The National Museum of Emerging Science and Innovation
Miraikan • Tokyo • Japan

A Wrap-Up of the 6th Summit for Space Sustainability

11-12 July 2024

CO-HOSTED BY

SECURE WORLD FOUNDATION

内閣府 Cabinet Office

About the Secure World Foundation

The Secure World Foundation strives to be a trusted and objective source of leadership and information on space security, sustainability, and the use of space for the benefit of Earth. The Foundation engages with the space and other relevant communities to support steps that encourage the long-term sustainability of outer space and the effective use of space to benefit humanity. It works through three primary methods. The Foundation generates research and analysis for decision-makers to promote creation of sound policy and raise awareness of key issues that may threaten the security, sustainability and utility of outer space. The Foundation convenes timely public and private meetings with stakeholders on key issues to encourage discussion and constructive dialogue for next steps in support of its mission. And, when viable solutions or next steps become apparent, the Foundation formulates and disseminates policy positions that are aligned with its vision and mission in order to move them from idea to implementation.

About the National Space Policy Secretariat at the Cabinet Office of the Japanese Government

The National Space Policy Secretariat at the Cabinet office of the Japanese Government, co-host of the 6th Summit for Space Sustainability, coordinates and develops space policies, focusing on space exploitation and the enhancement of national and international space capabilities. Guided by Japan's Basic Space Law, the Secretariat works closely with the Strategic Headquarters for National Space Policy to advance the development, maintenance, and operation of key space systems, including the Quasi-Zenith Satellite System. Through these coordinated efforts, the Secretariat aims to strengthen Japan's role in space exploration and technology development, supporting various applications that benefit society and national security.

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A Wrap-Up of the 6th Summit for Space Sustainability

The 6th Summit for Space Sustainability, held July 11-12, 2024, in Tokyo, brought together leaders, experts, and policymakers to address the challenges facing the space industry.

Hosted in a hybrid format, the event highlighted the urgency of fostering responsible space behaviors and tackled issues such as space debris mitigation and harmonizing international regulations. With over 650 attendees from space agencies, commercial entities, academic institutions, and governments, the Summit provided a platform for dialogue and collaboration. Participants explored the balance between advancing technology and protecting the space environment, focusing particularly on orbital debris and space traffic management.

Opening with virtual remarks from Japan's Minister of State for Space Policy, TAKAICHI Sanae, and featuring speakers like Paul BATE from the UK Space Agency and Richard DALBELLO from the U.S. Office of Space Commerce, discussions ranged from enhancing global access to space to defining norms for responsible behavior.

A major focus was on international cooperation in addressing space debris. Several panels emphasized the need for enhanced remediation efforts, legislative support, and new technologies. The space community's responsibility to prevent further environmental damage was a recurring theme.

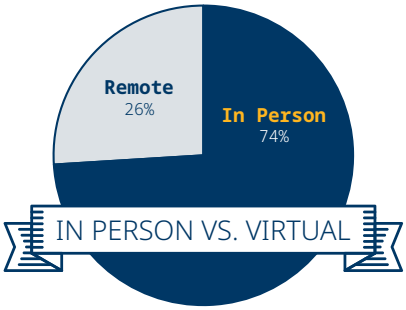
The Summit also explored partnerships between the commercial sector and governments. With outer space becoming increasingly commercialized, cross-sector cooperation is essential to maintaining a sustainable, peaceful environment.

From geopolitical considerations to the rise of space ventures in the Asia-Pacific region, the Summit captured the complexity of space sustainability. Attendees acknowledged the delicate balance required to support industry growth while ensuring the long-term viability of space as a shared domain.

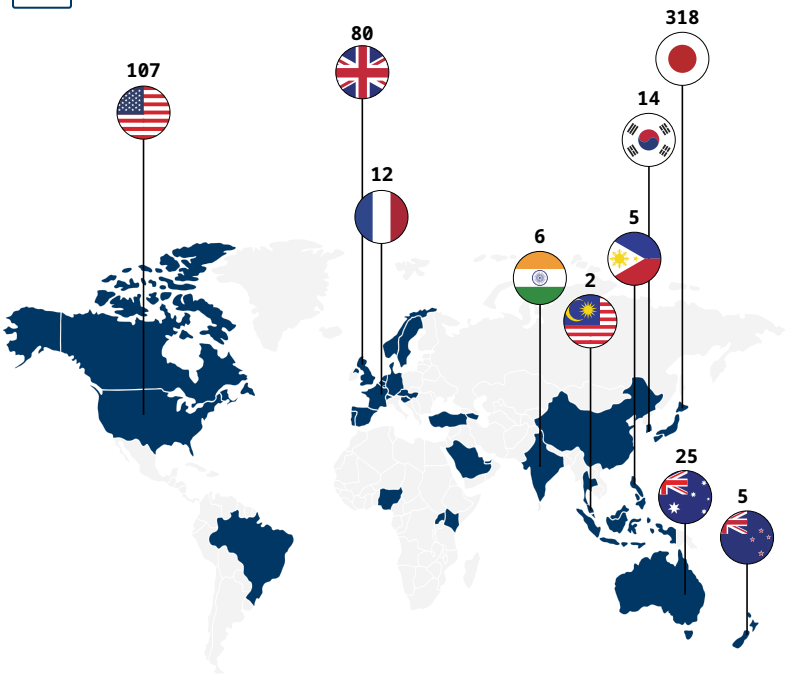
Conversations at this year's Summit highlighted both the risks and opportunities ahead. As the space sector evolves, events like this remain vital for shaping policies that promote responsible and sustainable use of space.

Global Participation

This year, the 6th Summit for Space Sustainability saw more than 650 attendees representing a global spectrum. Participants hailed from countries such as Japan, the United Kingdom, the United States, and across Europe and Asia. The Summit was attended by 76 students and young professionals, with 53 of them joining in person. The Secure World Foundation was pleased to host a special Young Professionals Breakfast, where select industry leaders from across the world met with young people starting out in the space industry. The breakfast provided a unique opportunity for networking and mentorship between experienced global leaders in the commercial and civil space industry and emerging professionals. SWF thanks all the mentors and speakers for inspiring the next generation of leaders in space.



Select Represented Countries from Around the World



Top Sessions, by Digital Streams

1. **Enabling Global Access to Space Through Space Sustainability**
2. **Responsible Behavior in Space Knows No Bounds – Asia-Pacific Perspectives on Space Security and Stability**
3. **Hello Kitty Goes To Space – New Types of Space Exploration Partnership**
4. **Choose Your Own Adventure? How To Manage the Many Forums for Space Sustainability**
5. **The Shibuya Scramble Won't Work in Space – Ideas for Enhancing APAC Space Situational Awareness**

650+
CONFERENCE ATTENDEES

76
YOUNG PROFESSIONALS IN ATTENDANCE

1,537
PRIVATE NETWORKING MESSAGES THROUGH THE WHOVA APP

14
MEDIA REPRESENTATIVES IN ATTENDANCE

44
SPONSORS AND MEDIA PARTNERS

37
COUNTRIES REPRESENTED

Participant Feedback

The 6th Summit for Space Sustainability fostered collaboration and left a lasting impact on its participants. Below are reflections from attendees, highlighting the global significance, personal growth, and collaborative spirit that defined the event. Their insights underscore the conference's role in shaping a sustainable space future.

"We sent a sizeable delegation to this year's Summit, which is testament to the importance we place on both our partnership and the event as a platform to showcase sustainability activities, discuss key opportunities/challenges, and facilitate global cooperation. It was also an excellent opportunity to continue the success of last year's scholarship competition and meet the eight inspiring awardees from the UK, Germany, Kenya, Maldives, and Uganda. ■

PAUL BATE

CEO, UNITED KINGDOM SPACE AGENCY

"Our students were greatly inspired by the Summit, and this wonderful opportunity has contributed significantly to their growth. I wish SWF continued success and development."

PROF. UCHIUMI MASAHARU

MURORAN INSTITUTE OF TECHNOLOGY

"Our students found the experience extremely valuable. Thank you for providing this precious opportunity. We look forward to participating in future summits as well."

PROF. SAITO KOUSUKE

SOPHIA UNIVERSITY

"I'm glad to see the students enjoying the Summit. Thank you for allowing us to participate in this valuable opportunity."

PROF. NAGATA HARUNORI

HOKKAIDO UNIVERSITY

"It was a rare and invaluable opportunity to participate in a conference in Japan that truly had a global feel. I am very grateful for the wonderful opportunity SWF provided for students to be a part of it."

OKUBO HARUKI

GAKUSHUIN UNIVERSITY

"Glad to have participated in the incredible international conference in Tokyo. Congratulations on a successful event! I look forward to seeing its future accomplishments."

EMILY ZHU

GRADUATE SCHOOL OF PUBLIC POLICY, THE UNIVERSITY OF TOKYO

"A huge congratulations on such a successful event! It had excellent impact and everyone was talking about it."

DAVID MATRAI

AUSTRALIA IN SPACE

"My perspective has broadened to a global view, leading me to consider the direction Japan and Asia should take in space policy. Also, engaging with various people at the international conference boosted my confidence."

DEGUCHI SHUNSHI

SOPHIA UNIVERSITY

"Along with the engaging and topical programs, I was impressed by the opportunity to speak directly with senior professionals. I look forward to leveraging this experience in my own research and career."

TAKENAKA TAIYO

YOUNG PROFESSIONAL

Additional Survey Feedback

"The event gathered many of the key commercial and government players doing work related to space sustainability while also providing high-quality talks on key topics."

"Loved the frequent breaks and the separate networking spaces."

"As a young professional, the mentoring breakfast was very useful."

"The networking events with a variety of senior industry members were very useful."

"[I appreciated] having people from all continents and broad fields (legal, technical, policy) brought together in one forum."

"The level of diversity among speakers and attendees was impressive, with a clearly intentional effort by the organizers to reflect diverse perspectives."

"Global representation and space safety were key highlights of the Summit."

"The variety of angles proposed through various sessions to address the overall topic of sustainability was extremely valuable."

"The panel about sustainability in space exploration was really insightful, offering a realistic view of how various players maintain sustainability beyond Earth orbit."

"Hearing from senior leaders across the sector provided trusted views on complex issues."

"The event was well balanced, with more than adequate networking opportunities."

"Japan was a great location, and co-scheduling with the Spacetide event made it easier to justify attending."

"The summit was organized efficiently with interesting topics, and online delivery was outstanding!"

"Aarti Holla-Maini's video address was really powerful."

"Nobu Okada was a standout speaker."

"Julie Black from the UK Space Agency was especially enlightening."

AGENDA Day One

AGENDA Day Two

SUMMARY FOR THE

Opening Session

Key Points

- Space sustainability is crucial for maintaining the benefits that society derives from space activities. To achieve this, there must be a focus on implementing pragmatic policies and practices at both national and international levels to ensure the sustainable use of outer space.
- Japan is taking active steps to contribute to space sustainability by engaging in international discussions and updating its policies on space situational awareness, debris mitigation, and in-orbit services. These national efforts serve as a foundation for broader global cooperation in space governance.
- With the increasing number of space actors, the need for responsible behavior in space operations is more urgent than ever. International cooperation and coordination are essential to prevent harmful interference, ensure transparency, and promote the safe use of outer space.
- Space sustainability is a multi generational challenge. The Summit for Space Sustainability emphasized the importance of involving young space professionals in shaping the future of space governance. Special events and mentoring sessions are designed to empower the next generation to actively participate in the development of sustainable practices for space activities.

> I hope that we will deepen discussions on a sustainable use of outer space, trends in the space industry, and space technology development, and ways to ensure sustainable exploration.
>
> TAKAICHI SANAE

> With the rising awareness of space sustainability challenges, we're also witnessing a proliferation of discussions on this topic in different fora and the emergence of new proposed norms, standards, and best practices for responsible operations in space.
>
> PETER MARTINEZ

The Speakers

TAKAICHI Sanae

TAKAICHI Sanae is the Minister of State for Space Policy, Economic Security, and Science and Technology in Japan's Cabinet. Born in Nara Prefecture, she graduated from Kobe University and has been elected to Japan's House of Representatives nine times. Known for her expertise in trade, communications, and security, she has held multiple high-profile roles across several Japanese cabinets since 1993.

KAZEKI Jun

KAZEKI Jun is Director-General of the National Space Policy Secretariat at Japan's Cabinet Office, with over 33 years in trade, economic, and national security policy. He previously served as Executive Advisor at GRIPS Alliance, focusing on economic security.

Peter MARTINEZ

Executive Director, Secure World Foundation

WATCH FULL SESSION

https://youtu.be/tdq0H36mNR8

PANEL SUMMARY FOR

Enabling Global Access to Space Through Space Sustainability

Key Points

- Our ability to continue to enjoy the societal benefits of space activities hinges on our ability to use the space environment sustainably, but in order to achieve this, there is a need to focus on the implementation of pragmatic policies and practices that will ensure space sustainability.
- Although space sustainability challenges are global, pragmatic steps can be taken at national level to start addressing these challenges. Solutions and frameworks developed at national level can provide a basis for developing best practices that can later form the basis for cooperative global solutions for space sustainability.
- Commercial operators are cooperating with each other and with international standards bodies to develop orbital best practices and standards. These standards can be used to build the foundations for future regulatory requirements at national level.
- There are now tighter linkages among various sectors operating in space. Given the proliferation of counterspace capabilities, the impact of national security actors on space sustainability is an important matter to address. It is important to consider how the national security sector can operate safely, responsibly and sustainably in the space domain.
- Society derives tremendous benefits from space. This positive message must be amplified, together with the message that urgent action must be taken to address space sustainability challenges.

> Space safety and sustainability have to be looked at in a holistic way ... Instead of just focusing on the risks, we should have a more balanced risk, benefit, and reward discussion.

JOSEF KOLLER

> Space is a shared resource for all. We need sustainable use and peaceful cooperation. Industry, academia and young professionals need to work together to protect and develop the future of space.

NAGAI HIROAKI

The Panelists

FUKUSHIMA Yasuhito
Senior Research Fellow, Policy Studies Department, Japan National Institute for Defense Studies

Muriel HOOGHE
Senior Manager - Space Safety, Luxembourg Space Agency

Josef KOLLER
Principal, Space Safety and Sustainability, Amazon Kuiper

Hermann Ludwig MOELLER
Director, European Space Policy Institute

NAGAI Hiroaki
Group President of Space Engineering Group, Space Business Unit, SKY Perfect JSAT Corporation

Peter MARTINEZ
Moderator, Executive Director, Secure World Foundation

WATCH FULL PANEL

https://youtu.be/s9Bd6rJNQZE

SUMMARY FOR

Fireside Chat Keynote

Key Points

- Active debris removal, refueling/life extension, and truly understanding the effects of things like reentry on the atmosphere and orbital carrying capacity are all key parts of improving space sustainability.
- Coordinating across different SSA systems and communicating about them is going to be increasingly important.
- Sustainability is the totality of the human impact that we are having on the environments that we work in — it's not just debris.
- The U.S. Office of Space Commerce has three principal priorities: being an advocate for the commercial space sector in the United States; regulating it; and starting TraCSS (Traffic Coordination System for Space), which will take over the responsibility of the safety function for it from the U.S. Department of Defense.
- The UK has its National Space Operations Centre (NSPOC), which is a joint endeavor between the military and civil sides so it can share information amongst all, using data provided from UK sensors and global sensors; this Centre is national in name but global in outlook.
- Sharing information about civil space objects should be shared freely as a matter of spaceflight safety; this type of transparency will allow regulators to celebrate great behavior, allowing for a race to the top.
- Talk must be actionable — focused on what its end-users' needs are - and should be respectful that these users include commercial and noncommercial players.

> We see sustainability as running as a golden seam: it's very important for boosting prosperity with, not the least, the commercial actors, both directly in the sustainability world and for all actors in space.
>
> PAUL BATE

> We've initiated a robust international dialogue, because when looking at the issue of SSA, no one country can solve this issue alone.
>
> RICHARD DALBELLO

The Speakers

Paul BATE
Dr. Paul BATE, Chief Executive, has led the UK Space Agency since 2021, overseeing over 300 professionals advancing space innovation and R&D to support global prosperity, planetary protection, and space exploration. Previously, he served as a senior health adviser to UK Prime Ministers David Cameron.

Richard DALBELLO
As Director of the Office of Space Commerce at NOAA, Richard DALBELLO oversees U.S. space traffic coordination and commercial remote sensing regulation. His career spans roles at Virgin Galactic, the White House Office of Science and Technology Policy, and other organizations, where he championed space policy and industry advocacy across sectors.

Victoria SAMSON
Moderator, Chief Director, Space Security and Stability, Secure World Foundation

WATCH FULL FIRESIDE CHAT

https://youtu.be/DQPqZSgqUyA

PANEL SUMMARY FOR

Responsible Behavior in Space Knows No Bounds: Asia-Pacific Perspectives on Space Security and Stability

Key Points

- There is an increasing urgency to come up with a rules-based international order that defines responsible behavior in space.
- Acting with due regard and increasing transparency can help avoid misunderstandings and lead to a space environment that is safer and more secure, and with less threats.
- Legally binding instruments and non-legally binding efforts are not necessarily contradictory and actually can be complementary; as well, non-legally binding efforts can be carried out via domestic law and become legally binding that way.
- The region around the equator suffers more than other regions from space debris landing in their territories, so it is an issue that is particularly pertinent to the Asia-Pacific region.

> All States are space actors. Some are space-faring — there are different levels of development — but everybody, every State is a stakeholder.
>
> HELLMUT LAGOS

> The regions around the equator are at risk for falling space debris. In fact, these regions face up to three times more likely the risk of falling space debris compared to the rest of the world.
>
> MENG SHUEN CHUA

> It is obvious that destructive ASAT tests create large amounts of space debris which can remain in orbit for years, and that would pose, of course, the collision risks to the space-faring nations, so I believe that it is a positive step to develop the norms that would create the sustainable outer space domain.
>
> YURIKA ISHII

The Panelists

Meng Shuen CHUA
MINDEF, Singapore

ISHII Yurika
Associate Professor, National Defense Academy of Japan

Hellmut LAGOS
Head of Science, Energy, Education, Innovation and Astronomy Division, Ministry of Foreign Affairs of Chile

Sunghee LEE
CEO, CONTEC

Damrongrit NIAMMUAD
Deputy Executive Director, Geo-Informatics and Space Technology Development Agency

Gay Jane P. PEREZ
Deputy Director General for Space Science and Technology, Philippine Space Agency (PhilSA)

SUZUKI Kazuto
Moderator, Professor, GraSPP, University of Tokyo • Director, Institute of Geoeconomics, International House of Japan

WATCH FULL PANEL

https://youtu.be/SfbqHPHbFAI

A SUMMARY OF KEYNOTE REMARKS BY

AKITA Seiichiro

Senior Managing Corporate Executive; Group Head, Japanese Corporate & Investment Banking Business Group, Mitsubishi UFJ Financial Group

Key Points

- Space capabilities are increasingly becoming a vital tool in solving business challenges, especially in light of environmental shifts.
- The number of companies and businesses involved in the downstream use of space technology is growing rapidly.
- Overcoming the "valley of death" challenge in commercialization of technology, requires sustained access to funding. Must develop the appropriate bankability to address this challenge in space. Cooperation is essentially to do this. The space sector is transitioning from a government driven model to a holistic approach, involving government, industry, finance and other parts of the ecosystem.
- Space sustainability is on the rise as an area of importance, MUFG has identified three areas of interest within space sustainability: 1) in space, 2) on Earth and 3) in business operations particularly the manufacturing of space equipment.
- Space is vital social infrastructure. As a financial institution MUFG recognizes Earth observation technologies as critical areas poised for growth.

> With the surge in launches the issue of space debris underscores the urgent need for sustainability in space to ensure the future viability of space as vital social infrastructure.
>
> AKITA SEIICHIRO

> The emphasis on sustainability is critical. We are all in to ensure the ongoing success and safety of space and of Earth, protecting what we have out there. These points are key to pushing the space industry ahead, driving economic growth, and ensuring we manage our outer space thoughtfully for those next generations.
>
> AKITA SEIICHIRO

About AKITA SEIICHIRO

AKITA Seiichiro is a Senior Managing Corporate Executive and Group Head at Mitsubishi UFJ Financial Group, overseeing the Japanese Corporate & Investment Banking Business Group. With a career spanning over three decades at MUFG Bank, Akita has held various leadership roles, including President and CEO of Bank of Ayudhya. He joined Mitsubishi Bank in 1989 and has been instrumental in corporate banking across Asia and the Americas. Akita holds a B.A. in Law from Keio University and has studied at Arthur D. Little School of Management.

WATCH FULL KEYNOTE

https://youtu.be/UWPK4aIc1AQ

A SUMMARY OF SPOTLIGHT TALK REMARKS BY

KOYAMA Hiroshi

Fellow, Mitsubishi Electric Corporation

Key Points

- Technologies related to Space Situational Awareness (SSA) and Space Domain Awareness (SDA) are critical to ensuring the sustainability of space activities. These technologies will play a key role in future international cooperation efforts.
- The integration of defense systems with space systems, such as communication satellites and space surveillance systems, is crucial for establishing comprehensive space security capabilities.
- Japan is developing advanced technologies, such as optical telescopes and radar systems, to enhance SSA capabilities. Additionally, Japan is focusing on Space Traffic Management (STM) to ensure the sustainability of space operations, particularly in geostationary and cislunar (Earth-Moon) space.
- International collaboration is key to addressing space sustainability challenges, especially among Asia-Oceania nations, in areas such as sensor technology, radar systems, space infrastructure, and data sharing.

> International cooperation, particularly among Asia-Pacific nations, is crucial for advancing in areas like sensor collaboration, radar systems, and data sharing. This collaboration will be vital for the future of space sustainability.
>
> KOYAMA HIROSHI

About KOYAMA HIROSHI

KOYAMA Hiroshi, Fellow at Mitsubishi Electric Corporation's Defense and Space Systems Group, has been with the company since 1987. He has played a key role in space systems, including high precision positioning and Earth Observation. Koyama holds a PhD in engineering and is a member of the International Academy of Astronautics (IAA). He also serves as a board member of the Advanced Satellite Systems Technology Center (ASTEC), contributing to space technology development.

WATCH FULL SPOTLIGHT TALK

https://youtu.be/eHyaGqd6MH8

A SUMMARY OF SPOTLIGHT TALK REMARKS BY

Rory HOLMES

Managing Director, ClearSpace

Key Points

- ClearSpace is known for its debris removal missions, which are part of a broader in-orbit service ecosystem. Core technologies in robotics, sensors, and rendezvous operations have applications across multiple in-orbit service markets.
- Missions face challenges due to the complexity of combining technologies like robotics, sensor suites, and proximity operations. ClearSpace collaborates with global partners to build on existing technologies, allowing focus on core innovations.
- Agile development, particularly in space hardware, has been critical to moving from concept to hardware in under a year. This approach has rapidly advanced ClearSpace's robotic arm technology, supported by the UK Space Agency.
- Governments can support commercial space companies by enabling rapid development, minimizing additional requirements that complicate progress, and maintaining a stable, forward-looking regulatory environment. The UK Space Agency has been instrumental in providing such support.

> The economics don't really work if you need one satellite to remove one piece of debris. You need to be removing multiple pieces of debris with your own satellite.
>
> RORY HOLMES

About RORY HOLMES

Rory HOLMES has over 15 years of experience in the space industry, working with both manufacturers and operators on programs for commercial and institutional customers like ESA, UKSA, and CNES. He holds a Master of Physics from Oxford University, a PhD from the University of Heidelberg, and is a certified Project Management Professional (PMP).

WATCH FULL SPOTLIGHT TALK

https://youtu.be/9FoZcaE0g9g

A SUMMARY OF SPOTLIGHT TALK REMARKS BY

IIZUKA Haruna

Head of Public Relations & Recruiting, Space BD Inc.

Key Points

- Human capital is central to the growth of the space industry. Developing individuals who can identify and tackle new challenges is key to driving the sector forward and ensuring its sustainable growth.
- Education and training programs are essential for fostering an entrepreneurial mindset. Initiatives aimed at diverse audiences, from high school students to corporate employees, equip participants with the skills needed to thrive in the space industry.
- Collaboration across security, civil, and commercial space sectors is vital for sustainability. Integrating areas like launch services, satellite systems, and life sciences into a cohesive value chain supports a sustainable industry.
- Continuous innovation is necessary for the space industry to succeed and grow. Space offers a unique platform for challenges, and integrating technology, education, and human capital management is essential for long-term success.

> Space is an ideal platform for challenges, and through our education programs, we aim to develop individuals who can contribute to the space value chain. We believe that space is a compelling content that attracts people and drives industry growth.
>
> IIZUKA HARUNA

About IIZUKA HARUNA

IIZUKA Haruna, a graduate of Sophia University with a focus on neuronal migration, has extensive experience in organizational development and government relations. After contributing to the Tokyo 2020 Olympic Games organizing committee, she returned to Recruit Co., Ltd., where she now facilitates communication between the company and government ministries.

WATCH FULL SPOTLIGHT TALK

https://youtu.be/95AmPPN219g

PANEL SUMMARY FOR

Hello Kitty Goes To Space: New Types of Space Exploration Partnership

Key Points

- Partnerships are already key to most space exploration activities — including commercial and government activities. From large multinational projects like Artemis, to bilateral partnerships in specific missions, to commercial collaborations between companies inside and outside of the space sector, collaboration is seen as key to enabling space exploration activities.
- Commercial companies hope to achieve economic sustainability in these activities by having a diversity in the customer and investor base, not only just relying on government funding. Commercial space exploration companies also hope to amplify and broaden the scope of innovation as compared to government approaches.
- While the current interest in lunar activities can be seen as a competition, it also creates good opportunities to develop commonality and interoperability in infrastructure, like communications, power systems, navigation.
- Space sustainability concerns are already being seen in real ways, operationally, in the lunar context, including that spacecraft operating in low lunar orbit today are seeing active need to conduct collision avoidance maneuvers. This is already impacting mission operations and cost, and will only increase in the future.
- As access to space expands — through sustained government programs and through commercial capabilities — that might increase the awareness that public stakeholders have of the benefits of space exploration. But the space community also needs to think about the methods and channels we use to communicate and how we engage with different stakeholder groups.

> There's need for information sharing platform and mutually agreed-upon international protocols to identify and manage the risk of collision between the missions around the Moon just like we do on Earth.
>
> SOYOUNG CHUNG

> We have to think about those principles of sustainability and responsibility on how we explore the Moon, but to do that in a very coordinated way internationally.
>
> JULIE BLACK

The Panelists

Julie BLACK
Missions and Capabilities Delivery Director for Discovery and Sustainability, UK Space Agency

Soyoung CHUNG
Senior Researcher, Research Strategy Office, Korea Aerospace Research Institute (KARI)

HAKAMADA Takeshi
CEO, ispace

WAKATA Koichi
Astronaut and Chief Technology Officer, Asia-Pacific Region, Axiom Space

YAMANAKA Koji
Director, JAXA Space Exploration Center, JAXA

Ian CHRISTENSEN
Moderator, Secure World Foundation, Senior Director, Private Sector Programs

WATCH FULL PANEL

https://youtu.be/RRA9Ka7sLK0

PANEL SUMMARY FOR STAND TO THE LEFT: WHAT NEW ACTORS NEED TO KNOW ABOUT SPACE SUSTAINABILITY "ETIQUETTE"

International Frameworks For Space Activities

Key Points

- There are a variety of international fora, including COPUOS, CD, ITU, and each has its own mandate, topics, membership, and culture.
- As the membership and participation in these fora grow, there is a need to look at the mechanisms of these institutes to make them more active and responsive to current and emerging issues, including issues related to space sustainability.
- Space Traffic Management (STM), collision avoidance, space debris, megaconstellations are some of these pressing issues; they can be discussed separately but might be constructively addressed as one.

> The problem is sometimes when there are national initiatives to build rules—for example, on space sustainability—where there is no harmonization. You can see different initiatives going towards paths that are sometimes diverging over the same topic.
>
> MARIO NERI

> The issue on space debris is looked at separately between space debris, space traffic management, and small satellites. I believe the best way is to package these items together—space debris, space traffic management, and megaconstellations—and discuss them as one.
>
> FAIROS ASILLAM

The Panelists

Fairos ASILLAM
Space Regulator, Space Regulatory Division, Ministry of Science, Technology and Innovation (MOSTI), Malaysia

KIKUCHI Koichi
Manager, International Relations Division, International Relations and Research Department, Japan Aerospace Exploration Agency (JAXA)

Mario NERI
Director, Spectrum Strategy & Innovation, Telesat

Christopher JOHNSON
Moderator, Director, Legal Affairs and Space Law, Secure World Foundation

Ruth PRITCHARD-KELLY
Moderator, Advisory Committee, Secure World Foundation

WATCH FULL PANEL

https://youtu.be/QNF3X72pE48

PANEL SUMMARY FOR STAND TO THE LEFT: WHAT NEW ACTORS NEED TO KNOW ABOUT SPACE SUSTAINABILITY "ETIQUETTE"

National Space Policy and Administration

Key Points

- National regulations and regulators should balance adhering to international rules while simultaneously furthering national policies, including fostering commercial interests.
- Having a single regulator, with sufficient legal authority, and a "unified" national regulatory scheme, are essential in pursuing these aims.
- National regulatory schemes ideally should not rush ahead of actual commercial activity.

> The Outer Space Treaty as a 'floor' doesn't give a lot of clear guidance, so we do have our work cut out for us. But it also means that it's an opportunity for us to think about what we really want, as regulators, or as an industry, and then, of course, to coordinate across countries. We need to be working in parallel to ensure there is as much commonality as possible.
>
> GABRIEL SWINEY

> Space is a large sphere, a much wider ecosystem for us; a lot of terrestrial applications see a lot of fruit bearing. We're happy to let industry take the lead and not overregulate, study where the gaps are, and then approach it in a very calibrated fashion.
>
> JONATHAN HUNG

The Panelists

Jeremy HALLETT
Executive Chair, Space Industry Association of Australia

Jonathan HUNG
Executive Director, Office for Space Technology & Industry, Singapore (OSTIn)

Gabriel SWINEY
Director, Policy, Advocacy, and International Division, U.S. Office of Space Commerce

Christopher JOHNSON
Moderator, Director, Legal Affairs and Space Law, Secure World Foundation

Ruth PRITCHARD-KELLY
Moderator, Advisory Committee, Secure World Foundation

WATCH FULL PANEL

https://youtu.be/GA_w1aeQNMc

PANEL SUMMARY FOR STAND TO THE LEFT: WHAT NEW ACTORS NEED TO KNOW ABOUT SPACE SUSTAINABILITY "ETIQUETTE"

Responsible Operation in Space

Key Points

- Space Situational Awareness (SSA) is crucial to being a responsible behavior, and assists in knowing how others are also behaving.
- Being a good neighbor in space is also about knowing how others are acting and what norms have been established.
- Transparency: with governments, other operators, and with the public is all crucial. An operator being transparent about your planned maneuvers, or at least times of maneuvers, would assist neighborliness and sustainability in space.
- Maneuverability in LEO, reliability of systems, and assuming responsibility by actors (as well as investors) are some key points.

> One of the really critical things for space sustainability is knowing where you are, knowing how to behave where you are, and being a good neighbor.
>
> JULI LAWLESS

> Be transparent to your government. You need to talk to your government. You need to make sure that you communicate with them so that they know what kind of regulations or international guidelines can be set. Be transparent to your peers. You need to make sure that you communicate with them so that they know what kind of operations you're doing, what activities you're doing in space. Be transparent to the public. You need to make sure that the public knows what you're doing in space, what kind of benefits you're bringing to them, and how you're contributing to the sustainable use of space.
>
> MORI HAZUKI

The Panelists

Juli LAWLESS
Strategic Business Development Director, ExoAnalytic Solutions

EISHIMA Takashi
Co-Founder / Co-CTO, Axelspace Corporation

MORI Hazuki
Lead, Space Technology, World Economic Forum

Christopher JOHNSON
Moderator, Director, Legal Affairs and Space Law, Secure World Foundation

Ruth PRITCHARD-KELLY
Moderator, Advisory Committee, Secure World Foundation

WATCH FULL PANEL

https://youtu.be/Q17oCIPo8B8

A SUMMARY OF KEYNOTE REMARKS BY

Pam MELROY

Deputy Administrator, NASA

Key Points

- NASA has established its first Space Sustainability Strategy to provide a more holistic approach to space sustainability across the scope of the agency's activities and operations.
- NASA is conducting an effort to review and asses metrics and models that might form framework for assessing space sustainability.
- The first volume of the NASA Space Sustainability Strategy focuses on the agency's approach to space sustainability in Earth Orbit, and work has begun on a second volume that will focus on cislunar space.
- NASA's work on space sustainability also includes increased efforts on assessing space debris remediation and removal technologies including research into economic factors and potential investment portfolio strategies for developing debris removal technology.
- NASA is also consulting with partners across the U.S. federal government and with international partners.

> More people going to space means more space traffic as well, more opportunity for traffic jams, near misses, more opportunities for collisions, for debris that can wreak havoc in our environment. We have got to deal with this now. It's absolutely critical that we do that. We must learn from the lessons of the past the way we didn't always preserve the environment here on Earth, we weren't thinking that way, we weren't seeing the consequences of our actions. It's absolutely critical that we come together now.
>
> PAM MELROY

About PAM MELROY

As deputy administrator, Pam MELROY performs the duties and exercises the powers delegated by the administrator, assists the administrator in making final agency decisions, and acts for the administrator in his absence by performing all necessary functions to govern NASA operations. MELROY is also responsible for laying out the agency's vision and representing NASA to the Executive Office of the President, Congress, heads of federal and other appropriate government agencies, international organizations, and external organizations and communities.

WATCH FULL KEYNOTE

https://youtu.be/sHLgpCJ-MBE

PANEL SUMMARY FOR

The Shibuya Scramble Won't Work in Space: Ideas for Enhancing APAC Space Situational Awareness

Key Points

- For SSA sharing, the countries need to agree on standards of data format and protocols; how to increase capacity-building and training for understanding/using SSA data; and to make policies and the necessary legal framework to allow for SSA data sharing.
- Challenges include military connections to some SSA sensors, lack of norms of sharing things like ephemeris data openly and willingly, and different SSA needs and contributions across the Asia-Pacific region.
- The commercial SSA sector is an important part of examining regional capabilities and needs for SSA and should be used alongside indigenously-generated data, as well as data originating in the United States.
- The Asia-Pacific region has some SSA needs that are different from other parts of the world, including being downrange of space launches and having space debris frequently land in its territory.
- Confidence about the origin and accuracy of the SSA data is directly tied to communications about it.

> As we're building the TraCSS system in the United States, from the very beginning, we recognized that that's not the only SSA system in the world, and there are already other SSA systems, independent systems, that exist, and more that are being developed. We believe it is critical if we truly want to support spaceflight safety for those systems to communicate with each other and coordinate with each other. So even though we have independent systems, there needs to be a dialogue.
>
> MARIEL BOROWITZ

> It's very important for us in the Asia-Pacific to establish common goals together.
>
> WAHYUDI HASBI

The Panelists

Mariel BOROWITZ
Director of International SSA Engagement, U.S. Office of Space Commerce, NOAA

Sittiporn CHANNUMSIN
Assistant Director of Space Technology Development Office, GISTDA

A K Anil KUMAR
Associate Director, ISTRAC (Indian Space Research Organisation Telemetry, Tracking and Command Network)

SUGIYAMA Kimitoshi
Commander, Space Operations Group, Japan Air Self Defense Force

Wahyudi HASBI
Head of Research Center for Satellite Technology, National Research & Innovation Agency (BRIN), Indonesia

Victoria SAMSON
Moderator, Chief Director, Space Security and Stability, Secure World Foundation

WATCH FULL PANEL

https://youtu.be/YxZCbxpe_Cw

A SUMMARY OF SPOTLIGHT TALK REMARKS BY

MIYOSHI Hiroaki

Fellow, Aerospace Domain, NEC Corporation

Key Points

- Japan's space industry faces unique challenges in achieving sustainability. While the government has launched a $6 billion space strategy fund to revitalize the economy through space initiatives, the industry remains smaller compared to Western countries due to a historical focus on scientific advancement over commercial investment.
- The intersection of security, civil, and commercial space sectors is crucial for sustainability. Cooperation among these sectors is necessary for developing a sustainable space industry in Japan and for continuously producing skilled human capital that meets societal expectations.
- Human capital management should focus on creating solutions for a better society. There is a need to shift from solving given problems to identifying and addressing the right issues, particularly in how space can contribute to societal value. This requires fostering human capital capable of innovation and societal impact.
- International cooperation is key to sustainable use of space as a global commons. A framework for peaceful and cooperative use of space through international collaboration would support sustainable human capital development and offer an alternative to forces seeking to change the status quo through power.

> The key to a sustainable space industry is cooperation among the security, civil, and commercial space sectors. We must build a system that continuously produces human capital capable of meeting societal expectations.
>
> MIYOSHI HIROAKI

About MIYOSHI HIROAKI

MIYOSHI Hiroaki, an NEC Fellow, has been instrumental in space technology and IT network integration. He joined NEC Corporation in 1991 after graduating from the University of Tokyo. MIYOSHI has contributed to the development of space data systems and managed large-scale ICT projects, enhancing Japan's national infrastructure for science and security.

WATCH FULL SPOTLIGHT TALK

https://youtu.be/apSiYhuJzfE

A SUMMARY OF SPOTLIGHT TALK REMARKS BY

Chiara MANFLETTI

CEO, Neuraspace

Key Points

- The economic dimension of space sustainability is crucial. While environmental sustainability has been a major focus, there is a growing need to emphasize the economic viability of space safety and sustainability initiatives. Innovation in procurement methods and legal frameworks is essential to support the development of a sustainable space market.
- Public sector support is vital for the growth of commercial space services. Clear delineation of public sector roles and services is necessary to enable commercial players to develop and provide key services. This collaboration between public and private sectors is essential for the long-term success of the space industry.
- Innovation goes beyond technology and includes legal and regulatory frameworks. To effectively address the challenges of space sustainability, there must be a focus on innovative legal approaches and regulatory measures. National-level initiatives could potentially outweigh economic concerns and benefit new players in the space industry.
- Agencies must evolve to maintain leadership in the space sector. Space agencies, both emerging and established, need to continually renew and reinvent themselves to support the growth of the commercial space sector. This ongoing evolution is key to maintaining their leadership roles and fostering a strong industry.

> Innovation really isn't just about technology. Innovation is also about roles, procurement methods, and legal aspects. We need to be audacious in the legal elements we bring out, ensuring they evolve with our understanding and technological advancements.
>
> CHIARA MANFLETTI

About CHIARA MANFLETTI

Chiara MANFLETTI, a dual Italian-German national, is Professor of Space Mobility and Propulsion at TUM and CEO of Neuraspace. With a PhD from RWTH Aachen, she has held key roles at the German Aerospace Center and ESA. In 2019, she became the first President of the Portuguese Space Agency, where she established a modern space implementation strategy.

WATCH FULL SPOTLIGHT TALK

https://youtu.be/FRZ4kJXbD1M

A SUMMARY OF SPOTLIGHT TALK REMARKS BY

Federico DI VRUNO

Co-Director, IAU Centre for the Protection of the Dark and Quiet Sky / Square Kilometre Array Observatory (SKAO)

Key Points

- The increasing density of satellites in low-Earth orbit poses significant challenges for both optical and radio astronomy. The growth of satellite constellations is causing interference with astronomical observations, highlighting the need for coordinated efforts between the space industry and the astronomy community to mitigate these effects.
- Dark Skies and quiet radio environments are crucial for the future of astronomy. The impact of satellite emissions, both intentional and unintentional, threatens the ability of astronomers to detect weak signals from the universe, necessitating the development of new technologies and regulatory measures to protect these vital observation environments.
- Collaboration between the space industry and the astronomical community is essential. Efforts are underway to involve industry in mitigating the effects of satellites on astronomical observations, including innovations like reflective coatings, attitude control, and steerable beams. These collaborative efforts are crucial for finding balanced solutions that minimize the impact on all stakeholders.
- Regulatory progress and industry involvement are key to addressing the challenges posed by satellite constellations. While regulatory measures are progressing slowly, the active involvement of industry in the discussion and development of mitigation techniques is essential. The astronomy community is inviting industry participation to find effective and balanced solutions.

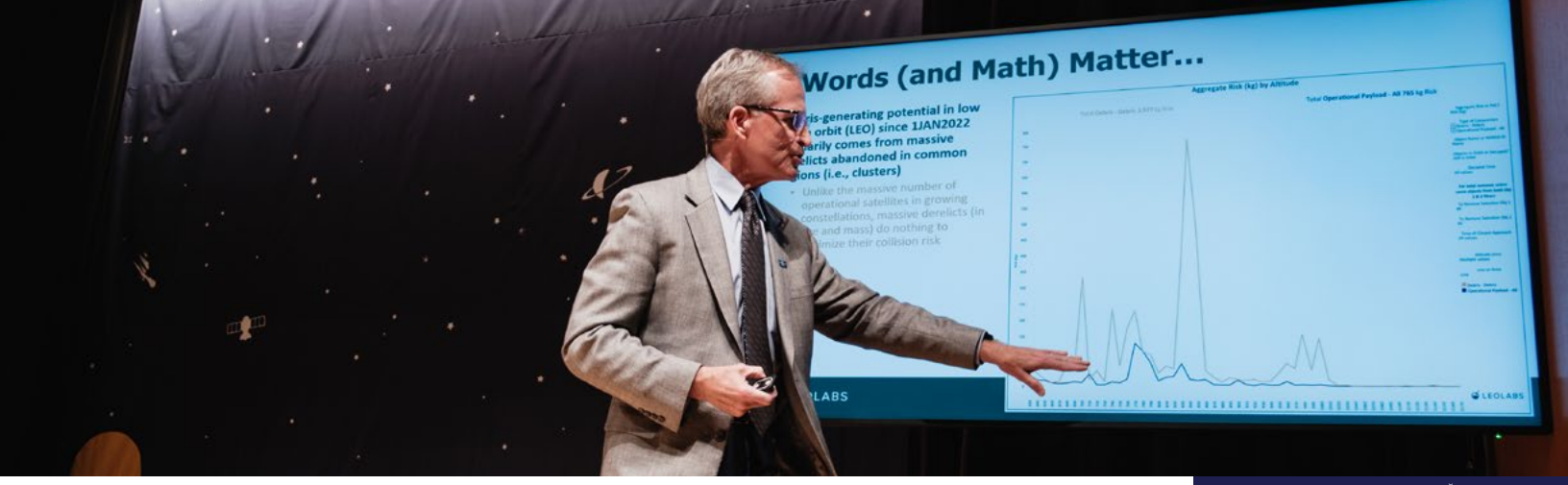
> Astronomy will have to invest more resources. This effect is not going to disappear. We are seeing more and more activity in low-Earth orbit. The involvement of industry is key in this, and we invite industry to work on this.
>
> FEDERICO DI VRUNO

About FEDERICO DI VRUNO

Federico DI VRUNO, Co-Director of the IAU Centre for the Protection of the Dark and Quiet Sky, specializes in Radio Astronomy and the protection of radio spectrum. He also serves as Spectrum Manager at the SKA Observatory and represents SKAO at the ITU and UN COPUOS. With a background in electronic engineering, he has contributed to the study of satellite constellation interference with radio astronomy since 2019.

WATCH FULL SPOTLIGHT TALK

https://youtu.be/Asw_fgQ9shw



A SUMMARY OF SPOTLIGHT TALK REMARKS BY

Darren MCKNIGHT

Senior Technical Fellow, LeoLabs

Key Points

- Large derelict debris objects (e.g., rocket bodies) pose significant risk to space operations in key regions of LEO; and the amount of mass from rocket bodies in orbit is actually increasing in recent years, despite mitigation guidelines. Despite this the risk of inaction is not compelling enough right now to drive action.
- Collision risks in certain regions of Low Earth Orbit (LEO), particularly at altitudes like 775 km and 975 km, are significant due to clusters of large derelict objects that have accumulated over decades. The probability of collision is now measurable, rather than hypothetical, with real chances of impact over the next few years.
- Massive collisions could produce thousands of trackable fragments, significantly increasing orbital congestion. For example, a collision involving objects of 6,000 kg could result in around 10,000 new debris fragments, further escalating risks for current and future space operations.
- While debris mitigation guidelines exist, they haven't prevented the increasing accumulation of massive objects in LEO. This situation requires urgent intervention, as delays will only increase the difficulty and cost of remediation efforts.
- Without prompt action, the global space community could face an environment where satellite missions are frequently disrupted or terminated prematurely due to debris impacts, ultimately impacting the space economy and safety of operations in LEO.

> The global space community is running out of time to gracefully transition from the current world of reliable LEO space operations to an environment where mission lifetimes are routinely curtailed due to orbital debris impacts.
>
> DARREN MCKNIGHT

About DARREN MCKNIGHT

Dr. Darren MCKNIGHT is a Senior Technical Fellow at LeoLabs, leading initiatives in space situational awareness and space sustainability. He develops risk algorithms, new statistical collision risk assessments, and space incident investigations. As a member of the International Academy of Astronautics' Space Debris Committee, Darren focuses on reducing debris collision hazards in low Earth orbit. He has coauthored five books and presented over 120 technical papers in 21 countries.

WATCH FULL SPOTLIGHT TALK

https://FIX ME and the QR CODE

PANEL SUMMARY FOR

Orbital Debris Remediation—Gotta Catch' Em All?

Key Points

- Active Debris Removal (ADR) technology is still difficult and needs work to mature, even with technology development programs actively being pursued in industry government partnerships. Also obstacles remain in moving the international community forward to actually do ADR activities.
- Development of ADR capabilities and on-orbit servicing capabilities are linked. Commercial capabilities to do ADR are part of the board on-orbit servicing ecosystem, and development will be complimentary.
- Need to develop and mature policy and regulations — for licensing, for safety, for transparency given dual-use concerns — related to ADR and on-orbit servicing, alongside technology. In this regard, some of the missions ongoing can be seen as policy demonstrations in addition to technology demonstrations.
- External aids or service — e.g., active debris removal capabilities — are necessary to supplement debris mitigation commitments or operators in order to follow through on debris mitigation guidelines.
- All actors — including Russia, China, and the United States — need to be at the table when addressing action towards debris removal. Along with Japan, Europe, India, and France, these are the collective group of countries that "own" the large derelict debris objects.

> The [Zero Debris] Charter is in recognition of the situation in that the existing laws and guidelines are not sufficiently followed and being an operator ourselves … we know that this is not because of ignorance, it's because of the fact that it is technically difficult to do it, retire a mission, passivate it and dispose it safely after five or 10 years of operations is just not built into the designs.
>
> HOLGER KRAG

> …[that message of sustainability] really helps spread that message of sustainability is important to the general public. I mean we know it's important but we are quite good at talking to ourselves and outside of our small community the space sustainability message is not well known at all.
>
> RAY FIELDING

The Panelists

Chuck DICKEY
Principal, Three Country Trusted Broker

IWAMOTO Aya
Vice President, Policy and Government Relations, Astroscale Japan

Ray FIELDING
Head of Sustainability & Active Debris Removal, UK Space Agency

Holger KRAG
Head of Space Debris Office, European Space Agency

YAMAMOTO Toru
Team Leader, Commercial Removal of Debris Demonstration (CRD2) project, JAXA

Ian CHRISTENSEN
Moderator, Senior Director, Private Sector Programs, Secure World Foundation

WATCH FULL PANEL

https://youtu.be/wGF01-0nzUA

A SUMMARY OF KEYNOTE REMARKS BY

OKADA Nobu

Founder & CEO, Astroscale

Key Points

- The collision risk in the space environment — from debris and other objects — is increasing and has reached a critical level.
- There is no value chain or approach in the space industry for serviceability and reusability of space objects, including removal of debris. On-orbit servicing addresses this gap.
- Provided a review of Astroscale's progress in active debris removal technology development, including the ELSA-D and ADRAS-J missions done in partnership with government space agencies.
- Along with demonstrating technology, ADRAS-J is a policy demonstration, related to the regulatory oversight as well as safety and transparency in active debris removal operations.

> When I started Astroscale, there was kind of a reservation to discuss about active debris removal because of the unproven technologies, unknown costs, dual-use implications, and liability issues. But we are actually addressing these issues, overcoming these issues, with examples. So it's time to take decisive actions globally.
>
> OKADA NOBU

About OKADA NOBU

OKADA Nobu founded Astroscale in 2013 to advance space sustainability through on-orbit servicing. He has grown Astroscale globally, raising over $383 million. OKADA is a key figure in the space industry, holding positions in international space organizations and has received numerous awards for his contributions.

WATCH FULL KEYNOTE

https://youtu.be/MuleWKBnVd4

A SUMMARY OF SPOTLIGHT TALK REMARKS BY

Wen ZHOU

Legal Adviser of the Arms and Conduct of Hostilities Unit of the Legal Division at the International Committee of the Red Cross (ICRC)

Key Points

- Military space operations are governed by existing international law. Despite the unique challenges of the space environment, military activities in outer space are constrained by international law, including the UN Charter, the Outer Space Treaty, and International Humanitarian Law (IHL), which sets limits on the use of force and certain types of weapons.
- The dual-use nature of space systems complicates the protection of civilians. The growing involvement of commercial space entities in military operations increases the risk of civilian objects being misidentified as military targets. This highlights the need for physical or technical separation between civilian and military space systems.
- Humanitarian considerations are crucial in space security discussions. Given the critical role of space systems in providing essential civilian services, future discussions on space security must prioritize humanitarian concerns. The ICRC advocates for integrating these considerations into any normative developments related to space.
- The ICRC's recommendations are gaining traction in international forums. The ICRC has been actively participating in the UN Open-ended Working Group on Responsible Space Behavior and has seen some of its recommendations, particularly those focused on protecting civilian space services, being adopted in upcoming discussions.

> Military space operations do not occur in a legal vacuum, but are constrained by existing international law, including IHL. Humanitarian considerations should be placed at the center of any future multilateral discussion and any future normative developments relating to space security.
>
> WEN ZHOU

About WEN ZHOU

Dr. Wen ZHOU is Legal Adviser at the ICRC in Geneva, coordinating legal and policy positions on disarmament and new technologies, including outer space and AI. She frequently represents the ICRC at international events and is the main author of ICRC position papers on outer space and international humanitarian law. Previously, she was Associate Legal Counsel at the World Bank and Assistant Professor of International Law. Wen holds a Ph.D. in International Law.

WATCH FULL SPOTLIGHT TALK

https://youtu.be/Rwsyo5HQKvk

PANEL SUMMARY FOR

International Law and Clash of the Kaiju (In Space)

Key Points

- The UN Charter, the UN treaties on outer space, the law of neutrality, and International Humanitarian Law (IHL) are all applicable to potential conflicts in outer space.
- War in space is different from war on Earth: Domain awareness and monitoring are more of a problem; relative motion in space is different from what one might expect; destructive attacks can be indiscriminate and widespread.
- Manuals such as the MILAMOS and Woomera manual, which attempt to restate the law such as it currently is, can be useful for a variety of stakeholders, lessen the chances of conflict in space, and constrain the effects of conflict in space.
- The MILAMOS Manual addresses the legality of activities during times of peace, and during times of rising tension, while the Woomera Manual addresses the legality of activities in the context of an international armed conflict in outer space.
- Further promotion of these manuals, widespread engagement, and even updating these manuals might be further steps to strengthen preserving peace in outer space.

> The intent of these manuals is to inform and educate. They are meant to advance the discussion on these issues. There are two challenges that these manuals face: one, they have two audiences: the experts, and the public; and two, people might look to the manuals for an easy answer, but it's not going to be there, because these issues are complex.
>
> BRIAN WEEDEN

> Usable space is actually quite small. When we mess it up, we mess it up.
>
> MARK MOZENA

The Panelists

AOKI Setsuko
Professor of Law, Keio University Law School

Andrea HARRINGTON
Co-Director, Institute of Air and Space Law • Associate Professor, McGill University – Faculty of Law

Mark MOZENA
Vice President of Government Affairs, Planet

Brian WEEDEN
Systems Director, Policy and Regulatory Team Lead, The Aerospace Corporation

Melissa DE ZWART
Professor Space Law and Governance, University of Adelaide

Christopher JOHNSON
Moderator, Director, Legal Affairs and Space Law Secure World Foundation

WATCH FULL PANEL

https://youtu.be/Rwsyo5HQKvk

SUMMARY FOR

Fireside Chat: Sustainability's Role in Space Venture Capital Activities

Key Points

- Venture capital firms may be regulated or have their own investors (limited partners) that have sustainability or ESG requirements. These requirements can inform sustainability considerations in the VC firms' investment strategy. Compliance with these requirements is done through reporting and due diligence on potential portfolio investments.
- ESG or sustainability guidelines coming from LPs or regulators are general sustainability principles; these principles are not specifically adapted or developed for the space sector.
- Venture capital deals in risks. Space sustainability risks — launch failure, debris and collision risk — can be evaluated.
- Certain types of VC may have a more longer term outlook (e.g., deep tech investors). There is a need to educate new investors coming into the space sector that a longer term outlook is needed on the specific aspects of the space sector that might differ from other tech sectors.
- Recognition of the space remains a government driven sector, despite the increasing number of commercial companies involved.
- Space sustainability can generate investment opportunities and new markets (e.g., SSA, green fuels and propulsion, on-orbit servicing, recycling of materials, and use of space data on Earth), and shouldn't just be viewed as a restricting factor.

> We want to make sure that the companies in which we invest will stay in the long term and provide sustainable returns for our investors. Looking at the aspects that are linked to sustainability, such as sustainable supply chain, elements that are going towards climate change, but also ethical teams and making sure that it is socially acceptable will make sure that the company is successful in the long term.
>
> ESTELLE GODARD

> I strongly believe that space sustainability is a business chance, which means that for investors like us, it's an investment opportunity.
>
> AOKI HIDETAKA

The Speakers

AOKI Hidetaka
Co-Founder & Director, Global Brain • Partner, Space Port Japan

Estelle GODARD
Investor, Promus Ventures

ISHIDA Masayasu
Moderator, Co-founder, President and CEO, SPACETIDE Foundation

WATCH FULL FIRESIDE CHAT

https://youtu.be/YLm00D-PM4g

A SUMMARY OF KEYNOTE REMARKS BY

Mario MANIEWICZ

Director, Radiocommunication Bureau, ITU

Key Points

- Private sector has a direct role and voice in engaging in ITU studies, working groups and conferences, although decision making is held by states (governments) through a consensus model.
- In last decade, the ITU has seen a great increase in number of filings for non-geostationary orbit (NGSO) systems, including complex satellite systems
- Recent ITU conferences have added resolutions tasking the ITU Radiocommunication Bureau with increased studies and taskings related to space sustainability for consideration at the next World Radio Conference in 2027, including on the long-term sustainability of the use of the radiofrequency and associated orbits as resources.
- The Radiocommunication Bureau has also been tasked with development of a recommendation on safe and efficient deorbit and/or disposal strategies and methodologies for NGSO space stations involved in radiocommunication services after the end of their life.
- The ITU has created a space sustainability gateway, a website that will promote and share data on responsible behaviors in the operations of non-GSO systems

> While the massive deployment of satellites will certainly bring a promising future in terms of broadcasting connectivity from space, monitoring our planet, and bringing communications to the Moon and beyond, it will also transform the current dynamics of space services into a more complex scenario that we need to take care of in a responsible and responsive manner.
>
> MARIO MANIEWICZ

About MARIO MANIEWICZ

Mario MANIEWICZ, Director of the ITU's Radiocommunication Bureau since 2019, oversees global radiocommunication standards. With over 35 years at ITU, he has managed spectrum and satellite orbit regulations. Prior to ITU, he held leadership roles in Uruguay's telecom sector and taught at the University of Uruguay.

WATCH FULL KEYNOTE

https://youtu.be/zgFVROJnjp4

A SUMMARY OF SPOTLIGHT TALK REMARKS BY

Aarti HOLLA-MAINI

Director, United Nations Office for Outer Space Affairs (UNOOSA)

Key Points

- A coherent governance framework for space sustainability is essential. Space is a shared and limited resource, and safeguarding it requires a unified approach across various international forums. Effective governance must avoid duplicative efforts and ensure all initiatives contribute synergistically to the global goal of space sustainability.
- The complexity of space sustainability requires diverse expertise and a holistic approach. The increasing congestion in Earth's orbits, resulting from debris and satellite proliferation, underscores the need for comprehensive risk mitigation strategies. This necessitates collaboration among multiple fora, leveraging the diverse competencies they offer.
- Binding regulations for space sustainability face geopolitical challenges. While there is a growing consensus on the need for sustainable use of space, the current geopolitical climate makes new legally binding regulations unlikely in the short term. Instead, efforts should focus on achieving consensus on shared goals and implementing national measures to enforce existing guidelines.
- Inclusion of developing countries is crucial for equitable space governance. As space sustainability becomes increasingly complex, it is vital to ensure that developing countries have a voice in these discussions. This inclusivity fosters a more comprehensive approach to space governance, ensuring that the benefits of space are accessible to all nations, regardless of their technological or economic status.

> Space sustainability is a big challenge and big challenges require multiple partners, but we will gain nothing by stretching limited resources in different directions. We can instead achieve everything by linking the capabilities of different fora under a coordinated approach.
>
> AARTI HOLLA-MAINI

About AARTI HOLLA-MAINI

Aarti Holla-Maini is the Director of the UN Office for Outer Space Affairs (UNOOSA), appointed by UN Secretary-General António Guterres in September 2023. With over 25 years in the space sector, she previously served as Secretary-General of the Global Satellite Operators Association. A recognized leader in forging public-private partnerships, she has played a pivotal role in global space advocacy, including the Crisis Connectivity Charter. Aarti holds a law degree from Kings College London and an MBA from HEC Paris.

WATCH FULL SPOTLIGHT TALK

https://FIX ME and the QR CODE

PANEL SUMMARY FOR

Choose Your Own Adventure? How To Manage the Many Forums for Space Sustainability

Key Points

- A sustainable future in space depends on having effective governance institutions and collaborative fora. With the rising salience of space sustainability, more initiatives to promote space sustainability are coming to the fore. It is important to harness these initiatives in a synergistic fashion to avoid duplication efforts and dilution of impact.
- While continuing norm creating initiatives, it is important to gain the support of as many countries as possible at the United Nations and other international fora through transparent discussions.
- The private sector has faced sustainability challenges in terrestrial domains and has developed economic models and financial tools that can be translated to the space sector to support the development of innovative approaches to space sustainability challenges that allow risk reduction through levers such as insurance, early-stage private equity, debt financing, equity financing, and other methods commonly employed by capital markets.
- Policy decisions should be based on the best available models and data. Commercial operators should be willing to share best-practices and lessons learned to support evidence-based policy-making and regulation.
- Space governance discussions have traditionally been confined to a small group of individuals within certain branches in government. As space becomes increasingly integrated into more areas of society, it becomes increasingly important to improve coordination within governments to ensure that the societal risks of space sustainability challenges are fully understood.

> We need to start to converge all of these groups and all of these ideas that are written in different documents, and the right point to do this convergence is at UN COPUOS.
>
> HUGO ANDRÉ COSTA

> It's really about what actually has to happen to deploy the capital to really accelerate the journey on sustainable use of space.
>
> ANGELIE MOLEDINA

The Panelists

Hugo André COSTA
Executive Board Member, Portuguese Space Agency

Ryan GUGLIETTA
Lead Foreign Affairs Officer, U.S. Department of State

John JANKA
Chief Officer, Global Government Affairs & Regulatory, Viasat Inc.

Angelie MOLEDINA
Chief Impact Officer, Sustainable Markets Initiative

NAKAMURA Kimitake
Deputy Assistant Minister (Ambassador), Ministry of Foreign Affairs

Peter MARTINEZ
Moderator, Executive Director, Secure World Foundation

WATCH FULL PANEL

https://youtu.be/kQEvRyiqbVA

Young Professional & Student Engagement

At the heart of our mission is the commitment to foster the next generation of space leaders. Once again, as part of the 6th Summit for Space Sustainability, we hosted a Mentoring Breakfast that brought young professionals and students together with leading experts from across the space industry. With approximately 78 young professionals and students in attendance, including 70 in person, this event provided an invaluable opportunity for open dialogue, direct mentorship, and career guidance from some of the industry's top professionals.

The breakfast featured discussions on career pathways, the evolving landscape of space sustainability, and the importance of collaborative efforts to address the challenges of the modern space environment. With the support of our sponsors, we were thrilled to welcome 14 scholarship recipients—winners of the SGAC-UKSA-SWF and SGAC-BryceTech-HEO-SWF scholarships. These exceptional individuals, representing diverse backgrounds and disciplines, from engineering and law to policy analysis and space science, each bring a unique perspective and dedication to advancing space sustainability through engineering innovations, space policy, or educational outreach in their communities.

Our mentors and speakers shared insights into the dynamic roles within the global space industry. They emphasized the critical need for responsibility, collaboration, and transparency in space operations. The enthusiasm and ambition demonstrated by these young attendees were unmistakable, reinforcing our commitment to creating platforms that nurture their growth, foster meaningful connections, and inspire future leadership.

We extend our deepest gratitude to our mentors, sponsors, and everyone who contributed to making this breakfast an enriching experience. Together, we continue to shape a more sustainable and inclusive future in space by supporting the ambitions of young professionals and students worldwide.

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AXELSPACE

ESPI European Space Policy Institute

EXOLAUNCH

exotrail end-to-end space mobility

Infostellar

KSAT Kongsberg Satellite Services

Look Up SPACE

planet

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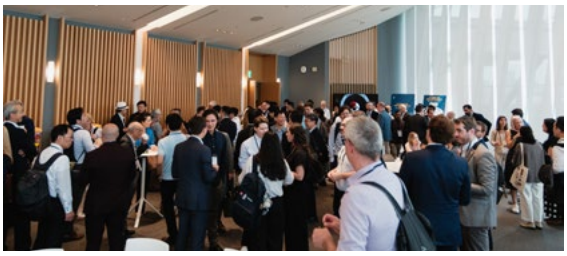


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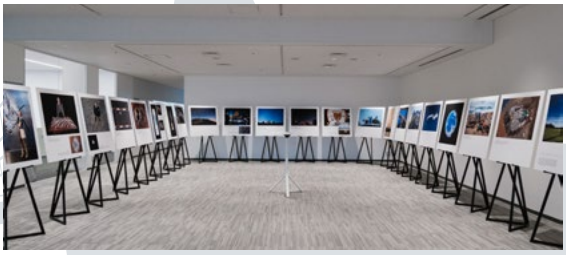

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