

Space Symposium 2023
Salon Luncheon
Panel Report

Drivers of Space Sustainability

April 2023



About 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 UK Space Agency

The UK Space Agency plays a major role in delivering the government's National Space Strategy. It supports a thriving space sector in the UK, which generates an annual income of £17.5 billion and employs 48,800 people across the country. Its staff include scientists, engineers, commercial experts, project managers and policy officials who help to catalyse investment to support projects that drive investment and generate contracts for the UK space sector; deliver missions and capabilities that meet public needs and advance our understanding of the Universe; and champion the power of space to inspire people, offer greener, smarter solutions, and support a sustainable future

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Drivers of Space Sustainability

The UK Space Agency and Secure World Foundation (SWF) recently hosted the **Drivers of Space Sustainability Luncheon Panel** at Space Symposium 2023 in Colorado Springs, featuring diverse space industry experts. The panel discussion was introduced by the **Rt Hon. Lord David Willetts FRS**, Steering Board Chair for the United Kingdom Space Agency, who provided opening remarks about the importance of sustainable practices in the space industry. He then introduced **Ian Annett, Deputy Chief Executive for the UK Space Agency**, who made several important announcements, including: the UK Space Agency's continued partnership with the Secure World Foundation for their **5th Summit on Space Sustainability in New York City in June** and the funding for the UK Space Agency's Earth & Space Sustainability Initiative, which aims to establish a transparent Environmental, Social and Governance (ESG) space sustainability standard recognized by finance, insurance, and regulatory communities worldwide.

Panelists were:

- **Moderator:** Victoria Samson, SWF Washington Office Director
- Allison Areias, Strategic Partnerships and Initiatives at United Nations Office for Outer Space Affairs (UNOOSA)
- Rebecca Evernden, Director of Space with the Department for Science, Innovation & Technology at the United Kingdom Space Agency
- John Janka, Chief Officer of Global Government Affairs & Regulatory at Viasat
- Joanne Wheeler, the Managing Partner at Alden and Chair of the Satellite Finance Network.

During the luncheon panel, each speaker presented critical points on the drivers for space sustainability, followed by a discussion and Q&A session. The panelists covered a range of issues related to space policy, regulations, and financing.

This report features one-sentence summaries of each speaker's key points and highlights from the panel discussion and questions and answers during the Q&A session. The Secure World Foundation hopes this report will help foster further discussion and collaboration in the space community.



A SUMMARY OF REMARKS BY

Ian Annett

Deputy Chief Executive, UK Space Agency

Critical Points

- UK's vision for space sustainability includes regulatory leadership, industry-led standards, international leadership, and sustainable capabilities.
- Active Debris Removal (ADR) and In-Orbit Servicing and Manufacturing missions planned
- Progress since the launch of the Plan for Space Sustainability:
 - Commissioned two National ADR Mission design studies
 - UK investment in a world-leading Space Sustainability Standards initiative
 - Space Surveillance & Tracking service is being rolled out to UK-licensed satellite operators.
 - UK Space Agency's Enabling Technologies Programme's third call for proposals themed on Sustainability for Space
 - £111M investment in European Space Agency's Space Safety Programme
 - Established a dedicated Sustainability team
- Upcoming plans:
 - UK Space Agency to be anchor sponsor of the 5th Summit for Space Sustainability in New York.
 - Funding the Earth & Space Sustainability Initiative for industry-led Space Sustainability Standard
 - A servicing mission in 2028 and developing orbital assembly or manufacturing by the end of the decade.

About Ian Annett

Ian joined the UK Space Agency in January 2020 as Deputy CEO for Programme Delivery. He is responsible for delivering all National space programmes across the Agency, including the UK Spaceflight programme. He deputises for the Chief Executive in his absence, chairs the UK Space Agency Delivery Board, is the Agency's head of profession for programme and project delivery, and is a member of the UK Space Agency Steering Board.

He was formerly in the Royal Navy as a weapons and communications specialist. He was the Programme Director for the Skynet 6 programme, a Senior Responsible Officer for maritime Information Warfare programmes, and the Chief Information Officer for the Royal Navy.



A SUMMARY OF REMARKS BY

Victoria Samson

Washington Office Director. Secure World Foundation

Critical Points

- There are 7,738 active satellites in orbit; 3,866 are from one entity: SpaceX.
- Space security has historically been relegated to superpowers; now, every person benefits from space technology, so space security is relevant to everyone.
- We are seeing an increase in the number of countries doing research and development in counterspace capabilities
- Anti-satellite tests have created 6,850 pieces of trackable debris, of which nearly 3,500 are still in orbit.
- Sheer force of impact can spread debris well past the altitude at which impact is made, hundreds or even thousands of kilometers away.
- The higher the debris, the longer it will take to deorbit and affect other space objects, satellites, and stations.
- 13 countries have made commitments not to conduct destructive ASAT missile tests, and 155 countries voted to support a December 2022 UN General Assembly resolution calling for such a moratorium.

About Victoria Samson

Victoria Samson is the Washington Office Director for Secure World Foundation and has over twenty-five years of experience in military space and security issues.

Before joining SWF, Ms. Samson served as a Senior Analyst for the Center for Defense Information (CDI), where she leveraged her expertise in missile defense, nuclear reductions, and space security issues to conduct in-depth analysis and media commentary. Prior to her time at CDI, Ms. Samson was the Senior Policy Associate at the Coalition to Reduce Nuclear Dangers, a consortium of arms control groups in the Washington, D.C. area, where she worked with Congressional staffers, members of the media, embassy officials, citizens, and think-tanks on issues related to ballistic missile defense and nuclear weapons reduction. Before that, she was a researcher at Riverside Research Institute, where she worked on war-gaming scenarios for the Missile Defense Agency's Directorate of Intelligence.

Known throughout the space and security arena as a thought leader on policy and budgetary issues, Ms. Samson is often interviewed by multinational media outlets, including the New York Times, Space News, and NPR. She is also a prolific author of numerous op-eds, analytical pieces, journal articles, and updates on missile defense and space security matters. She is also a member of the International Astronautical Federation (IAF) committee on space security and the Space Security Working Group of the National Academies of Sciences, Engineering, and Medicine (NASEM)'s Committee on International Security and Arms Control (CISAC).



A SUMMARY OF REMARKS BY

Allison Areias

Strategic Partnerships & Initiatives, UNOOSA

Critical Points

- The U.S. Department of Defense tracks about 32,000+ objects greater than 10 cm. These include derelict satellites, debris intentionally released, launch vehicle accidents, failures, and ASAT tests.
- Debris has been around for a while, but the multilateral community is addressing it.
- People have worked on this issue for decades, leading to consensus-based product development.
- Objects have been registered in outer space since 1962, vital for tracking launches and liability.
- 13,700 total objects launched into space have been registered, many by hand; for example, currently, one person at UNOOSA inputs this data.
- In 2022, there were 2,055 registrations, and in 2023, more than 700 objects have entered the registry.
- Guidelines are voluntary, with varying consensus levels.
- UNOOSA started with 18 member states and has grown rapidly. UNOOSA is the fastest and most valuable process for addressing space sustainability.
- While they cannot participate directly with UNOOSA, commercial entities can cooperate with UNOOSA through engagement with national governments and share their lessons on sustainability through UNOOSA projects.
- Countries rely on UNOOSA support to participate in COPUOS and understand the importance of space activities and sustainability. Commercial entities are encouraged to partner with governments to become part of the multilateral program process.

About Allison Areias

Allison Areias is piloting a new “Strategic Partnerships and Initiatives” portfolio within the Office of the Director at the UN Office of Outer Space Affairs, with a particular interest in forging partnerships between the commercial sector and emerging spacefaring nations. Allison is the first-ever U.S. diplomat to be seconded to an office of the UN Secretariat. As a Foreign Service Officer, she served overseas in Vietnam, Afghanistan, France, Sri Lanka, Canada, and Austria, and worked domestically on economic security, the protection of intellectual property rights, and as an advance officer for Secretary of State Condoleezza Rice. Before joining the Foreign Service, Allison was a federal marine wildlife attorney for the National Oceanic and Atmospheric Administration and the U.S. Department of Justice. She is also a former Peace Corps Volunteer with diplomas from the Universities of California at Santa Barbara and Davis, France’s Ecole Nationale d’Administration, and the U.S. National War College.



A SUMMARY OF REMARKS BY

Rebecca Evernden

Director of Space, Department for Science, Innovation & Technology
United Kingdom Space Agency

Critical Points

- The UK government has placed space sustainability at the core of its space policy thinking.
- This focus is integrated into both civilian and national space interests.
- Domestic policy decisions on space sustainability must strike a balance between promoting investment and ensuring sustainability while addressing safety concerns.
- Cooperation with the industry and academic community is vital for tackling data challenges and monitoring space activities effectively.
- Access to the most accurate information is necessary for informed policy decision-making.
- Forming a coalition of willing partners and establishing an open, collaborative relationship with the industry is key to developing standards.
- The government and industry need to collaborate on creating a regulatory framework that supports a business-friendly environment.
- It is crucial to communicate the importance of space and space sustainability to the public, in language they will understand, as politicians respond to their constituents' concerns.
- The narrative should emphasize the possibility of finding a balance between a robust regulatory framework and cultivating a competitive business environment.

About Rebecca Evernden

Rebecca joined the Department for Science, Innovation, and Technology as Director for Space in March 2021.

Her responsibilities have included:

- Delivering the first National Space Strategy.
- Establishing a new space policy and strategy hub in close partnership with the Ministry of Defence.
- Sponsoring the work of the UK Space Agency.
- Overseeing several of the Government's major space programmes.

Rebecca had a previous role as Director for International in the UK Space Agency, where she took the Space Industries Bill (now Act) through Parliament and led the UK's participation in the EU Space Programmes and EU exit contingency planning. During her career in the Civil Service, Rebecca has worked in several government departments, including roles as Director for Citizens Rights and Data in Department for Exiting the European Union, Senior Private Secretary to the Environment Secretary of State, a posting to Brussels and work at Defra and in the Cabinet Office on climate change policy.



A SUMMARY OF REMARKS BY

John Janka

Chief Officer, Global Government Affairs & Regulatory, Viasat

Critical Points

- Low Earth orbit's (LEO) capacity is finite, and we must act now to accommodate interests equitably and sustainably.
- Human use of space is increasing rapidly, with the number of satellites in orbit doubling in the last 5 years and a 10-fold increase expected in the next 5 years.
- LEO capacity can be defined by measures such as acceptable collision risk, safe access to space highways, available spatial look angles, and acceptable environmental impact.
- Growing number of LEO satellites increases consumption of LEO capacity and leaves less capacity for others.
- Safeguarding space sustainability involves ensuring opportunities for all participants, avoiding tipping points, maintaining commercial insurance, and preventing nations from being frozen out of the space race.
- Actions required: quantifying LEO capacity, becoming efficient in LEO operations, and developing admittance controls and binding rules to ensure continued access to space for all.
- Industry must embrace modeling of LEO capacity, fragility of the environment, and the efficacy of proposed behaviors, mitigation techniques, and rules.
- New commercial uses of space change the risk profile in LEO, and systems must be designed to withstand both natural phenomena and man-made disruptive effects.
- Develop ways to do more with less in LEO and determine how to share limited resources.
- Bold ventures in space may fail, leaving large numbers of satellites unmanaged in orbit and requiring nations to step in.
- Rules must be updated to safeguard open, secure, and responsible access to LEO for the future and for all.

About John Janka

John P. Janka serves as Chief Officer, Global Government Affairs & Regulatory at Viasat, Inc., an international communications solutions provider with a long legacy of designing, building and operating telecommunications and broadband networks of all types. He has extensive experience in the telecommunications, media, and technology (TMT) sector from over three decades of work at the global law firm Latham & Watkins, where he was a partner and served as the head of its Communications Law practice group. In that capacity, Mr. Janka represented entities ranging from startup entities to global leaders, whom he counseled on a variety of strategic matters. His clients included domestic and international satellite, wireless, and other terrestrial telecommunications companies; Internet service providers; video programming and other content suppliers; media services companies; television and radio broadcast operators; equipment manufacturers; and banks, private equity firms, and other investors.



A SUMMARY OF REMARKS BY

Joanne Wheeler

Managing Partner, Alden, and Chair, Satellite Finance Network

Critical Points

- There is a genuine concern that space activities will become uninsurable in three to five years.
- In 2022, there were 186 launches which put up 2,500 satellites. Of those, only 340 were insured for launch.
- There are 6,100 satellites in LEO. Of those, 63 are insured.
- LTS guidelines are a good starting point. But, the driving question is implementation at the national level.
- There is significant concern surrounding regulatory forum shopping. Space organizations looking for the most friendly regulatory environment for their operations.
- Without decisive action, taking a cradle-to-grave approach as much as possible, positive sustainability outcomes for the space environment may not be realized.

About Joanne Wheeler

Joanne Wheeler is one of the leading experts in the field of satellites, having worked at both Ofcom and the European Space Agency and for over 20 years in private legal practice in this area. She specializes in communications, satellite, and space regulatory and policy matters, together with all forms of commercial contracts and public-private partnerships. She was awarded an MBE for services to the UK space industry in 2017. She is ranked in Tier 1 in legal directories for her expertise in satellite and communications regulatory and commercial contracts. She won the Financial Times European Legal Innovator of the Year Award in 2014 for her work with the UK space industry and government in drafting and changing satellite-related legislation. She was also nominated as Lawyer of the Year in the UK in 2017. She is the co-founder and chair of the Satellite Finance Network (www.satellitelifinancenetwork.org) and writes a column for the international satellite industry journal Via Satellite. She is also a Fellow of the Royal Astronomical Society and the Royal Aeronautical Society, a trustee of the National Space Centre, and chair of the steering board of the National Space Academy.

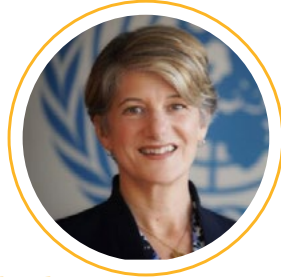
One-Sentence Takeaways

Before concluding the panel discussion, Victoria Samson invited each participant to provide a succinct takeaway from their perspective on the driving factors for space sustainability and a summary of their earlier presentations during the luncheon. The panelists shared the following insights:



“UK’s vision for space sustainability includes regulatory leadership, industry-led standards, international leadership, and sustainable capabilities.”

IAN ANNETT



“Actively engage with the inspirational stories of emerging space nations, and collaborate with them to ensure they incorporate sustainability into their operations from the very beginning.”

ALLISON AREIAS



“Focus on how we communicate this (space sustainability) and make it an issue that goes outside the space sector as we go into the next year.”

REBECCA EVERNDEN



“Focusing on data allows us to have a better and more common understanding.”

JOHN JANKA



“ASAT test debris can affect the space environment and must be a consideration for space sustainability.”

VICTORIA SAMSON



“Data, clear data, and bringing people together in a diverse way.”

JOANNE WHEELER



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