

Key Insights From

**SPACE
DEBRIS
CONFERENCE**

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11-12 February 2024





Key Insights from The Space Debris Conference 2024

The Saudi Space Agency (SSA) organized the Space Debris Conference (SDC2024) in Riyadh from 11-12 February 2024 with the Communications, Space & Technology Commission (CST) as co-host, the International Telecommunications Union (ITU) as a partner, and the United Nations Office for Outer Space Affairs (UNOOSA) as a content partner. It was a groundbreaking event that promised to be a pivotal moment in the global dialogue on space sustainability by bringing together experts, researchers, and thought leaders in the field to discuss and address the pressing challenges of space debris.



SDC2024 was aimed at reviewing global efforts to date, reflecting on an appropriate roadmap to addressing the space debris risk, as well as gathering multiple stakeholders and organizations, with diverse interests and perspectives, to highlight the extent of the space debris problem, reflect on efforts to date, and chart a way forward with an ongoing focus and commitment on addressing this risk.



Given the projected growth of the space sector and the advent of mega-constellations, the risk was poised to increase exponentially. It was therefore imperative to reflect on the appropriate frameworks that were needed to understand the scale of this risk and the mitigation and adoption measures required. SDC2024 aimed at achieving these goals and forging high-level commitments for ongoing initiatives that were targeted at addressing this global challenge.



Securing the Future Growth of the Global Space Economy

50+

**COUNTRIES
AROUND THE
WORLD**

Decision-makers and experts gather on a global platform in Riyadh to discuss and develop strategies to address the challenges of space debris.

260+

**EXPERTS & SPEAKERS
PRESENTING KEYNOTES &
PANELS**

To exchange experiences and knowledge about best practices and new technologies aimed at reducing the risks of space debris and enhancing international cooperation.

SDC2024 Objectives:



Creating & increasing awareness regarding the current scale and growing complexity of space debris challenges that face humanity.



Exploring essential legislative and policy elements that must be considered in addressing the space debris challenge, considering, and building on any prior work.



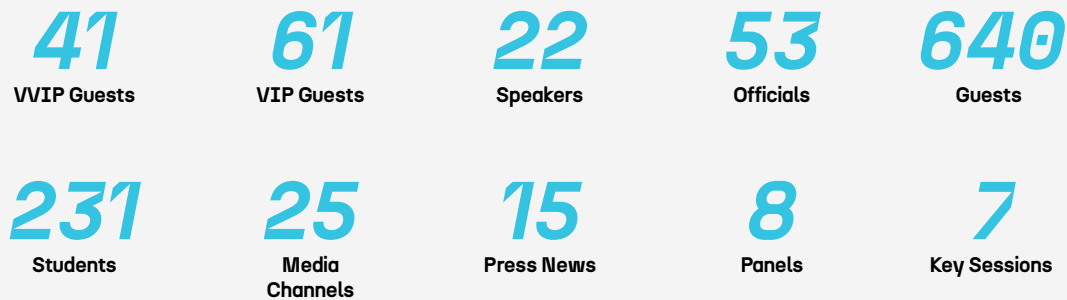
Promoting the creation and development of a multi-prong research focus covering the scale of the problem, appropriate mitigation measures, and associated global governance mechanisms.

These steps represent our path towards achieving a more sustainable and safer space for all humanity.

SDC2024 Conference in Numbers

The SDC2024 Conference, held on 11-12 February 2024, was a significant gathering that boasted remarkable attendance. Among the attendees were 41 VVIP Guests and 61 VIP Guests, along with 22 distinguished Speakers and 53 Officials. The event attracted a total of 640 Guests, among them 231 Students, reflecting a diverse and engaged audience. Media coverage was extensive, with 25 Media Channels and 15 Press News outlets capturing the event's proceedings. Structured around 8 Panels and featuring 7 Keynote Speeches, the conference provided a platform for discussions and insights into the pressing issues of space debris and sustainability.

SDC2024 On-Site



SDC2024 on Social Media



Securing the Future Growth of the Global Space Economy

In the presence of their Excellency's



His Excellency Abdullah bin Amer Al-Swaha

President and Chairman of Board of Directors of Saudi Space Agency



Her Excellency Sarah bint Yousef Al Amiri

Minister of State for General Education and Advanced Technology, Chairwoman of Board of Directors of The UAE Space Agency



His Excellency Mohammed bin Saud Al Tamimi

Governor of Communications, Space & Technology Commission
CEO of The Saudi Space Agency



His Excellency Abdulaziz bin Abdullah Al-Duailej

President of the General Authority of Civil Aviation



His Excellency Ahmed bin Mohammed Al-Suwayan

Governor of the Digital Government Authority



His Excellency Munir bin Mahmoud AL Desouki

President of King Abdulaziz City for Science and Technology



Salem bin Butti Al Qubiasi

General Director of the UAE Space Agency



Doreen Bogdan Martin

General Secretary of the International Telecommunications Union (ITU)



Arte Hula

Director of the United Nations Office for Outer Space Affairs (UNOOSA)



Sherif Sedki

CEO OF Egyptian Space Agency

Agenda

Day 1 “ Policy & Governance ”

Opening Sessions

Keynote 1: Space Debris Mitigation

H.E. Sarah Al-Amiri

Panel 1: Beyond Borders, Beyond Debris

Space Agencies Unite for a Sustainable Space Future

Keynote 2: State of Space Debris Problem

Dr. Daniel Ceperly

Panel 2: Translating Policy into Progress (UNOOSA)

Panel 3: The Role of Licensing Bodies in Curbing Space Debris

Keynote 3: The Future of Space Governance

Kevin O'Connell

Panel 4: Future Regulation and Guidelines

Agenda

Day 2 “ Innovative Solutions ”

Keynote 1: A mission to remove debris from Earth orbit

Luc Piguet

Panel 1: Space Debris Mitigation and Removal

Keynote 2: Space Debris Threats and Sustainability Approaches

Dr. Marshall Kaplan

Keynote 3: Space-Based Space Situational Awareness

Stewart Bain

Panel 2: Navigating the New Frontier: Advancements in Space Traffic Management

Panel 3: Hidden in Plain Sight (CST)

Keynote 4: Space Debris Today and the Opportunities of Tomorrow

Michael Suffredini

Panel 4: Turning The Orbital Rubble



About His Excellency Dr. Mohammed bin Saud Al Tamimi

H.E. Dr. Al Tamimi is the CEO of the Saudi Space Agency and has been the Governor of the Communications, Space, and Technology Commission (CST) since October 2019. H.E. is the Vice President of a research group specializing in wireless networks, next-generation networks, and cloud computing at the International Telecommunication Union in Geneva.

His Excellency is a member of the Arbitration Committee at the European Telecommunication Networks Innovation Forum, an expert on regulation governance, privatization, and competition economics, and an international expert in telecommunication networks and cloud computing.

Opening Speech

His Excellency

Dr. Mohammed bin Saud Al Tamimi

CEO Of the Saudi Space Agency

Key Points

- Over the upcoming 6 years, humans are planning to launch more than 30K satellites, this is almost 3X the current number of active satellites.
- This is not merely a conference to gather experts, this is a call to action!
- International cooperation & collaboration is the name of the game, specifically three areas of global cooperation that could be an immediate step to take:
 1. First, before launching spacecrafts or satellites, well-crafted regulations need to be enforced, including assurances of space debris removal from any future spacecrafts.
 2. Second, during the operation of spacecrafts or satellites, global sharing of data is a necessity. It necessary to develop and implement advanced technology to track, monitor and share data, to minimize any risk of collisions and reduce the creation of new debris.
 3. Third, dealing with current space debris, the participation of the private sector in finding solutions is essential. Today we have pioneering companies and startups to illustrate their abilities and innovative solutions.



I call upon each one of you to join hands, to share your expertise and work together towards finding solutions for safer and more sustainable outer space environment.

Watch Full Talk



Opening Remarks

[Watch Full Talk](#)



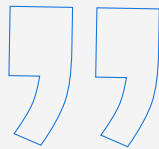
Doreen Bogdan-Martin

Secretary-general of the International Telecommunication Union (ITU)

About

Doreen Bogdan-Martin took office as Secretary-General of the International Telecommunication Union (ITU) on 1 January 2023. As ITU Secretary-General, she aims to drive innovative solutions, maximize ITU's relevance for its 193 Member States, intensify global cooperation on connecting the unconnected, and strengthen the alignment of ITU's programs with the Sustainable Development Goals set out by the United Nations.

As Director of ITU's Telecommunication Development Bureau for a four-year term starting in 2018, she helped put sustainable digital development at the forefront of international cooperation, including with the private sector and civil society.



Our conference today represents a real opportunity to enhance international cooperation and build sustainable decisions that ensure the preservation of the space environment and its fruitful exploitation for the benefit of humanity. Let us all unite in our efforts to achieve a safe and clean space and let us work together to achieve progress in this regard. From Riyadh, let's make international cooperation and common will the driving force for preserving space and using it sustainably for the benefit of all humanity.

Aarti Holla-Maini

Director of the United Nations Office for Outer Space Affairs (UNOOSA)

[Watch Full Talk](#)



About

Ms. Aarti Holla-Maini is the UNOOSA Director, bringing to this position over 25 years of professional experience in the space sector. She maintains responsibility for the Office's management and administration, provides strategic guidance to its work, and ensures that it is implemented in accordance with the mandates of the General Assembly, the Committee on the Peaceful Uses of Outer Space (COPUOS), and the established policies of the United Nations.

Most recently, Ms. Holla-Maini has held the role of Executive Vice-President of Sustainability, Policy & Impact at NorthStar Earth & Space; prior to which she spent over 18 years as Secretary-General of the Global Satellite Operators Association.



We must work together and achieve consensus on agreed laws in the space field. We realize that we will face many challenges as satellite launches continue. We need to accelerate our efforts and focus on our work to overcome the major obstacles and achieve progress in this field.





About H.E. Sarah AlAmiri

H.E. AlAmiri is the UAE Minister of State for Public Education and Advanced Technology and Chairwoman of the UAE Space Agency. In her role as Minister of State for Advanced Technology, H.E. spearheads the UAE Ministry of Industry and Advanced Technology's efforts to empower the adoption of Fourth Industrial Revolution technologies and promote research and development in the advanced science and technology sector, in order to create new industries that drive the shift towards a knowledge economy. As Chairwoman of the Space Agency, H.E. is responsible to oversee the Agency's mandate of guiding the space sector, ensuring its contribution to the national economy and to the UAE's sustainable development. Her Excellency is also the Deputy Project Manager and Science Lead of the Emirates Mars Mission (Hope) at the Mohammed bin Rashid Space Centre (MBRSC).

Watch Full Talk



Opening Remarks

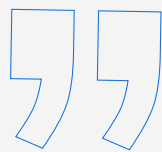
A Summary of "Space Debris Mitigation: Towards a Sustainable Future" Keynote By

Her Excellency Sarah AlAmiri

Minister of State for Advanced Technology of UAE and Chairwoman of the UAE Space Agency

Key Points

- The growing number of satellites in mega constellations, reaching tens of thousands, demands more attention to how we manage to space debris.
- The impacts of the current debris problem are that it threatens to restrict and reduce access to space to numerous spacefaring nations, such as the UAE and Saudi Arabia.
- There's a need for a more robust regime to effectively slow or halt the creation of non-fragmentary space debris.



I look forward to the outcomes of this significant conference, demonstrating the Kingdom's commitment to achieving sustainability for space, its sector, and the trillion valued economy the conference comes in light of the growing increase in space activities and the urgent need for a strong international coalition that enables us to find solutions to address space debris challenges and promote healthy practices in space, ensuring permanent sustainability.

The Panelists

Moderator:

Kamal AlHarbi

Saudi Space Agency
Sector Head of Space
Services

Panelists:

Dr. Val Munsami

Saudi Space Agency
Deputy CEO

Dr. Sherif Mohamed Sedky

CEO of Egyptian Space
Agency

Dr. Travis Blake

Program Officer for Space
Traffic Coordination at
NASA

Christophe Bonnal

Senior Expert of Space
Sustainability at
MaiaSpace

Yasuo Ishii

Vice President at JAXA

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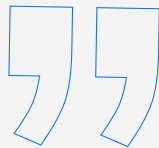


Panel Summary for

Beyond Borders, Beyond Debris: Space Agencies Unite for a Sustainable Space Future

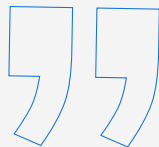
Highlights of The Panel Session

- Exploring inventive solutions for satellite deviation caused by gravitational perturbations is imperative.
- UN-affiliated space organizations hold significant sway in consolidating endeavors and endorsing fledgling enterprises dedicated to space debris mitigation.
- More than 128 million pieces of space debris, each less than a centimeter in diameter, are now believed to be floating above our planet.
- Additional voices from developed societies and the private sector must rally alongside us, advocating for research initiatives aimed at tackling the challenges posed by space debris.



There should be a lot of international collaborating on sharing resources and technologies that will enable us to have proper access to space and ensure the safety of space assets.

Dr. Sherif Mohamed Sedky, CEO of Egyptian Space Agency



There are ecosystem level problems and institutional level problems. Ecosystem level requires policies and strategies to be implemented.

Dr. Val Munsami, Saudi Space Agency Deputy CEO





About Dr. Daniel Ceperly

Dan Ceperly is a prominent advocate for the advancement of new space ventures, innovative space technologies, and the sustainable growth of the space economy.

Serving as the CEO and co-founder of LeoLabs, he established the company with the mission to enhance space traffic safety, bolster space situational awareness, and promote the preservation of the space environment through the dissemination of actionable, real-time information.

Before his tenure at LeoLabs, Dr. Ceperly held positions at SRI International, where he spearheaded initiatives in space debris tracking, served as the Deputy Director of the Oceans and Space Systems Center, and supervised the Allen Telescope Array.

Throughout his career, he has been at the forefront of research and development efforts aimed at advancing technologies for tracking the proliferation of low-cost satellite constellations, emblematic of the recent surge in innovation within the space industry.

Watch Full Talk



Opening Remarks

A Summary of “State of the Space Debris Problem” keynote by

Dr. Daniel Ceperly

CEO of LeoLabs

Key Points

- There is disorganization in low Earth orbit (LEO) due to the increasing number of satellites and debris. Currently, there is about 5000 satellites orbiting the Earth in LEO.
- The number of space debris dominates the number of satellites in space today, with over 12,000-13,000 tracked pieces and hundreds of thousands more untracked, posing significant risks to satellite operations and emphasizing the need for better organization and coordination.
- LEOLABS serves more than 70% of satellites in LEO, providing safety services and alerts about conjunctions.
- There are 3 pillars for building the next generation of space: debris mitigation policies, debris remediation technologies, and space traffic coordination and management services.



Thank you to the Kingdom, represented by the Saudi Space Agency, for hosting this timely conference. Especially since the world is going through the second “commercial” space race, which presents huge opportunities in the space sector. It is important that we protect space now, given the Potential of more than 21 thousand satellites orbiting the Earth. We are required to monitor them to ensure space safety and provide a wealth of data, and there are no national limits to regulate the field.

The Panelists

Moderator:

Aarti Holla-Maini
Director of UNOOSA

Panelists:

Dr. Peter Martinez
Executive Director of the
Secure World Foundation

Dr. Sherif Mohamed Sedky
CEO of Egyptian Space
Agency

Kevin O'Connell
CEO of Space Economy
Rising & Chairman of the
NorthStar USA subsidiary

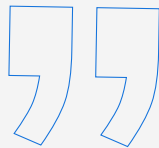
Mike Lindsay
CTO of Astroscale

Panel Summary for

Translating Policy into Progress (UNOOSA)

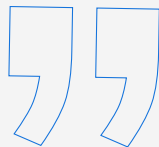
Highlights of The Panel Session

- Utilizing emerging technologies like magnetic fields to mitigate space debris.
- Advocating for the implementation of legislation and international accords to govern the ethical utilization of space, including the accountability of nations for spacecraft-related damages.
- Highlighting the imperative for global collaboration in tackling space-related issues, utilizing international conferences and forums as avenues for achieving this objective
- Sustainability in space hinges upon enhancing capabilities and fostering awareness regarding the significance of reducing space debris and upholding our duty toward preserving the space environment.



The long-term sustainability guidelines have been widely but not yet universally adopted and that's one of the first steps that we can take.

Dr. Peter Martinez, Executive Director of the Secure World Foundation



When it comes to the issue of turning policy into action we must learn from the private sector as to what is being done and what is practical.

Kevin O'Connell, CEO of Space Economy Rising & Chairman of the NorthStar USA subsidiary

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The Panelists

Moderator:

Muryah AlShahrani

Saudi Space Agency
General Director of Ground
Systems

Panelists:

Dr. Majid Albahkali

Director of the Center of
Excellence for Earth and
Space Science at KACST

Dr. Olga Volynskaya

Assistant Professor at PSU

Jorge Ciccorossi

Senior
Radiocommunications
Engineer at ITU

Candace Johnson

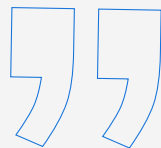
Founder/Co-Founder of
SES

Panel Summary for

Orbiting Order: The Role of Licensing Bodies in Curbing Space Debris

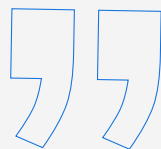
Highlights of The Panel Session

- Highlighting the pivotal role of the Kingdom through its specialized and inclusive conference dedicated to combatting the space debris challenge.
- Underlining the necessity to establish a platform grounded in scientific evidence to tackle the space debris issue effectively.
- Consistently incentivizing pertinent authorities to endorse research endeavors and implement legislative frameworks aimed at bolstering sustainability and safety within the space sector.
- Persistently cautioning launch nations about the hazards posed by small debris to satellites and space personnel, urging prompt action to address this concern.
- Urging all pertinent national and international stakeholders to collaborate in formulating essential standards and regulations to govern space activities.
- Upholding the 1967 Outer Space Treaty as the foundational framework governing all space-related endeavors



States are responsible actors sharing this responsibility with their national space operators, they should take global guidelines & recommendations and translate them into binding Norms.

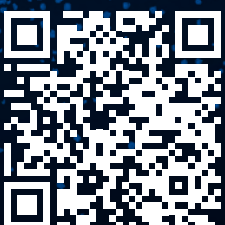
Dr. Olga Volynskaya, Assistant Professor at PSU

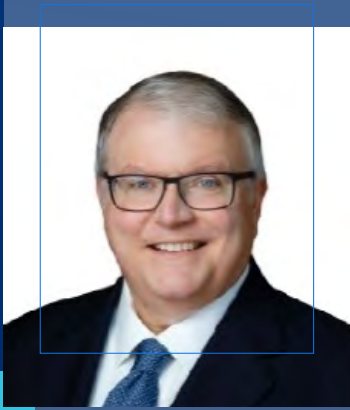


Space sustainability is a collective responsibility and requires Collective efforts.

Jorge Ciccorossi, Senior Radiocommunications Engineer at ITU

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About Kevin O'Connell

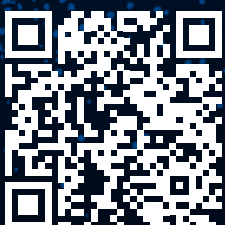
Kevin M. O'Connell is a recognized expert on space commerce, the global space economy, he has focused on space commercialization and technological competitiveness and how to advance them in global markets.

In 2007, he founded Innovative Analytics and Training, LLC, a consulting firm specializing in assessing high-tech market areas including geospatial markets, cloud computing, and cyber analytics.

Mr. O'Connell's most recent role was Director of the Office of Space Commerce (OSC) within the U.S. Department of Commerce. He was the principal architect of outreach to U.S. private space companies to facilitate innovation and encourage increased market growth and viability.

He taught graduate courses in Georgetown University's School of Foreign Service and the RAND Graduate School for many years and has lectured at academic and research organizations around the world.

Watch Full Talk



Opening Remarks

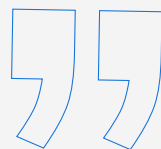
A Summary of "The Future of Space Governance" keynote by

Kevin O'Connell

CEO of Space Economy Rising

Key Points

- The next wave of economic efficiency in space will come from the ability to inspect, refuel and repair space objects once again changing the economics of space for the better.
- Today, investors are paying much more attention to issues like cyber security, space debris and space sustainability when they make investments.
- The focus of policy and regulations for space debris isn't the end of the line for the space economy. Mitigating it will unlock the extraordinary potential for us to leverage in the future.
- The combination of government and private sector interests won't grow unless we deal with these challenges and deal with them now.



We applaud Saudi Arabia for spearheading the drive to unite global endeavors aimed at mitigating the repercussions of space debris, ensuring the sustainability of the space economy. Presently, we observe substantial investment initiatives globally as the space sector, along with robotics and space technologies, thrives. To ensure the peaceful exploration of space, international agreements like the 1967 Outer Space Treaty endeavor to optimize the peaceful utilization of space and curb its militarization.

The Panelists

Moderator:

Waleed Alsaleh

Director of Space
Ecosystem Development
at CST

Panelists:

Dr. Ernst Karl Egon Pfeiffer

CEO of HPS GmbH

Frank Salzgeber

Space Sector Acting
Deputy Governor at CST

Dr. Catherine Doldirina

General Counsel at D-Orbit

Hamzah Abdul Hameed

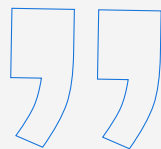
Chair of SGAC

Panel Summary for

Future Regulation and Guidelines

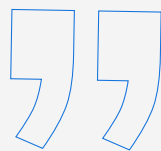
Highlights of The Panel Session

- Need for technical reforms and initiatives to find solutions to the threat of space debris.
- Understanding the importance of preserving space for sustainability and future generations.
- Significant efforts are needed to address the debris challenge and to establish a multi-generational charter aimed at advancing space sustainability.
- Institut incentives to encourage countries and companies to address space risks resulting from misuse in previous decades.



Access to space should be a fundamental right and issue that future Generations are concerned with.

Hamzah Abdul Hameed, Chair of SGAC



Homogeneous regulations are essential to avoid the disadvantages of future fragmented regulations.

Dr. Catherine Doldirina, General Counsel at D-Orbit

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About Luc Piguet

Luc Piguet is the CEO and co-founder of ClearSpace startup aiming to clear up Space debris and build up in-orbit servicing for sustainable space operations. ClearSpace is stemming from a long-term project that began in 2012 at the EPFL Space Center with the aim to develop technologies to capture and deorbit obsolete space objects. In 2019, the European Space Agency (ESA) selected the ClearSpace team to lead a European consortium that will execute the first autonomous debris removal mission. This ESA ClearSpace-1 mission is groundbreaking, leading to a new era of sustainable space operations. Luc studied at EPFL, with a MSc in Electrical Engineering and an Executive Program at Stanford.

Watch Full Talk



Opening Remarks

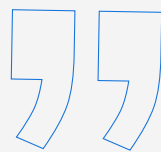
A Summary of “A Mission to Remove Debris from Earth Orbit” keynote by

Luc Piguet

CEO of ClearSpace

Key Points

- There are \$300B+ of satellites in orbit with no servicing infrastructure to support them.
- The problem of space debris is growing exponentially in line with rocketing satellite growth, but so are the opportunities.
- The policies are changing faster than we expected.



The negative impacts of space debris include the disruption of terrestrial services such as the internet and scientific research, as well as its impact on the climate and the economy. This underscores the importance of global solutions to the challenge of removing space debris and necessitates international cooperation to develop and implement the necessary strategies.

The Panelists

Moderator:

Eng. Mishaal Ashemimry
Senior Consultant at Saudi
Space Agency

Panelists:

Dr. Mariam Nauh
VP Economies of the
Future at KACST

Mike Lindsay
CTO of Astroscale

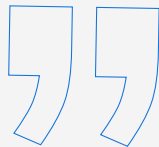
Luc Piguet
CEO of ClearSpace

Panel Summary for

Space Debris Mitigation and Removal

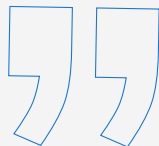
Highlights of The Panel Session

- Direct attention towards the advancement of novel technologies aimed at clearing space debris and enhancing the efficiency of satellites and remote sensing systems.
- Assess and ensure the safe removal of debris through the utilization of robotic technology.
- Shed light on the environmental and economic risks associated with the proliferation of space debris, including potential disruptions to ground services and increased insurance expenses.
- Stress the significance of allocating funds for space debris removal initiatives and the development of regulatory frameworks to govern such endeavors.
- Suggest implementing taxes on satellite operators as a means to promote environmental stewardship and finance space debris removal projects.
- Propose the establishment of a binding international agreement that imposes fees on satellite operators, serving as a mechanism to limit the generation of space debris.



We must ensure that the technologies & missions being developed are self-sustaining, in addition, we need the policies that support it.

Mike Lindsay, CTO of Astroscale



Technologies to remove space debris exist but putting them together to demonstrate removal in space is what's difficult.

Eng. Mishaal Ashemimry, Senior Consultant at Saudi Space Agency

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About Dr. Marshall Kaplan

Marshall H. Kaplan, Ph.D., is a recognized expert in satellite and launch vehicle systems design and Engineering. He has participated in many new launch vehicle and satellite developments and has served as Chief Engineer on two launch vehicle programs.

Dr. Kaplan was a member of the National Research Council's Committee on Reusable Launch Vehicle Technology and Test Program.

In his 40+ years of academic and industrial experience, he has served as Professor of Aerospace Engineering at the Pennsylvania State University, was the Executive Director of a Space Research Institute, and has presented space technology and systems courses in the U.S., Europe, Asia, and South America. In addition to publishing over 100 papers, reports, and articles on space technologies, Dr. Kaplan is an AIAA Fellow and member of the Technical Committee on Space Transportation.

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Opening Remarks

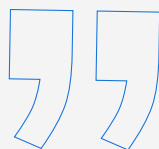
A Summary of “Space Debris Threats and Sustainability Approaches” keynote by

Dr. Marshall Kaplan

Principal at Launchspace Services

Key Points

- The International Space Station (ISS) has conducted 30 debris collision avoidance maneuvers since 1999.
- The real underlying threat and concern is the possibility of devastating collision with satellites.
- Collision Avoidance technologies have limited effectiveness and require satellites to maneuver and use up valuable propellant.
- Without a permanent proactive debris removal & control program the ability to operate in space may diminish over time. In fact, gridlock in LEO could happen in a few years, possibly denying access to space for centuries.



Considering the demonstrated leadership of the Kingdom on this crucial matter, I suggest that the Saudi Space Agency lead a global initiative to launch brainstorming forums with the most prominent global minds and innovative entrepreneurs to explore new technologies for addressing the problem of space debris.



About Stewart Bain

Stewart Bain is an innovator, entrepreneur, aerospace engineer, international business expert and the driving force in the development of NorthStar, the world's first comprehensive Earth & Space Information services platform.

He has been spearheading the commercialization of disruptive aeronautical and space technologies for over two decades. Stewart was part of the original engineering design team for RadarSat 1 and 2 and created the optical systems centre of excellence at CAL Corporation, which commercially developed breakthrough star tracker systems for spacecraft attitude control and optical intersatellite link technologies.

Stewart's energies are devoted to realizing NorthStar as an enterprise to help create a more sustainable and safer environment in Space and on Earth, for his own children, for their generation and for generations to follow.

Watch Full Talk



Opening Remarks

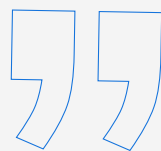
A Summary of "Space-Based Space Situational Awareness" keynote by

Stewart Bain

CEO & co-Founder of NorthStar Earth & Space Inc

Key Points

- Space Situational Awareness (SSA) aids in ensuring the safety and sustainability of our activities in space.
- Northstar's mission is to monitor vast expanses of space, utilizing a space-based system that is not restricted by ground, weather, or atmosphere. This space-based system actively scans space from a low earth orbit that is sun synchronous and observes objects as they pass through.
- The challenge of protecting and preserving the environment of space is something that is not done individually, it is something that must be done as a collective.



Through this impactful conference, we advocate for the establishment of an international space navigation management system to foster a secure and sustainable space environment. Recognizing the distinctive challenges of space, we emphasize the necessity for innovative solutions and global cooperation to ensure safety and sustainability. A unified vision is essential for the future of space exploration and sustainable human advancement.

The Panelists

Moderator:

Lee Annamalai

Director of Space Data Management at Saudi Space Agency

Panelists:

Moataz AbdelAzim

Director at LeoLabs

Dr. Travis Blake

Program Officer for Space Traffic Coordination at NASA

Hamzah Abdul Hameed

Chair of SGAC

Dr. Romain Lucken

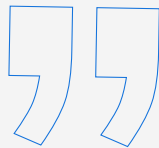
CEO of Aldoria

Panel Summary for

Navigating the New Frontier: Advancements in Space Traffic Management

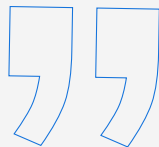
Highlights of The Panel Session

- Establishing global objectives to tackle challenges related to space.
- Developing space traffic management techniques to address issues like space debris.
- Broadening partnerships in space exploration and confronting space-related hurdles
- Harnessing space technology to propel environmental and sustainability initiatives forward.
- Utilizing advancements in space to realize sustainable objectives on Earth.



Balancing technical solutions with policy and regulatory frameworks is complex but essential for ensuring safe and sustainable operations in space.

Dr. Travis Blake, Program Officer for Space Traffic Coordination at NASA



Lack of an international framework for data sharing and transparency in orbital parameters presents a major challenge to deploying SSA technologies.

Hamzah Abdul Hameed, Chair of SGAC

Watch Full Talk



The Panelists

Moderator:

Frank Salzgeber

Space Sector Acting
Deputy Governor at CST

Panelists:

Adam Niewinski

Co-Founder & Managing
Partner at OTB

Kelli Ogborn

VP of Space Commerce
and Entrepreneurship at
Space Foundation

Volodymyr Usov

CEO of Kurs Orbital

Rainer Horn

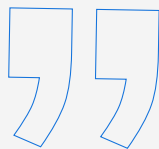
Managing Partner at
SpaceTech Partners

Panel Summary for

Hidden in Plain Sight

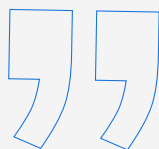
Highlights of The Panel Session

- Participants emphasized the importance of investing in a robust space infrastructure that helps ensure the safety of space operations and deals with various challenges such as space debris management.
- Participants acknowledged the increasing public awareness surrounding topics like rockets and space tourism. They stressed the necessity of directing attention and educational efforts towards these subjects.
- Speakers also emphasized the integration of public and private data into navigation tools to facilitate safe rocket launches and reduce the risk of future collisions.
- There was consensus among speakers regarding the importance of fostering stronger cooperation between countries engaged in space activities. This collaboration is seen as crucial for maximizing opportunities and addressing emerging challenges effectively.
- Participants underscored the importance of investing in a resilient space infrastructure to ensure the safety of space operations and tackle various challenges, particularly space debris management.



In space infrastructure, in space Manufacturing and in space Management are expected to be trending areas in the future.

Adam Niewinski, Co-Founder & Managing Partner at OTB



Repurposing debris into assets is the way to go to solve the space debris issue.

Volodymyr Usov, CEO of Kurs Orbital

Watch Full Talk





About Michael Suffredini

A key leader in the success of the International Space Station, Michael Suffredini is one of the world's few and foremost authorities on the development and operation of space stations. He assembled and heads a world-class team of experts at Axiom developing history's first commercial destination in orbit to realize the vision of a thriving home in space that benefits every human, everywhere. Suff finished a decorated 30-year career at NASA by serving as its International Space Station Program Manager from 2005 to 2015. In that time, he oversaw the development and operation of the 460-metric ton, permanently inhabited international orbiting laboratory. He led the transition of the 15-nation ISS Program from completion of assembly to research and commercial utilization. The list of numerous awards conferred upon him include the President of the United States' Rank of Meritorious Executive and Rank of Distinguished Executive, NASA's Distinguished Service and Outstanding Leadership medals, the National Air and Space Museum Trophy, and the Yuri Gagarin Medal. He is an aerospace engineering graduate of the University of Texas.

Watch Full Talk



Opening Remarks

A Summary of "Space Debris Today and the Opportunities of Tomorrow" keynote by

Michael Suffredini

Co-founder & CEO of Axiom

Key Points

- Best practices regulations and laws are necessary to stem the generation of new space debris however more must be done to eliminate existing debris fields.
- With better resolution of space debris smaller than 10 cm, The risk of collision and damage can be mitigated further.
- Active debris removal capabilities and the infrastructure can take advantage of the same robotic capabilities and vehicles that are envisioned for servicing and refueling satellites.



The space environment has grown increasingly challenging, with the International Space Station facing numerous hazards posed by space debris. To tackle these challenges, three solutions have emerged: implementing legislation and laws to effectively handle debris issues, raising awareness to enhance our comprehension, tracking, and monitoring of space debris incidents, and ultimately engaging in active space debris removal. Addressing these challenges is imperative, as failure to do so could leave humanity on Earth without the technological advancements and progress we have achieved.

The Panelists

Moderator:

Harald P. Luiks

Manager at Saudi Space Agency

Panelists:

Amy Mehlman

VP of Global Affairs and Stakeholder Relations at E-Space

Daniel Faber

CEO of Orbit Fab

Dr. Claire Nelson

Chief Futurist at The Futures Forum

Candace Johnson

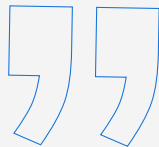
Founder/Co-Founder of SES

Panel Summary for

Turning the Tide on Orbital Rubble

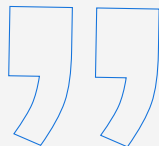
Highlights of The Panel Session

- There is a need to focus on the importance of addressing the challenge of space debris.
- Seeking future solutions to this growing global problem is imperative.
- Through its conference, the Saudi Space Agency was able to foster a collective spirit in the field of space.
- A tribute to the unification of the world and the universe through such events.
- Data sharing is essential for meeting the challenges of tracking space debris.
- Leveraging debris as an essential resource for companies to achieve economic returns contributes to the growth and development of the space economy.
- Motivating efforts toward building a sustainable world requires a shared vision and professional business plans.



The space debris problem as we know is not just a technological problem, but a social problem, and a political problem.

Dr. Claire Nelson, Chief Futurist at The Futures Forum



Sharing of space situational awareness data is essential to know predictively what's going to happen over time.

Amy Mehlman, VP of Global Affairs and Stakeholder Relations at E-Space

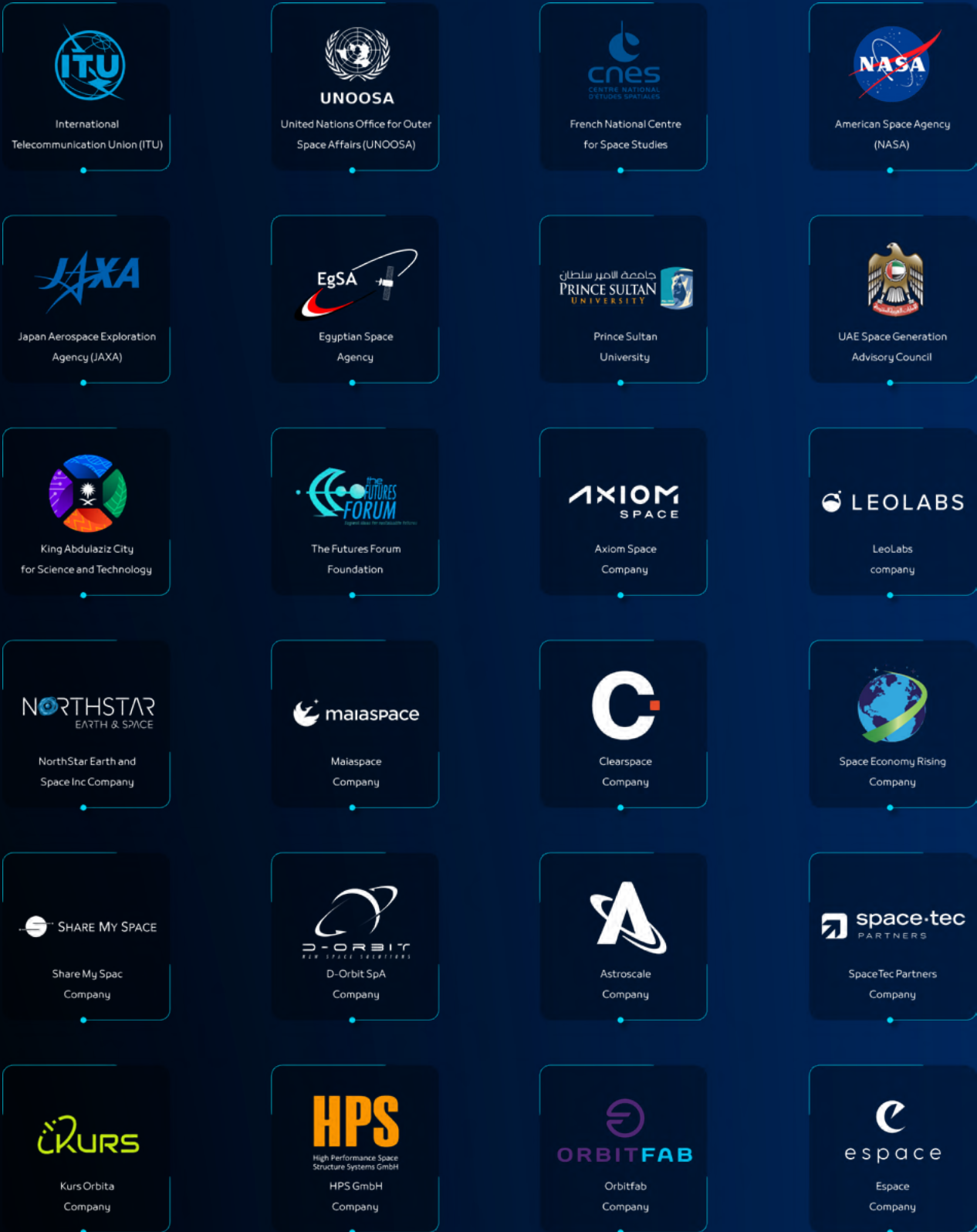
Watch Full Talk



CONCLUSION

The Space Debris Conference 2024, held on 11-12 February 2024, marked a significant milestone in addressing the critical challenges of space debris and ensuring space sustainability. With an impressive turnout including 41 VVIP guests, 61 VIP guests, 22 distinguished speakers, and 53 officials, alongside a diverse audience of 640 guests, including 231 students, the event showcased widespread engagement and commitment to the cause. Media coverage was extensive, with 25 media channels and 15 news outlets capturing the conference's proceedings, amplifying its impact on a global scale. Structured around 8 panels and featuring 7 keynote speeches, the conference provided a comprehensive platform for meaningful discussions and insights into tackling the pressing issues of space debris and sustainability. As the conference concludes, it underscores the importance of collaborative efforts and innovative solutions in safeguarding our shared space environment for future generations, emphasizing the collective responsibility of the global community in addressing this paramount challenge.

Key Insights from The Space Debris Conference 2024



4 2022



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