means to enhance global cooperation.

Through the Initiative, UNOOSA strives to make space exploration inclusive, helping emerging and non-spacefaring nations develop capacity and take part in exploration related activities.

In this regard, I am looking forward to the outcomes of the discussions on Space Exploration taking place later today.

Overall, the long history of productive multilateral collaboration through the UN in the space sector is a great example of what the international community can achieve with robust institutional support, political will and a common goal.

The real-life contribution space is making to our daily lives is undeniable and it is in the best interest of all to expand opportunities to enable access to space.

I am proud of the progress, and honoured and thankful for the support UNOOSA has received from its partners. I hope I was able to shed more light on the importance of this initiative and on the results we can achieve when we work as a team.

**Let me therefore encourage and plead for additional support** of other space stakeholders with capabilities which can fit into the overall direction of our capacity-building efforts.



**Be the source of social responsibility and not only of inspiration but eventually of a positive change.**

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*Access to Space for All makes sense –  
for you, for us, for the UN, and ultimately  
for the world.  
Because **when we think about the future,  
we must think about space.***

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And let us not forget. Building capacity, launching new satellites and attracting new stakeholders to the sector is only part of the success.

We must keep reminding ourselves that **everything we do in space must be done responsibly.** Near-Earth space is a limited resource. Actions of one stakeholder inevitably impact everyone.

The future in space is promising and the list of things we can achieve through space is almost infinite. But **to enjoy these benefits, a safe, secure and sustainable space environment is a must.**

As we are entering an era of intensification, diversification, and democratization in this industry, new challenges arise. The unprecedented growth in the number and diversity of stakeholders represents opportunities, but also risks.

**In many industries, the hunt for short-term profits has led to the destruction of habitats, societies, trust but also impeded the ability of stakeholders themselves to react to major disruptions.**

**The space sector must be different. A true stakeholder space economy must be born.**

Where the long-term preservation and resilience of companies and embedding a company in society go hand in hand.

The bond between governments and society, and especially the private sector must be strong - a bond where long-term prosperity does not collide with sustainability.

Such economic model means more than just wealth. **It means that we can be successful today but also thrive tomorrow.**

We, as the space community, are jointly responsible for our conduct in the ultimate frontier. Let us all play by the book of rules and act in a manner that will sustain this unique environment for the decades to come.

This is why avenues such as the World Space Forum are so important. **Only if we offer appropriate platforms for all relevant stakeholders to raise their voices, seek solutions, express their ideas and discuss on best steps to be taken, we can make the most of what space offers.**

And if we all focus on the four pillars also outside of the WSF, we will succeed in transforming the world from space.

I do hope that you enjoy the discussions through these two days and remember a quote from the mastermind Albert Einstein:

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*“Nothing truly valuable can be achieved  
except by the unselfish cooperation of  
many individuals.”*

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