



INDIA - USA GEOSPATIAL AND SPACE BUSINESS SUMMIT **Hyderabad International Convention Centre, Telangana, INDIA** **November 15, 2022**

INTRODUCTION

Opportunities in Geospatial and Space Ecosystem

The Geospatial industry is emerging as the next 'Big Opportunity' worldwide, both as an 'advancing market in itself' as well as 'augmenting business processes' of mainstream IT, Engineering and Autonomous industries. 'Data Insight' is today the driving wheel of the knowledge economy, penetrating and integrating across workflows and processes of every industry. Data serves as 'oil' to the knowledge economy resulting in economic business models, greater efficiency, productivity, transparency and compliance. Therefore, geospatial industry would continue to provide accurate and rich foundation to data infrastructure and increasingly add the 3rd dimension to 'everything we do' leading to 'geospatial by default' embedded in digital twin and metaverse impacting how humans interact with the digital and physical world in near-real-time.

Increasing number of countries in the Asia Pacific region feel a compelling need for new thinking for space strategies and space activity is one of the major drivers of security systems. Many are also aspiring to acquire indigenous capabilities for space activities. Moreover, increasing private/commercial activities are seen in this region resulting in the growth of competitive market for technology, applications and services. Many have been actively using space systems like communication and remote sensing satellites to meet various social needs, disaster monitoring, natural resources management, tele-education, tele-medicine, national communication, navigation services etc.,

Geospatial Industry and World Economy

Global Geospatial Market size is estimated to be US\$ 452 billion in 2022 and it is forecasted to grow at 14.61% CAGR to be US\$ 681 billion by 2025. Thereafter it is expected to grow at much faster rate of 16.1% CAGR post 2025, taking it to US\$ 1.44 trillion by 2030. The current growth rate is driven by technology innovation, integration of workflows, and augmentation of spatial analytics in business processes.

As geospatial industry is maturing and mainstreaming, associated trade and commerce is gaining momentum too, duly augmented by public policy reforms towards commercialization and industrialization of geospatial technology and infrastructure globally. There have been several policy initiatives towards opening up of data and facilitation of private sector engagement through incubation programs. This has played a key role in scalability of applications and maturing of user adoption levels. However, growing demand of geospatial services and harnessing huge business potential would require greater partnerships with commercial enterprises, and therefore it is imperative for progressive governments to play a proactive role in developing 'geospatial infrastructure' and creating a conducive and enabling business environment.

COOPERATION BETWEEN INDIA AND USA

Historically, India and the United States have had a long-standing commitment to qualitatively transform their strategic business partnership, particularly by investments and commitments, in technology knowledge sharing. The India–United States (US) partnership—pivotal in maintaining international security and order—could yet be the defining one for this century. The US is India's most comprehensive strategic partner, and

cooperation between the two extends across multiple areas such as trade, defence, multilateralism, intelligence, cyberspace, civil nuclear energy, education, and healthcare. As the two nations venture into a new decade, they must articulate a new agenda for cooperation in the Indo-Pacific region which they are both committed to keeping “free and open”. The sectors that will be key to shaping the arc of a strong Indo-US relationship in the years ahead are the following: emerging technologies; national security and defence cooperation; counterterrorism; and trade.

Beyond defence ties, the relationship has begun expanding in scope from the bilateral to the multilateral while embracing a wider range of issues that include: civilian nuclear cooperation and nuclear non-proliferation; infrastructure financing; the production and delivery of COVID-19 vaccines; humanitarian aid and disaster relief; peacekeeping and education; space and cyber security; countering terrorism and extremism; governance of the oceans; and promoting a free and open Indo-Pacific and the rules-based order. Meanwhile, two multilateral strategic dialogues that have gained prominence in recent years are the Quad grouping (of India, Australia, Japan, and the US) revived in 2017, and the new West Asian Quad or I2U2 (comprising Israel, India, United Arab Emirates, and the US) inaugurated in 2021. The Quad has become a premier format for India and the US to pursue targeted multilateral cooperation with like-minded democracies while the West Asian Quad’s focus on technology cooperation carries unique potential.

The 2+2 Ministerial Dialogue (the last Dialogue hosted by US in April 2022) between the US Secretaries of State and Defense and their Indian counterparts is the premier recurring dialogue mechanism between the United States and India. In addition, the United States and India cooperated in dozens of bilateral dialogues and working groups, which spanning from space and health cooperation to energy and high technology trade. These include the U.S.-India Counterterrorism Joint Working Group, Strategic Clean Energy Partnership, Climate Action and Finance Mobilization Dialogue, Cyber Dialogue, Civil Space Working Group, the Education and Skills Development Working Group, Trade Policy Forum, Defense Policy Group and Counter-narcotics Working Group.

Economic Relations

In 2021, overall U.S.-India bilateral trade in goods and services reached a record US \$157 billion. United States is India’s largest trading partner and most important export market. Many U.S. companies view India as a critical market and have expanded their operations there. Likewise, Indian companies seek to increase their presence in U.S. markets and at the end of 2020, Indian investment in the United States totalled \$12.7 billion, supporting over 70,000 American jobs. The nearly 200,000 Indian students in the United States contribute \$7.7 billion annually to the U.S. economy.

International Cooperation

India and the United States cooperate closely at multilateral organizations, including the United Nations, G-20, Association of Southeast Asian Nations (ASEAN) Regional Forum, International Monetary Fund, World Bank, and World Trade Organization. The United States welcomed India joining the UN Security Council in 2021 for a two-year term and supports a reformed UN Security Council that includes India as a permanent member. India is an ASEAN dialogue partner, an Organization for Economic Cooperation and Development partner, and an observer to the Organization of American States. Together with Australia and Japan, the United States and India convene as the Quad to promote a free and open Indo-Pacific.

India - USA Space Technology Cooperation

Much of the robust partnership between India and the United States in the geospatial sector is exemplified by the initial scientific exchanges and joint projects in the field of space technology. Today, this cooperation has extended significantly with the ongoing earth observation mission – the NASA-ISRO Synthetic Aperture Radar (NISAR) project, which aims to gain a better understanding of three Earth Science domains– changing ecosystems, deformation of Earth’s crusts, and cryosphere sciences. Under this project, in true spirit of collaboration and cooperation, NASA is providing the mission’s L-band synthetic aperture radar, a high-rate communication subsystem for science data, GPS receivers, a solid state recorder, and payload data subsystem, while ISRO is providing the spacecraft bus, the S-band radar, the launch vehicle, and associated launch

services. The mission is set for launch in late 2022 or early 2023 from ISRO's Sriharikota spaceport in Andhra Pradesh in southern India on India's Geosynchronous Satellite Launch Vehicle (GSLV-II).

Furthermore, in 2015 India launched an American satellite from its trusted launch vehicle – the Polar Satellite Launch Vehicle (PSLV). Since then, U.S.-India space cooperation has intensified at a brisk pace, particularly involving the American private sector, which has found India's space launch services attractive and economical. Companies such as Google, Raytheon, Spire Global, Planet, etc., have actively launched their satellites through India's PSLV. By 2021, India's PSLV had approximately launched 243 satellites of U.S. space companies.

Both the countries have also developed a deep relationship in weather systems and applications using earth observation data. They are also cooperating in the area of Satellite Navigation (SatNav) wherein the United States Congress has initiated the idea of designating the Indian Regional Navigation Satellite System (IRNSS)-operational name NavIC- as an allied system with underlying objective of developing a multi-national SatNav system. In addition, America's private sector companies, such as Qualcomm Technologies have concluded agreement with ISRO to support NavIC's geolocation capabilities in its chipset platforms for better mobile services and to further develop ISRO's capacities. These space collaborations and India's liberalized Space FDI policy will encourage business and enable U.S. space companies to expand and invest in India with an intent to ensure a sustained engagement.

Defense/ Geospatial Intelligence Cooperation

Both the Indian and the U.S. governments have worked towards enhancing bilateral cooperation in high-technology trade through their Defense arms. In 2020, the Defense Minister of India and the Secretary of Defense of the United States finally signed the Basic Exchange and Cooperation Agreement (BECA) for geospatial cooperation during the U.S.-India 2+2 Ministerial Dialogue held in New Delhi, India to discuss the bilateral defense issues. The BECA agreement, the third of three basic agreements after Logistics Exchange Memorandum of Agreement (LEMOA) in 2016 and Communications Compatibility and Security Agreement (COMCASA) in 2018, is aimed at enabling interoperability of forces and exchange of sensitive and classified information. While the other two agreements are non-geospatial in nature, the BECA Agreement defines geospatial-intelligence information (GEOINT). It comprises geodetic, geomagnetic, topographic, hydrographic, cartographical, bathymetric, and similar essential information data packets. The items include maps; nautical and aeronautical charts; geospatial information and data like geodetic, geophysical, geomagnetic, and gravity data.

Cooperation in Commercial Geospatial Trade and Commerce

India exports more than USD 80 billion in IT and IT-enabled services globally, and imports approximately USD 50 billion in the same from all over the world. The United States, the biggest market for Indian IT and IT enabled services exports and imports, accounts for 60-75% of the exports and imports globally. This is the case for geospatial trade and commerce as well.

United States continues to be the largest trading partner of India. Of the total USD 1.45 billion geospatial technology and geospatial-enabled services exports by India globally – the United States accounted for 83.34% of the exports in 2021 – i.e., USD 1.21 billion in geospatial solutions and services exports. Similarly, out of the total USD 0.37 billion India imported in geospatial technology and geospatial enabled services, imports from the United States alone were worth approximately USD 0.33 billion. Thus, from a geospatial stand point – the trade and commerce between the two countries continues to be strong and much opportunity lies for both India and the United States against the backdrop of strategic policy engagement, and bilateral agreements.

GEOSPATIAL WORLD CHAMBER OF COMMERCE

Geospatial World Chamber of Commerce (GWCC) is a non-profit global organization. Headquartered and registered in India, GWCC is promoted by 'Geospatial World' with a vision to promote trade and commerce globally as we all know that Geospatial knowledge serves as foundational infrastructure for sustainable socio-economic development and the same provides big boost to international trade and commerce.

The objective is to focus on B2B platforms at national, bilateral, regional, and multilateral levels with an aim towards a) connecting geospatial and space industries with mainstream political and economic leadership; b) towards facilitating growth of trade and commerce of Indian geospatial industry and space industries with primary partner countries of India in the context of evolving geo-political world order. GWCC strives to facilitate open trade and commerce, and work towards developing level playing fields, and ease of doing business practices for commercial companies at national, regional and global levels.

Rationale and Objectives

There is a need to have a comprehensive 360 degree view, equipped with holistic approach, and combined efforts of leadership towards mainstreaming and harnessing the growth potential of geospatial and space industries. Like other mature industries, it is time that geospatial industry began to work towards advancing and facilitating trade and commerce globally. Momentum built by public policy reforms needs to be augmented by trade and commerce strategies. There are several institutions that are focusing on professional networks and policy developments globally, but the time has come when the thought leaders of geospatial and space industries work together towards advancing geospatial trade and commerce globally. Since geospatial and space industries are closely linked with security and sovereignty sensitivities, there lies greater need for cautious and constructive engagement with governments as well as trade and commerce institutions. It is important to adopt credible and trusted processes of engagement with political and commerce institutions.

Core Objectives

1. Promote, facilitate, advance, and protect interest of global geospatial and space business communities;
2. Draw plans and projects for encouraging the growth of trade and commerce worldwide;
3. Advise Governments on matters relating to commerce, trade and industry;
4. Collect and share important information about industry, market and policies to its members;
5. Assist Governments in policy development and consultations on budgetary and procurement provisions;
6. Bring to the notice of the Government the impact of various laws and regulations on business;
7. Facilitate technological development through partnerships between academia, research, government and industry;
8. Make the members aware of latest developments in technology, marketing, financing, human resources, etc.;
9. Establish chapters in various countries and develop and explore the areas where businesses can participate and cooperate.

Core Areas of Engagement

1. Geospatial and Space Infrastructure;
2. Research, Innovation, Incubation of Startups;
3. FDI and Joint Ventures in Geospatial and Space companies;
4. Training and Workforce Development;
5. Deployment of Space and Geospatial Technologies in Smart Cities, Infrastructure, and Security.

INDIA – USA GEOSPATIAL AND SPACE BUSINESS SUMMIT

The possibilities and opportunities that exist today for geospatial trade and commerce to grow between India and the United States are tremendous. Both countries are open to collaboration and bilateral agreements for technology transfer and knowledge sharing. Considering India and the United States share common national priorities and objectives driven by international peace and a commitment to maintain rules-based world order, the geospatial relations will continue to grow by leaps and bounds – not only limited to space, defense, and geospatial intelligence information but also extend to include commercial trade of geospatial technology and allied services. Indian geospatial industry has largely been driven by exports of services. Recent policy reforms have provided much needed boost to the domestic market. With Government support it could reach around

US\$12.5 billion by 2030 and would play a key role in India's progress in the 4th industrial age. Current exports of Indian geospatial industry is estimated to be around US\$1.5 billion and the same is likely to grow substantially in the next decade.

India offers tremendous opportunities to U.S.-based companies to establish their commercial presence in the country, as its ranking continues to improve on the World Bank's Ease of Doing Business Index. India's strategic budget announcements to fulfill its vision of being a 5-trillion-dollar economy by 2025 creates tremendous growth opportunities for foreign entities to expand their local presence in the country. The role of geospatial sector to achieve this vision is critical and paramount.

Opportunities exist today, in both India and the United States, to support long-term partnerships that will nurture the spirit of geospatial entrepreneurship, create jobs, and provide for an efficient, profitable relationship between the geospatial businesses and governments of the two countries. India is investing heavily in building its digital and physical infrastructure and simultaneously creating an enabling environment for innovation. Startups are developing unique applications for human development and sustainability across social, environmental, and economical domains. As the United States is one of the largest providers of advanced and innovative technology solutions in India, it can become a driving force for facilitating business opportunities for Indian companies. This collaboration, against the backdrop of favorable public policy, can be expanded to other regions in the Indo-Pacific area making the partnership between India and the United States profitable and equitable.

2nd India-USA Geospatial and Space Business Summit

The 1st India -USA Geospatial Business Summit was organized on June 02, 2022, on the sidelines of GeoBuiz 2022 Summit in Monterey, California in association with Geospatial World and in collaboration with the Embassy of India, Washington D.C. and the U.S. Department of State. GWCC is organizing the **2nd India-USA Geospatial and Space Business Summit** on November 15, 2022 as part of [GeoSmart India](#) conference at Hyderabad International Convention Centre in Hyderabad, Telangana, India. The one day summit shall witness participation from the key stakeholders from government agencies, civil society, private sector, and academia and research fraternity from both the countries – USA and India. GWCC endeavours towards facilitating strategic dialogue between the two countries strengthening India-USA Geospatial and Space Business Partnership.

GWCC further strives to build on the mandate of Governments to provide broader framework of cooperation and develop an enabling environment of ease of doing business in their respective countries. This would further boost confidence of commercial companies to co-invest and embark on long term pathways for sustainable and profitable partnerships.

Core Objectives:

- To deliberate on the various policy reforms pertaining to Geospatial and Space technologies towards strengthening the existing bilateral relations between the two countries
- To demonstrate combined value of geospatial and space technology in overall development of the two countries through business dialogue
- To showcase latest technology innovations across space, geospatial, AI/ML, Cloud, Autonomy and their combined integration with geospatial and EO capabilities to develop national geospatial knowledge infrastructure and its applications
- To share and exchange the best practices of the Geospatial technologies embedded with future generation technologies and applications
- To facilitate an actionable agenda for capacity building of the key stakeholders by leveraging of each other's capabilities
- To draw a roadmap for the next five years with Geospatial and Space technologies and applications at the nucleus

Who will attend?

Industry Leaders | Government Functionaries | Thought Leaders | Business Users | Implementing Agencies

Highlights of the Programme

- Dialogue forums consisting of participation from Government, Industry and Civil Society leaders
- High Level Networking Reception

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Time Slot	Program Agenda (Draft)
14:00 -14:30	Opening Session - Policy Impact and Ease of Doing Business: An Indian Perspective
14:30 – 15:15	Session I: India-USA Geospatial Technology Collaboration: Opportunities for Industry
15:15 – 16:00	Session II: India-USA Space Technology Collaboration: Opportunities for Industry
16:00 – 16:30	Coffee/Tea Break
16:30 – 17:15	Session III: Technology Transfer and Make in India: Opportunities and Potentials