



Department of Science
and Technology
Government of India

India Japan Geospatial & Space Business Summit **Hyderabad International Convention Centre (HICC), INDIA** **November 16, 2022**

Minutes of the Round Table Discussion

Topics:

- Policy Impact and Ease of Doing Business: An Indian Perspective
- India-USA Geospatial & Space Technology Collaboration: Opportunities for Industry
- Technology Transfer and Make in India: Opportunities and Potential

Participants:

- Dr Prakash Chauhan, Director, National Remote Sensing Centre (NRSC), ISRO, Government of India
- Shri. A Arunachalam, Director (Technical & Strategy), New Space India Ltd
- Kaname IKEDA, President, RESTEC – Geospatial Perspective
- Dr Motoyuki Arai, Founder & CEO, Synspecive
- Kai Umino, President, Topcon Positioning Asia, Member of Topcon Group
- Shri. A Arunachalam, Director (Technical & Strategy), New Space India Ltd
- Dr Pavuluri Subbarao, CMD, Ananth Technologies Ltd
- Chandru Badrinarayanan, Chief Operating Officer, Blue Sky Analytics
- Sreeramam GV, CEO, NeoGeoinfo Technologies Private Ltd
- Abhay Swarup Mittal, CEO, Sky Map Global
- Abhishek Malhotra, Managing Partner, TMT law Practice

GWCC Secretariat

- Lt Gen (Dr) AKS Chandele, PVSM, AVSM (Retd), Chairman, GWCC
- Dr Rajeshree Dutta Kumar, Vice President, Programs & Partnerships, GWCC

Discussion Points

Part 1 - Welcome and Introductory Note

- Lt Gen (Dr) AKS Chandele welcomed all the Panelists and Delegates for joining the **1st India Japan Geospatial & Space Business Summit** at Hyderabad, India. He gave a detailed account of the rationale and purpose of establishing GWCC, which is promoted by Geospatial World, with an objective to create a platform facilitating trade and commerce globally in the domains of Geospatial and Space Technologies.
- He further shared with the august participants that the objective of the Bilateral Business Summit on Geospatial and Space between India and USA was to initiate a business dialogue

on trade and commerce between the representatives of both the countries from Government, Industry, Civil society and academia.

- The Summit progressed with a brief self-introduction of all the panellists. The Summit was designed to be interactive and it witnessed an open dialogue amongst all the attendees.

Part 2 – Policy Impact and Ease of Doing Business

1. At the policy level, the space activities are comprehended in two spheres - a) Upstream and b) Downstream applications. Government of India (GoI) has opened up space and geospatial segments for the private sectors some two years back. While Indian Space Research Organization (ISRO) will focus on research and development, the private sector would be bringing in production and manufacturing capabilities. ISRO would carry out capacity building exercise in Space domain through the development of new technologies and capabilities. In order to enhance utilization and maximize benefits from the space assets, Department of Space (DOS) decided to change the approach from "Supply Based Model" to "Demand Based Model" by setting up two organizations:
 - a) New Space India Ltd (NSIL), was founded in 2019, has been set up to act as the aggregator of user requirements and obtain commitments. NSIL would take ownership from DOS for operational launch vehicles, commercialize launches, satellites, and services. NSIL is mandated to work around 4 pillars - role of government as enabler, encouraging the youth resources, space sector as the resource for the common man, collaborating and partnering with various stakeholders. NSIL is, currently, focusing on Space reforms 2020. 200 Start-ups are already registered under NSIL.
 - b) Indian National Space Promotion and Authorization Center (IN-SPACe), an independent body, was set up not only to oversee the space activity of the private sector but also to handhold and share ISRO's facilities with them as ISRO has opened up its labs, testing facilities and quality facilities to private companies so that they don't have to invest in infrastructure.
2. The Government is open to foster partnerships with the private sector stakeholders. Example - Amazon web cloud services are being used between NASA and ISRO. GoI has initiated various commercial activities on ground by providing ground station support to the Space Start-ups.
3. India and Japan have been Space faring nations. Lunar Polar Exploration (LUPEX) Mission is a joint robotic lunar mission of the ISRO and the Japanese Aerospace Exploration Agency (JAXA). The mission aims to send a lunar rover and lander to explore the South Pole region of the moon by 2024. The ISRO will provide the lander, while JAXA will be responsible for the H3 launch vehicle and the rover. Rover is going to be landed in the south-pole which is a permanently shadowed region with large water reservoir and water ice. Apart from the LUPEX Mission, the two agencies have also agreed to explore opportunities for cooperation in "space situational awareness and professional exchange program."
4. ISRO and JAXA reviewed their cooperation in earth observation and satellite navigation in March 2021. Both the agencies signed an 'Implementing Arrangement' for collaborative activities on rice crop area and air quality monitoring using satellite data.

Part 3 - Opportunities for Industry

There are many areas of opportunities between India and Japan on building trade and commerce relations in Geospatial and Space. The panellists discussed on various segments:

1. It is necessary to leverage on the capabilities of both countries with regard to Geospatial and space domains. Japanese technology advancements and Indian needs may be married together.
2. The ecosystems needs to be comprehended well. Geospatial is a common layer and is all pervasive and offers multitude of data. Then there are additional layers of industry and agriculture. There is one more layer, which is the layer of adoption of technologies. Once these layers have been understood, then the technologies and applications can be used in other segments like Construction.
3. With regard to downstream applications, there is a need to look at the impact of climate change leading the demand of clean and high frequency data.
4. The new age technologies like machine automation have a greater role to help in agriculture data for contraction, positioning and automatically shaping the ground. India, as a market, can be presented to the Japanese Industries that are looking for opportunities.
5. There two countries need to work collaboratively on leveraging the technologies that help in capturing, mapping and modelling the data available. Data plays a crucial role in advancing Smart Agriculture initiatives.
6. There are opportunities in the following areas for both the countries: a) Satellite data; b) Dependency on optical data; c) More requirement of Synthetic Aperture Radar (SAR) data; d) Continuously Operating Reference Stations (CORS) systems – cooperation.
7. Global Satellite Mapping of Precipitation (GSMaP), developed in Japan towards the the Global Precipitation Measurement Mission GPM mission, can be used for recording rainfall activities, flood forecasting model. Fresh flood scenario can be generated. There is a greater need for Monitoring of weather patterns and forecasts with better accuracy.

Part 4 - Key Recommendations & Way Forward

The recommendations were directed and focused:

1. It has been observed that in most of the cases, Japan has been providing capabilities in technology and capacity building. India, on the other hand, has either been the user market or has been providing human resources support. Indian companies will like to explore Japan as a market for building trade and commerce in Geospatial and Space technologies.
2. Japan has been helping with lots of data in automation market and there is a need for scalability. Under the Smart City initiative, it is pertinent that India should have strong trade relations in the automation sector for monitoring the cities on a regular basis.
3. There are many areas where the Space data can be used in significant ways: a) vegetation changes, b) water changes and c) building. These are critical combining SAR with Optical.
4. It is very important that the right data is generated. There is a need to have the tools and technologies that generate analysis ready data. There is also an opportunity for both the countries to exchange technologies based on AI and Deep learning data models and thereby implementing them correctly with qualified information.
5. In order for a flawless trade facilitation, there is a need to create regulatory environment. We should have bilateral agreement on technology transfers and collaborative research in Geospatial and Space.
6. The need of the hour is to have a Future Skills Platform with online contents available. The Industry -Academia partnerships need to be encouraged to make the communities of geospatial and space future ready. There is a huge scope for new initiatives. Industries of all scale and start-ups have significant role to play.