



ORF KALPANA CHAWLA ANNUAL SPACE POLICY DIALOGUE

SECOND EDITION

New Delhi
February 24-26, 2016



INITIATIVE PARTNERS



EVENT SPONSORS



Programme

Day 1, February 24 (The Viceregal, Hotel Claridges)

18.45-19.00: **Registration**

19.00-19.05: **Welcome Remarks**
Sunjoy Joshi, Director, Observer Research Foundation

19.05-19.10: **Introduction**
Rajeswari Pillai Rajagopalan, Senior Fellow and Head, Nuclear and Space Policy Initiative, Observer Research Foundation

19.10-20.30: **State of Play of the Outer Space Regime**
This panel will feature representatives from the space and security communities who will assess the state of play of the governance of outer space. The contemporary trend of using soft law approaches for international initiatives on space sustainability over the development of hard law will be examined. While the international mandate for governance of outer space is loosely constructed, the challenge of harmonizing national policies and practices of all spacefaring nations will be addressed. For a better assessment of the contemporary efforts, elements of current and potential governance frameworks such as the UN COPUOS' Long-Term Sustainability Working Group, United Nations Group of Governmental Experts (UN GGE), the Treaty on Prevention of the Placement of Weapons in Outer Space (PPWT), and the International Code of Conduct (ICoC) for outer space activities will be examined.

Chair: Victoria Samson, Washington Office Director, Secure World Foundation
Frank Rose, US Assistant Secretary of State, State Department
Theresa Hitchens, Senior Research Scholar, Center for International and Security Studies at Maryland
Cesar Jaramillo, Executive Director, Project Ploughshares
Sergio Marchisio, Full Professor of International Law, University La Sapienza of Rome
Abhishek Malhotra, Managing Partner, TMT Law Practice
Rakesh Sood, former Special Representative to the Prime Minister on Disarmament and Non-Proliferation

20.30-22.00: **Dinner**

Day 2, February 25 (Conference Hall, ORF Delhi Office)

10.00-11.30: Emerging Threats in Outer Space

With growth in humanity's reliance on outer space for a variety of services, the susceptibility to various threats has also multiplied. This panel will identify some of the major threats confronting human activities and interests in outer space. With militaries around the world utilising space assets for a variety of passive military applications, the debate today focuses on weaponisation, including issues around defining what a space weapon is. Alongside the issues of placement of weapons in outer space and space debris, there is now a newer threat of cyber warfare emerging in outer space. The panel will seek to identify these threats and their implications in the backdrop of self-defence logic. The panel will also examine available solutions and assess their limitations, while ideating ways through which the threats discussed can be better managed.

Chair: Varun Sahni, Professor, Centre for International Politics, Organization and Disarmament (CIPOD), JNU

Victoria Samson, Washington Office Director, Secure World Foundation

Kevin Pollpeter, Senior Analyst, Defense Group Inc

Rajeswari Pillai Rajagopalan, Senior Fellow and Head, Nuclear and Space Policy Initiative, Observer Research Foundation

Patricia Lewis, Research Director, International Security at Chatham House

Madhulika Guhathakurta, NASA Headquarters (TBC)

Jean-Francois Bureau, Director of Institutional and International Affairs, Eutelsat (TBC)

11.30-11.45: Tea/Coffee

11.45-13.15: Regional and International Cooperation – Realities, Challenges and Prospects

Emergence of new space players and simultaneously the growth in the need for services provided via outer space in different parts of the world has resulted in the establishment of regional bodies on space cooperation. While such groupings in Africa, the African Group, and in Latin America, the Latin American and Caribbean Group (GRULAC), have been fairly effective, the groupings in Asia have had certain setbacks. In the Asian context, the challenge has been from the fact that two separate groupings, under the leadership of China and Japan, cover countries from the same region, resulting in the lack of cooperation among Asian countries. Also important in this context is the impact of the international or regional partners' strategic trade controls and export policies on the potential for cooperation. This panel attempts to examine different models of regional cooperation and assess their achievements as well as limitations. The challenges facing the Asian groupings, for instance, will be identified and debated. The ways to mitigate the delays caused by strategic trade controls and work with the regulatory bodies to maximize success will also be examined.

Chair: CSR Murthy, Chairperson, Centre for International Politics, Organization and Disarmament (CIPOD), JNU (TBC)

Brett Biddington, Founder, Biddington Research Pty Ltd

Kazuto Suzuki, Professor, Public Policy School, Hokkaido University

Salem Humaid Al Marri, Assistant Director General, Emirates Institute of Advanced Science and Technology (EIAST)

Ajey Lele, Asst. Director, Institute for Defence Studies and Analyses

Matthew S. Borman, Deputy Assistant Secretary of Commerce for Export Administration, US Department of Commerce

13.15-14.15: Lunch

14.15-15.00: Spotlight Speaker

A. Sivathanu Pillai, Honorary Distinguished Professor, ISRO;

Former Chief Controller, R&D, DRDO; Former CEO & MD of BrahMos Aerospace

“Leap-frog in Space Industry”

15.00-15.15: Tea/Coffee

15.15-16.45: **Increasing Private Sector Participation—What NewSpace Can Make in India?**

India's space programme has come a long way since its inception and ISRO should undoubtedly be lauded for this. However, time has come for a surge in the growth trend established by ISRO. Leading market research studies project that more than 1,800 satellites will be ordered and launched over the next decade, generating around \$300 billion across global markets. India could capture a significant share of this expanding global space industry through greater involvement of its private sector entities. It has inherent advantages like the availability of skilled workforce, a stable and business-friendly government, positive investor climate, and low cost of operations. Initiatives such as 'Make in India' only reinforce the call for greater commercialisation of the industry. With NewSpace startups emerging out of India, this sector has the potential to emerge as the third technological success front following the successes of the IT and Biotechnology. The panel will explore the contribution that NewSpace can make, as also explore Public-Private Partnership (PPP) models as a part of the need for developing a strong private industry ecosystem for both upstream and downstream products and services.

Chair:

Joyeeta Chatterjee, Project Manager, Dentons (TBC)

Sanjay Nekkanti, Co-Founder, Dhruva Space

Susmita Mohanty, CEO, Earth2Orbit (E2O)

Nakul Kukar, Team Indus (TBC)

Vidya Sagar Reddy Avuthu, Researcher, Observer Research Foundation

Jacob J. Gullish, Senior Economic Advisor, ICT and Trade at U.S. Embassy, New Delhi

16.45-17.00: Tea/Coffee

17.00-18.30: **Derivatives from Space: Mapping Scope of Downstream Applications**

Keeping in mind India's initial vision of space technology as an aid to its socio-economic development, ISRO charted application-oriented programmes in the fields of remote sensing, meteorology and positioning and navigation system. Weather forecasting has remained critical for agriculture and irrigation planning as well as mitigating the adverse effects of natural disasters. The Geographical Information Systems (GIS) too has played a

key role in urban planning, industrialization, resources management, disaster response as well as sustainable development. Putting in place the IRNSS, ISRO is set to soon provide indigenously developed regional positioning and navigation services that will advance India's capabilities in a significant way. Several government departments are looking to increase the scope of these downstream applications in their work planning and execution. These services have also been commercialized enabling entrepreneurship, skill development and employment opportunities. In this context, this panel will explore the development, infrastructure, applications and policy aspects of three critical derivatives of India's space programme viz., weather forecasting, GIS and navigation systems.

Chair:

Jaya Singh, Director, BKC Weathersys Pvt. Ltd

Indranil Sarkar, Senior Vice President, Express Weather

Prateep Basu, Analyst, Northern Sky Research

Rajaram Nagappa, Visiting Professor, National Institute of Advanced Studies (NIAS)

Mukund Rao, Adjunct Faculty, National Institute of Advanced Studies (NIAS)

Paul Brown-Kenyon, CEO, MEASAT

ORF-USIBC Dinner Panel (Diwan-I-Am, Hotel Taj, Mansingh)

18.45-19.00: **Registration and Drinks**

19.00-19.05: **Opening Remarks**

Sunjoy Joshi, Director, Observer Research Foundation

19.05-19.15: **Keynote Address**

Col RS Rathore, Minister of State, Ministry of Information and Broadcasting (TBC)

19.15-19.25: **Special Address**

Richard Verma, US Ambassador to India

19.25-20.15: **US-India Collaboration & Innovation: Exploring the Potential of Satellites for Digital India**

With initiatives like Digital India driving reform from the Centre to the masses, the question one must ask is will one technology provide connectivity to 100 percent of the population. Fiber and Cellular services are suitable where population is dense but remote areas will need satellites to ensure ubiquitous coverage. Advancements in satellite technology allow for many Gigabits of throughput via a single space asset and if we have to ensure future proof connectivity, the National policies must account for all forms of satellite connectivity. This panel aims to discuss the key policy issues surrounding the use of satellites for Digital India initiatives. While the objective of such a policy should be to leverage home-grown capabilities to the maximum extent, it might be easier and more sustainable to collaborate with global projects that can potentially provide connectivity services to rural India.

Chair: Debashish Bhattacharya, Co-Chairman, Satcom & Broadcasting Committee, Broadband India Forum

Sriram Jayasimha, Chairman, Signion Systems
K R Sridhara Murthi, Adjunct Faculty, NIAS

20.15-22.00: Dinner

Day 3, February 26 (Conference Hall, ORF Delhi Office)

10.00-10.30: Spotlight Speaker
Dava Newman, Deputy Administrator, NASA
“NASA’s Perspectives on Future Explorations - Journey to Mars”

10.30-11.00: Spotlight Speaker
James Green, Director, Planetary Science Division, NASA
“Why Mars?”

11.00-11.15: Tea/Coffee

11.15-12.45: **Role of Policy in Transponder Availability for Broadcasting & Broadband Sector**
The Comptroller and Auditor General of India released Report 22 of 2014 on the Management of satellite capacity for DTH service by Department of Space. The report brought to light the severe capacity crunch faced by the Broadcasting sector, starting with DTH operators but extending to all broadcasters and broadband service providers that require Ku-band capacity. On the broadband side, advancements in technology allow for many Gigabits of throughput from modern satellites. National policy must take into account all forms of capacity given their importance to initiatives like Digital India. The first recommendation of the CAG report was for the Department of Space and the INSAT Coordination Committee to frame a transparent policy for allocation of satellite capacity. This panel aims to identify the key issues that such a policy should address including satellite capacity allocations, Ku-band availability and short term and long term strategies for domestic and foreign satellites. In addition, the panel also aims to identify measures for increasing the transponder capacity by opening C and S band communication channels. While the policy should aim to bring Indian users back to the INSAT/GSAT system but given inherent challenges, the policy should also provide an opportunity for the private sector to contribute in improving transponder availability.

Chair: Prashant Butani, Broadband India Forum
K Krishna, CTO & Regulatory Head, Hughes Communications India Ltd.
Harit Nagpal, Tata Sky (TBC)
T S Shoba, Director (Tech. & Services), Antrix Corporation Ltd. (TBC)
Govindrajan, Anisara Space
Smita Jha, Leader, Entertainment and Media Practice India, PricewaterhouseCoopers Pvt. Ltd
John Medeiros, Chief Policy Officer, CASBAA
R Jaya, Joint Secretary, Ministry of Information & Broadcasting, Government of India (TBC)

Himanshu Patil, Chief Operating Officer, Videocon D2H

12.45-13.45: **Lunch**

13.45-15.15: **Shaping the Debate on India's National Space Policy**

India is yet to have a declared space policy. As India continues to expand its footprint in outer space, the need for a clearly articulated policy is real. The growing outer space utilization across multiple domains including military and national security, scientific and technological, and economic and commercial makes the case for a debate involving all the different stakeholders. Such a debate could contribute to the formulation of a broader national space policy as well as sector specific policies that would act as enablers for an efficient pursuit of outer space. This panel will first and foremost articulate the need to have a declared space policy, followed by the need for sector-specific policies including in the area of military.

Chair: Rajewari Pillai Rajagopalan, Senior Fellow and Head, Nuclear and Space Policy Initiative, Observer Research Foundation

M Matheswaran, President, Aerospace Business, Reliance Defence Limited
Hughes (TBC)

Ashok G. V., Partner, TMT Law Practice

Narayan Prasad, Co-Founder, Dhruva Space

Daniel Porras, Associate, LMI Advisors

15.15-15.30: **Tea/Coffee**

15.30-16.30: **Valedictory Address**

Capt. Sunita Williams, NASA Astronaut