GEOSMART INDIA

CONFERENCE & EXPO

01-04 December 2025, Bharat Mandapam, New Delhi

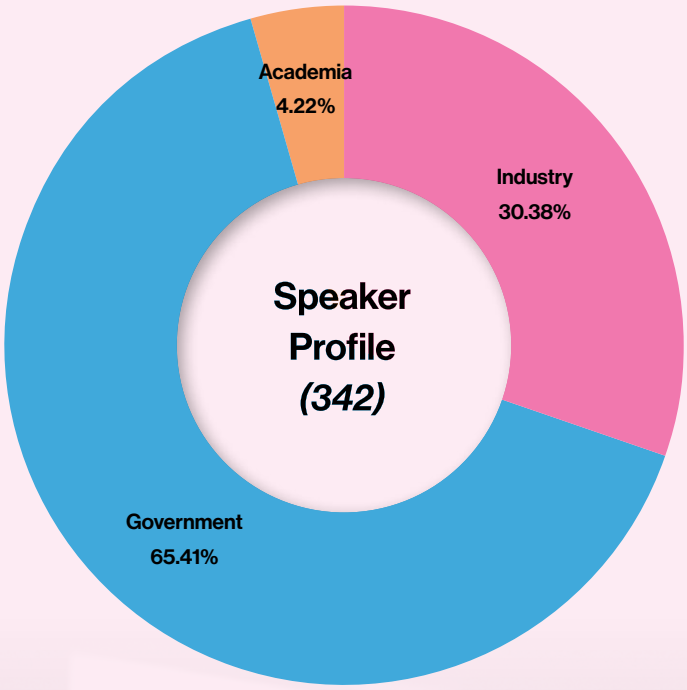
Conference Report 2025

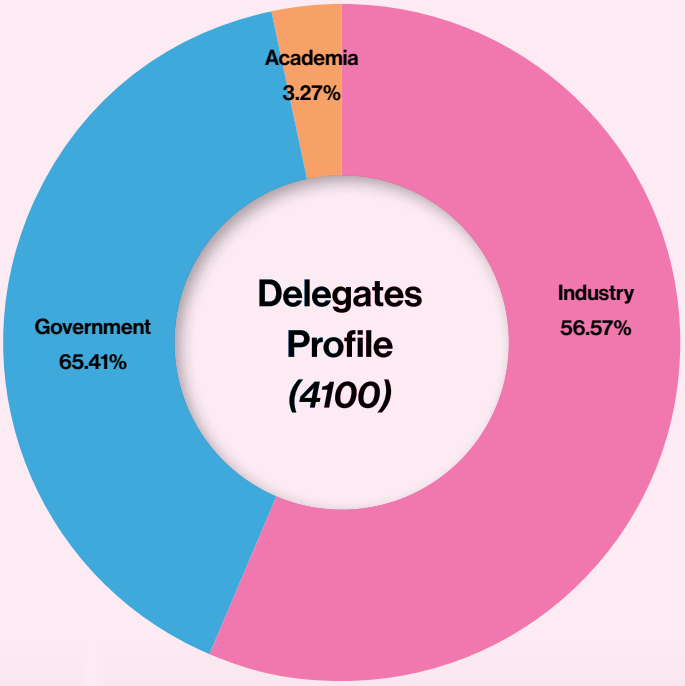
Years of Space & Geospatial Impact

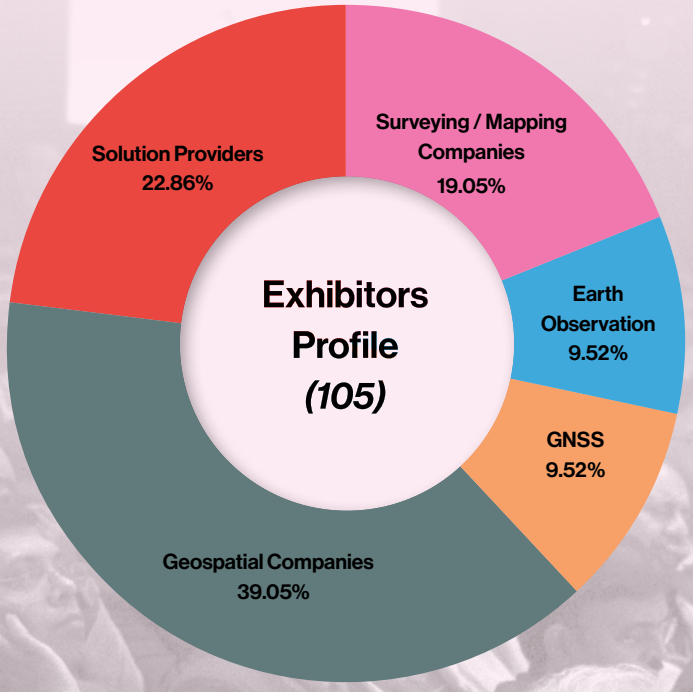
A Silver Jubilee Edition

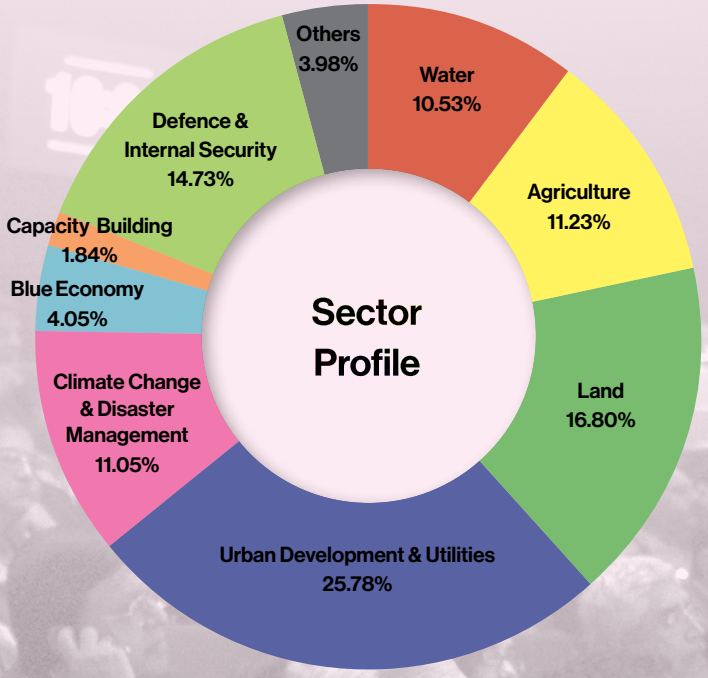
CONTENT

GeoSmart India in Numbers









INDIA'S LARGEST GEOSPATIAL A

Conference Overview

GeoSmart India 2025, produced by Geospatial World marked the Silver Jubilee (25th) edition of India's largest geospatial conference and exposition. Anchored on the theme "One Nation, One Map – Advancing Geospatial Infrastructure for National Sovereignty and Economy," the event highlighted the critical role of unified spatial frameworks in strengthening national development, governance efficiency, and economic competitiveness. The conference convened senior policymakers, government leaders, industry experts, academia, and global stakeholders to deliberate on advancing integrated geospatial infrastructure for India's digital future.

The conference programme comprised high-level plenary sessions, thematic summits, and specialized forums that explored the expanding role of geospatial intelligence in public policy, national security, and economic planning. Discussions focused on the adoption of interoperable mapping systems, spatial data integration, and cross-sector collaboration to enhance decision-making and service delivery. Emphasis was placed on building resilient geospatial ecosystems that support evidence-based governance and long-term national priorities.

The conference examined sector-specific applications of geospatial technologies across Agriculture, Defence and Internal security, Water and Urban Utilities, Climate Change and Disaster Management, Digital Governance, and the Blue Economy. The launch of the GeoSmart India EXPO added a significant experiential dimension, providing a comprehensive showcase of geospatial and space-technology innovations, including AI-enabled analytics, digital twins, remote sensing platforms, and integrated land and infrastructure systems.

The outcomes of the conference reaffirmed the strategic importance of geospatial infrastructure in enabling cohesive national planning and sustainable development. Deliberations and knowledge exchanges contributed to actionable pathways for strengthening India's spatial data ecosystem, optimizing resource management, and improving citizen-centric services. By reinforcing collaboration between policy, technology, and implementation stakeholders, the conference further advanced India's vision of resilient governance and data-driven economic growth.

ND SPACE TECHNOLOGIES EXPO

Conference Objectives

Facilitate structured dialogue among key geospatial stakeholders globally across sectors.

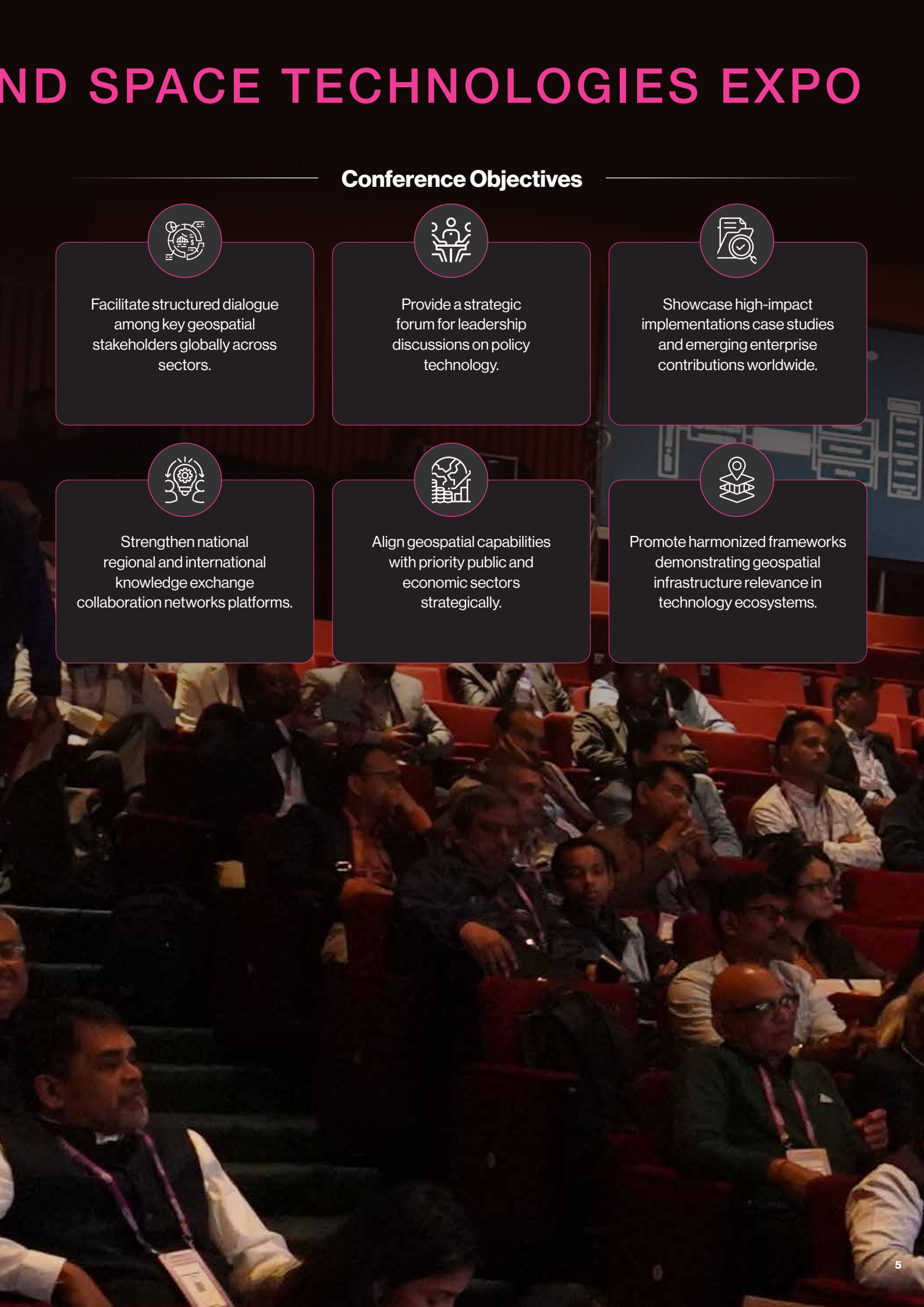
Provide a strategic forum for leadership discussions on policy technology.

Showcase high-impact implementations case studies and emerging enterprise contributions worldwide.

Strengthen national regional and international knowledge exchange collaboration networks platforms.

Align geospatial capabilities with priority public and economic sectors strategically.

Promote harmonized frameworks demonstrating geospatial infrastructure relevance in technology ecosystems.



INDIA'S LARGEST SPACE AND GEOSPATIAL TECHNOLOGIES EXPO

2831	PARTICIPANTS	**105**	EXHIBITORS
200	STARTUPS	**256**	PRIVATE ORGANIZATIONS
311	GOVERNMENT BODIES	**70**	SESSIONS
300+	SPEAKERS	**35+**	HOURS CONTENT

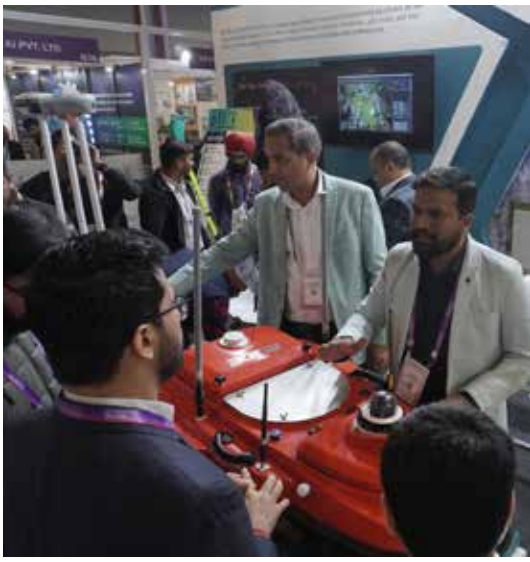

CMR


भारतीय सर्वेक्षण विभाग
SURVEY OF INDIA


B
JAVA


NeoGeo
— NeoGeoInfo Technologies Limited —
Raptor
Sentry
Ne Geo


PFEPL
Pioneer Foundation Engineers Pvt. Ltd.




EMIC JUNCTION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CXO SUMMIT

Role of Indian Space and Geospatial Industry in Evolving World Order

Panel 1: Evolving Role of Space and Geospatial Industry in Economy and Society

Moderator

Ananyaa Narain
Vice President, Consulting
Geospatial World

Panelists

Srikant Sastri
Chairman, Geospatial Data Promotion and Development Committee
Government of India

AMB Tanmaya Lal
Ambassador of India
The Kingdom of Sweden

Agendra Kumar
Managing Director, Esri India

Sreeramam G V
Chief Executive Officer
NeoGeoinfo

Devleena Bhattacharjee
COO & Founder, Clima Crew

Space and geospatial technologies are increasingly driving India's economic productivity, governance efficiency, and societal impact as the country transitions from data creation to data-driven transformation. Speakers emphasized the need for standardized, integrated, and scalable data to deliver real impact on the ground, highlighting successful applications in agriculture, land administration, rural mapping, and public service delivery. The role of enabling policy frameworks, global collaboration, and healthy competition was underscored as critical to strengthening India's commercial and international engagement.

Panel 2: Sovereign Space and Geospatial Infrastructure: Bane or Boon for Industry Growth

Moderator

Sanjay Kumar
Chief Executive Officer
Geospatial World

Panelists

Rakesh Verma
Co-Founder & Managing Director, MapmyIndia

Sanjay Nekkanti
Chief Executive Officer
Dhruva Space

Abhay Swarup Mittal
Chief Executive Officer
Skymap Global

Dr Rajeev Jaiswal
Indian Space Research Organisation (ISRO)
Government of India

Pranit Mehta
Co-Founder, GalaxEye

Sunil Indruti
Director, Azista

Sovereign space and geospatial ecosystems are becoming foundational to national security, governance, and long-term economic competitiveness. Speakers underscored that true digital sovereignty depends on trusted, protected, and indigenous data, supported by strong domestic platforms, secure infrastructure, and reliable mapping systems to reduce foreign dependency. The discussion highlighted self-reliance in satellite data, sensing capabilities, and supply chains as a strategic necessity, alongside the need for high-performance infrastructure encompassing power, storage, networks, and scalable workflows. Participants also stressed the importance of dual-use geospatial capabilities that serve defence, civilian, and commercial needs, while balancing security with openness, indigenous capacity with global collaboration, and public institutions with private sector innovation.

Panel 3: Technology Innovations and Product Development through Strategic Governance and Entrepreneurial Resilience

Moderator

Sanjay Kumar
Chief Executive Officer
Geospatial World

Panelists

VSS Kiran
Founder &
Chief Executive Officer
Garudalytics

Sajid Mukhtar
Chairman &
Managing Director
Roter Group

Neel Mehta
Co-Founder & Director
Asteria

Tanveer Ahmed
Co-Founder & Chef
Technical Officer, Digantara

Atanu Sinha
Chief Executive Officer
Garuda UAV

Technology innovation and product development increasingly emerge from the intersection of strategic governance and entrepreneurial resilience. Emphasis was placed on the role of forward-looking policy frameworks, regulatory clarity, and institutional accountability in creating an environment where innovation can scale sustainably. The conversation also underscored the importance of entrepreneurial agility, risk-taking, and resilience in translating ideas into market-ready products and globally competitive solutions. Together, these elements were positioned as critical to fostering creativity, long-term scalability, and sustainability, strengthening India's leadership and influence in the global technology ecosystem.

Panel 4: Spatial Computing and Digital Twins: Expanding Space and Geospatial Industry Value Chain

Moderator

Titas Roy
Industry Manager – Infrastructure
Geospatial World

Panelists

Akshay Loya
Chief Executive Officer
GISKernel

COL Pankaj Fotedar
Chief Executive Officer
Geokno

Sajid Mlik
Chairman &
Managing Director
Genesys International

Dr Pari Y
Associate Vice President & Head of GeoSpatial Technologies, LTIMindtree

Spatial computing and digital twin technologies are transforming the way the physical world is visualized, simulated, and interacted with by seamlessly connecting real and virtual environments. Emphasis was placed on their growing role in extending the value chain of the space and geospatial industry by enabling more immersive, data-rich, and predictive insights. The session explored applications across infrastructure, energy, mobility, and urban systems, demonstrating how these technologies improve planning accuracy, operational efficiency, and real-time decision-making. By fostering cross-sector integration and innovation, spatial computing and digital twins were presented as key enablers of new economic opportunities and societal value, supporting smarter, more resilient, and future-ready systems.

Panel 5: Space Infrastructure as a Service for Enterprise Geospatial Applications

Moderator

Oaishik Bhattacharya
Associate Dorector-GKI
Geospatial World

Panelists

Dr Prakash Chauhan
Director, National Remote Sensing Centre, Indian Space Research Organisation (ISRO), Department of Space, Government of India

Krishanu Acharya
Co-Founder & Chief Executive Officer
Suhora

Prateep Basu
Chief Executive Officer
SatSure

Ankit Bhateja
Founder & Director
Xovian Aerospace

Space Infrastructure as a Service (SIaaS) is transforming enterprise access to satellite data, analytics, and cloud-based processing by removing the need for heavy capital investments and enabling scalable, on-demand geospatial capabilities. Emphasis was placed on how continuous positioning through GNSS constellations, combined with rich, multi-layered Earth observation imagery, is powering real-time, enterprise-grade location-based services across government, business, and citizen-centric ecosystems. The session explored how SIaaS is accelerating digital transformation, improving speed and quality of decision-making, and strengthening a future-ready geospatial value chain by making advanced space infrastructure more accessible, efficient, and interoperable.

Panel 6: Export of Geospatial Solutions and Services in Evolving World Order

Moderator

Titas Roy
Industry Manager – Infrastructure
Geospatial World

Panelists

Akanksha Tyagi
Senior Director-EMEA
Geospatial World

Rajesh Alla
Chairman & Managing Director
IIC Technologies

Ramesh Ananthakrishnan
Chief Executive Officer
DSM Soft

Sumit Roy
Chief Business Officer
Pixel Softech

Rajanikanth Muppalla
Head Geospatial Strategy & Go to Market
Tech Mahindra

The evolving global positioning of India's geospatial industry, highlights a clear shift from traditional outsourcing models toward collaborative, solution-driven, and product-led international engagement. Speakers emphasized that global markets are increasingly demanding niche, domain-specific applications rather than generic GIS services, creating opportunities in areas such as broadband infrastructure, utilities, and sector-focused mapping solutions. The need for deeper integration with international clients, stronger partnerships between large IT firms and specialized startups, and a balance between collaboration and competition was underscored. Panellists also stressed the importance of sustained R&D investment, innovation-led product development, and differentiation to navigate localization requirements, trade barriers, and to build globally competitive, high-value geospatial exports.

Panel 7: Scope and Business Models of Public-Private Partnership

Moderator

Vaishali Dixit
Vice President- Americas
Geospatial World

Panelists

S.K.Sinha
Additional Surveyor General
Survey of India

Asit Saha
Director General
Geological Survey of India
Government of India

Dr Chandra Prakash Singh
Deputy Director- Technical
Directorate, IN-SPACe,
Department of Space,
Government of India

Biswaketan Kundu
Vice President &
Business Unit Head- GIS
Reliance Jio Platforms

Lt Gen Anil Bhatt, PVSM, UYSM, AVSM, SM, VSM,
Director General, Indian
Space Association (ISpA)

Public–Private Partnership (PPP) models for the geospatial and space sectors were the central focus of this session, examining how collaboration between government institutions and industry can scale national geospatial capabilities. Panellists discussed the evolving role of public agencies as custodians and enablers of core geospatial and space assets, while private enterprises drive innovation, platforms, and sector-specific applications. The conversation emphasized the importance of clearly defined roles, transparent data-sharing and licensing frameworks, and commercially viable risk-sharing models that balance public value with private investment. Speakers also highlighted the need for regulatory clarity, standardized processes, and long-term partnership structures to accelerate innovation, improve adoption, and build sustainable, globally competitive geospatial business ecosystems aligned with India's strategic priorities.

Panel 8: Role of Government in Industry Development: Advancing Towards Vikshit Bharat

Moderator

Sanjay Kumar
Chief Executive Officer
Geospatial World

Panelists

Lt Gen Girish Kumar, VSM (Retd)
Advisor, Ministry of External
Affairs, Government of India
& Vice Chairman, DRIISHYA,
Government of Haryana

Alok Prem Nagar
Joint Secretary
Ministry of Panchayati Raj
Government of India

Kunal Satyarthi
Joint Secretary, Department
of Land Records
Government of India

Dr Sultan Singh
Director & Chief Scientist,
Haryana Space Applications
Centre (HARSAC)

Smit Shah
President
Drone Federation India (DFI)

Anil Prakash
Director General, SIA India

Policy clarity, government agility, and industry readiness are collectively accelerating the growth of India's drone, space, and geospatial ecosystem. Speakers emphasized the impact of streamlined approvals, faster licensing, and evolved procurement frameworks in enabling rapid scaling of startups while underscoring the need for long-term R&D support and capacity building to sustain innovation. The conversation stressed the importance of training, certification, and ecosystem development in translating geospatial technologies to grassroots governance, particularly at the Panchayat level. Panellists also highlighted the need for citizen-centric validation, realistic tender and qualification structures, and stronger coordination between government and industry, alongside expanding public–private partnerships, to ensure scalable, high-quality delivery and position India's space and geospatial sectors for global competitiveness.

LIVING Legends

Space and Geospatial Industry Trajectory'

Moderator

Sanjay Kumar
Chief Executive Officer
Geospatial World

The panel reflected on the evolution of India's geospatial industry, tracing the journey from manual surveying and analogue maps to satellite imagery, digital mapping, GIS, and spatial intelligence. Speakers highlighted how technology, collaboration, and human curiosity have driven progress, emphasizing the need to understand processes, nurture talent, integrate disciplines, and adapt to change. Across government, science, entrepreneurship, and innovation, the consensus was that geospatial technology is now a foundational layer for national development, with a future that is increasingly promising, expansive, and impactful.

Panelists

Prof VS Ramamurthy
Former Secretary
Department of Science and Technology

AS Kiran Kumar
Member, Space Commission
Government of India

Saroop Chand
Director, Adroitec Information Systems (P) Limited

Dr. Manosi Lahiri
Founder, Managing Director & Chief Executive Officer
ML Infomap

Dr. BVR Mohan Reddy
Founder, Former Executive Chairman, Board Member, Cyient

Dr. Shailesh Nayak
Director National Institute of Advanced Studies (NIAS)

Prof VS Ramamurthy
Former Secretary, Department of Science and Technology

“Prof. V. S. Ramamurthy reflected on how early exposure to school maps instilled an appreciation for the authority and effort behind mapping, shaping young minds as future drivers of geospatial progress. Drawing on institutional experience, he emphasized the importance of collaboration, open dialogue, and integration of diverse datasets across organizations like the Survey of India and space agencies. He highlighted that nurturing basic mapping literacy, curiosity, and problem-solving skills empowers innovation, and stressed that it is never too late to pursue new ideas—encouraging the next generation to explore, innovate, and push the boundaries of geospatial science.~”

Dr. BVR Mohan Reddy
Founder, Former Executive Chairman, Board Member, Cyient

“Dr. BVR Mohan Reddy emphasized that it is never too late to learn or innovate, highlighting India's potential to lead globally in geospatial technology. He noted that map digitization has driven digital innovation and stressed the importance of following the right processes and adapting continuously. Projecting tenfold growth in the geospatial market over the next five years, he highlighted how satellite imagery now delivers data-driven insights and how adaptability, more than AI alone, will shape the future. He also pointed to the $40-billion global Engineering R&D industry as a major opportunity for India's space and geospatial ecosystem.~”

AS Kiran Kumar
Member, Space Commission, Government of India

“A. S. Kiran Kumar emphasized that spatial thinking is innate to humans and, when paired with geospatial technology and a clear national vision, can transform basic needs into societal benefits. Drawing on decades of experience in India's space programme, he highlighted how science and technology can address complex challenges, amplify global contributions, and improve everyday life. He stressed the importance of personal competence, human adaptability, and innovation in creating meaningful impact, concluding that technological advancement must ultimately serve both humanity and the environment.~”

Saroop Chand
Director, Adroitec Information Systems (P) Limited

“Saroop Chand reflected on his career spanning India's geospatial and digital transformation, tracing the shift from traditional surveying to national-level applications and advanced digital design tools. He highlighted how geospatial technologies expanded beyond defence into sectors like electricity, roads, and traffic management, improving efficiency and decision-making. Today, these technologies extend to emerging areas such as 3D printing, GIS, and location-based mapping. He also cautioned that growing reliance on GPS systems underscores the need for resilient and prepared spatial data infrastructures.~”

Dr. Shailesh Nayak
Director National Institute of Advanced Studies (NIAS)

“Dr. Shailesh Nayak emphasized that true innovation arises from understanding underlying processes, citing how improved cyclone forecasting has reduced loss of life in India. He highlighted the importance of integrating social sciences and humanities with geospatial technology to advance sustainable development and stressed that insights from terrestrial ecosystems, like water and forests, are shaping future living. He concluded by underscoring that collaboration is essential for meaningful progress in the geospatial domain.~”

Dr. Manosi Lahiri
Founder, Managing Director & Chief Executive Officer, ML Infomap

“Dr. Manosi Lahiri highlighted how technological adoption in mapping has aimed to simplify and improve efficiency, tracing the shift from tedious traditional cartography to transformative digital solutions. She noted that geospatial technology evolves gradually, layer by layer, as users gain confidence, and over time has expanded into new domains, driven efficiencies, and reduced operational costs. Her reflections underscored the growing relevance and transformative power of mapping technologies across industries.~”

POLICY, GOVERNANCE, AND

AMITABH KANT, IAS

Board Member, L&T, HCL, Indigo, Fairfax, Financial Holdings, Former G20 Sherpa & Chief Executive Officer, NITI Aayog

"Viksit Bharat is not possible without the geospatial sector driving India's growth in a big way."

SRIKANT SASTRI

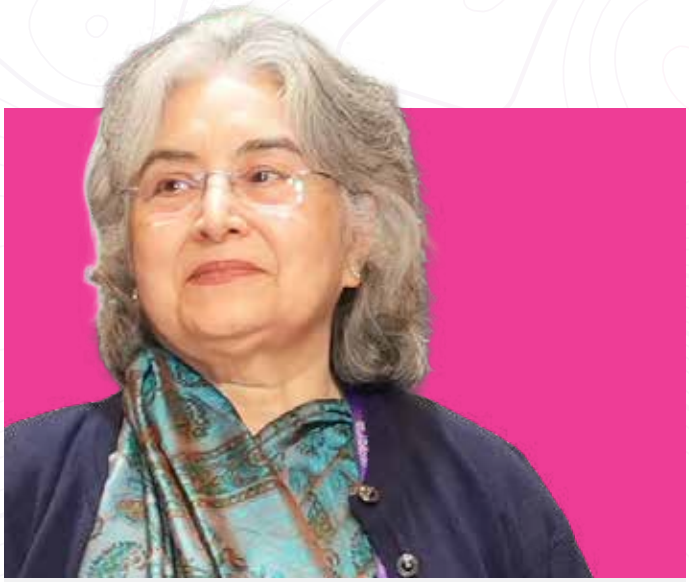
Chairman, Geospatial Data Promotion and Development Committee, Government of India

"Geospatial is not just a technology—it is a foundation for India's economic strength and technology sovereignty."

AGENDRA KUMAR

Managing Director, Esri India

"Geospatial technology today is not just a tool—it is a strategic asset for national growth."



DR. MANOSI LAHIRI

Founder, Managing Director & CEO, ML Infomap

"Technology in mapping exists to simplify life; digital cartography's steady evolution has transformed geospatial practice, expanding impact, efficiency, and relevance."

THE PATH TO A VIKSIT BHARAT

AS KIRAN KUMAR

Member, Space Commission, Government of India

"Spatial thinking is innate; when vision meets geospatial innovation, technology transforms human needs, strengthens nations, and serves people and planet."

VIVEK BHARADWAJ, IAS

Secretary, Ministry of Panchayati Raj
Government of India

"This is not just mapping—it is rewriting the economic and social story of rural India."

MANOJ JOSHI, IAS

Secretary, Department of Land Resources, Government of India

"Maps are no longer static tools kept in isolation; they are dynamic assets that unlock insights, drive precision governance, and strengthen national sovereignty."

S.K. SINHA

Additional Surveyor General, Survey of India

"India's efforts to build a precise and integrated Land Stack as the foundation for smarter planning and transparent governance."

PLENARY SESSIONS

Opening Plenary Session-

Theme: One Nation One Map! Advancing Space and Geospatial Infrastructure for Economic Growth and National Sovereignty

Moderator

Sanjay Kumar
Chief Executive Officer
Geospatial Word

Speakers:

S.K. Sinha
Additional Surveyor General, Survey of India

Srikant Sastri
Chairman, Geospatial Data Promotion and Development Committee
Government of India

Vivek Bharadwaj, IAS
Secretary, Ministry of Panchayati Raj
Government of India

Manoj Joshi, IAS
Secretary, Department of Land Resources, Government of India

Agendra Kumar
Managing Director
Esri India

Dr Rahul Shandilya
Group President
Digital & IT, GMR Group

Amitabh Kant, IAS
Board Member, L&T, HCL, Indigo, Fairfax, Financial Holdings, Former G20 Sherpa & Chief Executive Officer, NITI Aayog

Sanjay Kumar
Chief Executive Officer, Geospatial Word

Sanjay Kumar opened the plenary session of GeoSmart India 2025 on the theme "One Nation One Map! Advancing Space and Geospatial Infrastructure for Economic Growth and National Sovereignty," He highlighted India's rapid an°d purpose-driven evolution in the geospatial and space sectors. He reflected on transformative milestones—from early policy discussions in 1999 and the 2005 National Map Policy to recent space sector reforms and the emergence of geospatial infrastructure, spatial computing, and national data empowerment—emphasizing that recent years have seen a renaissance rather than incremental growth. He underscored the critical role of collaborations between ISRO, Survey of India, and scientific leaders in converging cartography, space science, IT, and engineering to redefine mapping, measurement, and governance. His address reinforced that a nation's ability to map itself is central to its growth, security, and empowerment, setting the stage for building a unified, accessible, and future-ready geospatial ecosystem in India.

S.K. Sinha
Additional Surveyor General, Survey of India

"One Nation, One Map: Reimagining India's Spatial Infrastructure for the Next Decade". S. K. Sinha emphasized India's transition from a fragmented geospatial landscape to a unified, accessible framework. For decades, siloed datasets and duplicated efforts limited informed decision-making across urban planning, infrastructure, environmental management, and disaster response. The initiative seeks to establish authoritative coherence without centralizing ownership or diluting domain expertise, combining decentralized ownership—where agencies retain control of their authentic, domain-specific data—with central integration and single-window access through the Unified Geospatial Interface (UGI). Modeled on transformative platforms like UPI and UIDAI, UGI aims to democratize geospatial intelligence, making it dynamic, interoperable, and actionable. This vision positions maps not merely as static tools but as strategic assets that enable precision governance, strengthen national sovereignty, and catalyze India's next phase of data-driven growth.

Srikant Sastri
Chairman, Geospatial Data Promotion and Development Committee, Government of India

Srikant Sastri's address highlighted the urgent need for India to achieve geospatial sovereignty, drawing parallels with the country's rapid digital transformations in telecommunications and payments. Reliance on foreign geospatial tools poses national security risks, as illustrated by recent GPS disruptions, making domestic capability imperative. The speaker outlined a practical framework for leveraging modern space technologies and geospatial

infrastructure to drive economic growth and resilience: establishing "One Nation, One Map" as a unified foundational layer, integrating thematic datasets from ministries and private agencies, enabling seamless data-sharing, and fostering sectoral innovations that improve governance, efficiency, and service delivery. Pilot initiatives like Operation Dronagiri demonstrated tangible benefits—such as precision farming in Varanasi—through coordinated use of geospatial insights, space-based data, and inter-agency collaboration. The session emphasized that geospatial technology is not merely a tool but a strategic foundation for India's economic strength, technology independence, and national security.

Vivek Bharadwaj, IAS
Secretary, Ministry of Panchayati Raj
Government of India

Vivek Bharadwaj's address highlighted how simple, low-cost geospatial tools are driving a quiet revolution in rural India, transforming millions of lives by providing legally verified property ownership through initiatives like the SVAMITVA Property Card. Real-life examples—from farmers securing loans to women asserting land rights in court—demonstrated how accurate geospatial mapping resolves disputes, unlocks credit, strengthens local economies, and empowers citizens. To date, 3.5 lakh villages have been surveyed and over 3 crore property cards issued, mapping more than 10 crore land parcels—an unprecedented scale globally. The session emphasized that these maps are not just technical assets but instruments of dignity, development, and inclusive governance, while also laying the foundation to address long-standing challenges such as rural drainage planning.

Manoj Joshi
IAS, Secretary, Department of Land Resources,
Government of India

Manoj Joshi highlighted India's efforts to build a precise and integrated Land Stack as the foundation for smarter planning and transparent governance. While everyday life relies on accurate geospatial systems, land administration has lagged, particularly in regions like North India where much of the land still requires updated surveys. Initiatives such as Urban NAKSHA, statewide surveys, and the BhoomiShakti program are creating detailed geospatial layers that identify exact landholdings, infrastructure, and government and private land with metre-level precision, enabling better planning, dispute resolution, and decision-making. Drawing inspiration from global examples, India's Land Stack integrates a nationwide base map, verified plot boundaries, and parcel-level data into a unified framework, ensuring every land parcel is identifiable, every boundary authenticated, and every map reliable. This layered approach establishes land information as a critical asset for efficient governance, citizen trust, and a modern, digital land administration ecosystem.

Agendra Kumar
Managing Director, Esri India

Agendra Kumar highlighted geospatial technology as a strategic national asset, emphasizing its growing role in governance, infrastructure planning, climate action, and citizen services across India's 150 crore population. Esri India has expanded GIS adoption and built a robust platform with over 800 authoritative datasets, supporting planning, analytics, and innovation, complemented by platforms like Bharat Envi Analytics that integrate satellite data, AI, and advanced processing. With the National Spatial Policy creating a more enabling environment, geospatial data is now more seamlessly accessible to developers, enterprises, and public institutions. The address underscored the importance of strong domestic geospatial capabilities and outlined Esri India's commitment to further initiatives that enhance data access, analytics, and national readiness, positioning geospatial intelligence as a backbone for India's strategic growth.

Dr Rahul Shandilya
Group President, Digital & IT, GMR Group

Dr Rahul Shandilya emphasized the central role of geospatial technology in transforming infrastructure planning, asset management, and governance. GMR highlighted its vision to create a future-ready national Spatial Data Bank—a high-quality, authoritative repository of aerial and geospatial data accessible to all ecosystem stakeholders, analogous to how a land bank powers economic growth. Collaboration with Vexcel aims to leverage high-resolution imaging, analytics, and domain expertise to modernize land records, improve infrastructure planning, enhance urban resilience, and generate actionable insights across sectors. The address underscored that collecting data is only the first step; processing, analysis, and value extraction through partnerships are critical. By treating geospatial data as a national asset, GMR and Vexcel are advancing the One Nation, One Map vision and laying the foundation for India's intelligent, data-driven, and sustainable growth.

Amitabh Kant, IAS
Board Member, L&T, HCL, Indigo, Fairfax, Financial Holdings, Former G20 Sherpa & Chief Executive Officer, NITI Aayog

Amitabh Kant emphasized that India's geospatial sector is critical to realizing the country's $30 trillion economic ambition. While the sector has gained momentum through private innovation and enabling policies, its pace must accelerate to support massive scaling in manufacturing, incomes, and national growth. Geospatial and space technologies underpin infrastructure development, city planning, logistics, precision agriculture, and climate risk management, making them foundational to every sector. The speaker highlighted the urgent need for Digital Twins of cities and infrastructure to transform planning, investment, and service delivery, drawing on global examples from the UK, Singapore, Europe, and the US. Government initiatives provide the groundwork, but private-sector-led innovation, supportive policies, deep-tech startups, and integrated national missions are essential to scale mapping, location intelligence, and digital twin ecosystems. Geospatial is thus framed not merely as a technology vertical but as the backbone of India's long-term economic growth and global competitiveness.

Plenary Session 2: Resilient and Sovereign Space and Geospatial Infrastructure through Collaborative Partnerships

Chair:

A S Kiran Kumar (Padma Shri)
Member, Space Commission
Government of India

Speakers:

Dr Prakash Chauhan
Director, National Remote Sensing Centre
Indian Space Research Organisation (ISRO), Department of Space, Government of India

Wataru Takahama
Director- Space Industry Division, Ministry of Economy, Trade and Industry

Harsh Pareek
Vice President- Asia Pacific
Trimble

Takakyuki Odawara
Executive Officer and General Manager- Business Development
Synspective, Japan

Prateep Basu
Chief Executive Officer
SatSure

Convergence of policy, industry, and technology in building resilient and sovereign space and geospatial ecosystems. Highlighting the role of public–private collaboration, the discussion emphasized breaking structural deadlocks in the space sector to accelerate satellite deployment, data utilization, and economic growth. Key takeaways included the need to move beyond satellite data alone by integrating Earth observation with ground-based data, AI-driven analytics, and cloud-native platforms to deliver timely, actionable intelligence. The session also stressed the critical importance of disaster management, national security, and infrastructure monitoring as high-impact use cases, where near–real-time geospatial intelligence can protect vulnerable populations and support informed decision-making. Furthermore, the dialogue reinforced the value of long-term mission roadmaps, sovereign data infrastructure, and international cooperation—particularly between India and Japan—to advance sustainable development, resilience, and governance aligned with national visions such as Viksit Bharat 2047.

Plenary Session 3: Sensors to Services: Advancing Turnkey Solutions through Collaborative Business Models

Chair:

Dr Sailesh Nayak (Padma Shri)
Director, National Institute of Advanced Studies (NIAS)

Speakers

Tripurari Sharan, IAS
State Chief Information Officer, Bihar

Jeroen Zanen
Chief Executive Officer
AI InfraSolutions
The Netherlands

Ryan Bank
Board Member
Vexcel Imaging, Austria

Roli Agarwal
Director, Partnerships
Google Maps, India

Rajanikanth Muppalla
Head Geospatial Strategy & Go to Market
Tech Mahindra

Sreeramam G V
Chief Executive Officer
NeoGeoinfo Technologies

The transformation of geospatial value chains from isolated sensor-centric deployments to integrated, service-led delivery models powered by collaboration. The discussion highlighted how turnkey solutions—combining data capture, AI-enabled processing, cloud-based platforms, and domain-specific applications—are reshaping how geospatial intelligence is produced, scaled, and consumed. A central takeaway was that ecosystem convergence across hardware providers, digital platforms, data custodians, and application partners is essential to overcome fragmentation, reduce cost and complexity, and accelerate adoption. The session emphasized the shift from raw data generation to actionable outcomes, enabled by real-time information flows, structured datasets, and AI-driven insights. High-impact use cases such as mobility, infrastructure resilience, public safety, sustainability, and urban systems were underscored as areas where service-oriented geospatial models can deliver measurable societal and economic value. The dialogue ultimately highlighted that durable impact in the geospatial sector will be driven by outcome-oriented service models, interoperable ecosystems, and trust-based collaboration that translate technological capability into consistent, scalable value for users and institutions alike.

Plenary Session 4: Northeast Conclave: Augmenting Technology for Resilient and Sustainable Development in North-Eastern Region

Welcome:

Lt Gen AKS Chandele, PVSM, AVSM, PhD
President - Defense, Internal & Public Safety
Geospatial World

Guest Address & Conversation:

General (Dr) Vijay Kumar Singh, PVSM, AVSM, YSM (Retd)
Hon'ble Governor
State of Mizoram

Lt General Kaiwalya Trivikram Parnaik, PVSM, UYSM (Retd)
Hon'ble Governor
State of Arunachal Pradesh

In Conversation

Sanjay Kumar
Chief Executive Officer
Geospatial World

Dr Shailesh Nayak (Padma Shri)
Director, National Institute of Advanced Studies (NIAS)

Kailsah Karthik. N, IAS,
Inspector General of Registration and Director-Land Records
Government of Assam

The North-Eastern region, particularly Arunachal Pradesh and Mizoram, is undergoing a profound transformation driven by infrastructure development and the strategic use of technology for resilient and sustainable growth. Speakers emphasized Arunachal Pradesh's rapid progress over the last decade through expanded road connectivity, village revitalization, social cohesion, and tourism development, achieved while preserving cultural heritage and ecological balance in a highly seismic and sensitive terrain. The dialogue underscored the unique geographical challenges of the region—rugged terrain, climatic vulnerability, dispersed settlements, and environmental fragility—and positioned geospatial technologies, remote sensing, and spatial modelling as essential enablers for terrain-informed governance, climate resilience, disaster preparedness, connectivity, border management, and sustainable economic planning. Overall, the session reinforced that technology is not merely an enabler but a foundational pillar for informed decision-making, environmental stewardship, and long-term resilience in the North-East.

> "Technology is not just a tool — it is a foundation for resilient, informed, and sustainable development in the North-East."

Hon'ble Governor of Mizoram
Gen (Dr) Vijay Kumar Singh, PVSM, AVSM, YSM

> "Arunachal Pradesh demonstrates how infrastructure, connectivity, and technology can drive growth while respecting cultural heritage and ecological sensitivity, unlocking immense developmental and tourism potential."

Hon'ble Governor, Arunachal Pradesh
Lt Gen K T Parnaik, PVSM, UYSM, YSM

AGRICULTURE SUMMIT

Theme: Farmers First: Ensuring Farmer-Centric Digital Transformation

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DAY1

Session 1: Farmers First – Powering Progress through Flagship Initiatives

Moderator:

Dr. Vinay Kumar Dhadwal
Lead Advisor- Science, Environmental Defense Fund

Presentation by:

Sofia Lahan
Senior Research Analyst- Market and Economy, Geospatial World

Speakers:

Padma Jaiswal, IAS
Secretary to Government, Secretary to Union Territory of Puducherry

Milind Wadodkar
Chief Soil Survey Officer, Head of Department, Soil and Land Use Survey of India, Ministry of Agriculture & Farmers Welfare

Dr Sultan Singh
Director & Chief Scientist, Haryana Space Applications Centre (HARSAC)

Sudha Reddy Patnaik
Chief Executive Officer, National Association for Farmer Producer Organisations (NAFPO)

Dr Binaya Kumar Parida
Sr AVP and Chief Agronomist, Coromandel International Limited

Chintu Kinger
Founder & CEO
Satat Gram Services Pvt Ltd

Key Takeaways

Data-Driven Transformation of Agriculture:

- Indian agriculture is adopting geospatial technologies, satellite imagery, drones, AI/ML, and digital advisories to enable real-time crop monitoring, yield prediction, precise input management, and improved climate resilience.

Farmer-Centric Technology Adoption:

- Successful digital agriculture begins with farmer needs, usability, trust, and on-demand access, ensuring technologies are understandable, relevant, and aligned with local contexts to drive sustained adoption.

Unified National Digital Agriculture Infrastructure:

- Interoperable platforms integrating farmer registries, geolocated farm boundaries, soil health data, and crop surveys enable seamless delivery of advisories, credit, insurance, mechanization, and input services.

Scaling Challenges in Agri-Tech Deployment:

- Small landholdings, fragmented supply chains, low digital literacy, aging farmers, and uneven program execution limit technology scale, affecting startup sustainability and effective last-mile agricultural technology adoption.

Parcel-Level Monitoring and Evidence-Based Governance:

- Farm parcel-level digital monitoring supports accurate yield estimation, resource optimization, compliance tracking, and transparent, bias-free decision-making for improved agricultural governance and management.

Precision Agriculture and Collective Models:

- Precision tools, digital advisories, soil mapping, and farmer collectives enable efficient input use, capacity building, shared machinery access, higher productivity, improved incomes, and inclusive, sustainable agricultural growth.

> "Geospatial technologies work well in pilots, but scaling them across India requires solutions that farmers can actually use—mobile-friendly, trust-based, and grounded in field realities, not just top-down data systems."

Padma Jaiswal, IAS
IAS, Secretary to Government, Union Territory of Puducherry

Session 2: Securing India's Food Future – Policy, Data & Financial Innovations

Keynote:

Dr Kuldeep Kumar
Vice President
HDFC Ergo General Insurance

Neelam Kumar Gupta
Head Agri & Parametric Product,
Anand Rathi Insurance Brokers Ltd

Dr. P.C. Sudhakar
Chief Manager, Agriculture Insurance
Company of India

Dr. Saptarshi Mondal
Geospatial Division Lead and Manager
Kshema General Insurance Limited

> "With millions of fragmented landholdings and crops spread across vast geographies, manual verification is no longer viable. Remote sensing, geospatial intelligence, and digital field verification are now essential to deliver crop insurance at scale with accuracy and trust."

Dr. P.C. Sudhakar
Chief Manager, Agriculture Insurance
Company of India

Key Takeaways

Geo-Technologies Enabling Data-Driven Agriculture:

- Satellites, drones, GIS, and remote sensing are transforming agriculture by enabling precise crop monitoring, early stress detection, soil mapping, and climate-risk insights, shifting decision-making from traditional practices to predictive, resilient, data-driven models.

Technology-Based Yield Estimation and Transparency:

- Machine learning, crop simulation, and semi-physical yield models are improving transparency, reducing manual errors, and delivering consistent outputs, gradually replacing time-intensive traditional methods for crop loss assessment and agricultural decision support.

Geo-Intelligence for Risk Assessment and Claims:

- High-resolution satellite imagery and weather intelligence enable objective underwriting, tamper-proof claim validation, fraud detection, and fair compensation, strengthening trust, efficiency, and accuracy across agricultural risk-management and insurance ecosystems.

Cross-Sector Expansion of Geospatial Intelligence:

- Geospatial and satellite datasets now support infrastructure, mining, energy, logistics, urban planning, disaster management, and climate risk evaluation, demonstrating their growing role in operational planning and decision-making across multiple economic sectors.

Rise of Parametric Insurance Models:

- Parametric insurance using satellite-derived indices enables rapid, dispute-free payouts across agriculture, construction, renewables, mining, and warehousing, reducing moral hazard, expanding coverage, and enabling customized climate-risk solutions.

Digital Ecosystems and Policy-Led Insurance Innovation:

- Digital workflows, AI-driven models, IoT, mobile platforms, and supportive policies are accelerating scalable, transparent, and climate-resilient agricultural and industrial insurance systems with faster settlements and improved farmer trust.

Session 3: Agri-Logistics & Market Intelligence – From Harvest to Consumer

Moderator:

Dr Deivasigamani Vasudevan
Senior Consultant, NAFED

Speakers:

Vijay Kumar
Senior Vice President and
Chief Technical Officer, Esri India

Dr Amit Sharma
Manager Agronomy Analytics
John Deere

Dushyant Tyagi
Founder, Farmgate Technologies

Vishala Reddy Vuyyala
Founder & Director, Millet Bank

Saurabh Arora
Head Intellectual Property &
Technology Transfer, iHub- AWaDH
IIT Ropar

Key Highlights

Bridging the Digital Adoption Gap in Agriculture:

- Despite widespread smartphone access, agriculture lags in digital transformation, with underutilization of IT and geospatial tools, highlighting the need for targeted, farmer-centric digital adoption interventions across workflows.

Tech-Enabled Transparent Procurement Systems:

- Aadhaar-linked registration, biometric authentication, geospatial warehouse mapping, and direct payments are improving procurement transparency, reducing intermediaries, accelerating farmer payments, and enabling informed logistics and market participation decisions.

Predictive Agriculture for Better Planning:

- AI-driven crop mapping and satellite-based yield prediction enable proactive planning of procurement centres, storage, and logistics, improving preparedness, reducing inefficiencies, and enhancing price realization for farmers.

End-to-End Geospatial Intelligence in Farming:

- Integrated geospatial platforms support crop planning, monitoring, yield estimation, and disaster assessment, enabling scalable, data-driven interventions across the agricultural lifecycle using open datasets and ready AI models.

Cold-Chain Infrastructure to Cut Post-Harvest Losses:

- Modern cold-chain systems using IoT monitoring, temperature-controlled logistics, hermetic storage, and silos reduce post-harvest losses, preserve produce quality, and strengthen efficient farm-to-market supply chains.

Innovation, Digital Markets, and Local Value Chains:

- Digital marketplaces, agri-tech innovation hubs, skilling initiatives, and geospatially planned local processing units strengthen agri-commerce, empower rural enterprises, support millet ecosystems, and drive inclusive, technology-led agricultural growth.

> “India has leapfrogged in digital payments, but agriculture has yet to experience the same digital transformation. Integrating geospatial intelligence, AI, and digital systems across the entire procurement value chain is essential to make agriculture more transparent, efficient, and farmer-centric.”

Dr. Deivasigamani Vasudevan
Senior Consultant, NAFED

DAY2

Session 1: Smart Farming Systems – Precision, Automation & Climate Resilience

Moderator:

Deepak Pareek
Founder, HnyB Technologies Incubation Pvt Ltd

Speakers:

Mihir Dakwala
Business Head- Agriculture
Amnex Infotechnologies Pvt Ltd

Harsh Agarwal
Co-Founder & Director, NEERX

Santanu Roy
PhD, Chief Executive Officer, Dhineu

Binu Cherian
Country Manager, Harvest Plus

Megha Shukla
Sr Data Scientist, Garudalytics Pvt Ltd

Siddhartha Khare
Assistant Professor and Founder
IIT Roorkee and Bhoomicam Pvt. Ltd

Key Takeaways

AI-Driven, Farmer-Centric Agri Advisory Platforms:

- AI-powered platforms like Bhoomicam and DeHaat deliver satellite-based crop monitoring, hyperlocal weather insights, and personalized advisories via mobile and WhatsApp, enabling scalable, accessible, and real-time decision support for farmers.

Multi-Sensor Crop Monitoring and PhenoCam Innovation:

- Integration of satellites, UAVs, and India's first agricultural PhenoCam network enables high-frequency crop growth monitoring, standardized climate baselines, and site-specific recommendations supporting long-term, climate-smart farm management.

Scalable Full-Stack AgriTech Ecosystems:

- Large B2F platforms connect millions of farmers through franchise networks, warehouses, and micro-entrepreneurs, integrating inputs, advisory, precision services, insurance, and output markets into seamless seed-to-market value chains.

GeoAI-Powered Yield and Land Intelligence:

- District-scale yield prediction, automated farm boundary extraction, and multi-crop analytics using GeoAI and remote sensing enable accurate planning, land assessment, productivity tracking, and data-driven agricultural decision-making.

Digital Tools for Field Data and Operations:

- Mobile applications with offline capability, configurable schemas, and seamless data lake integration streamline field data collection, disease detection, collaboration, and operational efficiency across large-scale agricultural programs.

Precision, Automated, and Climate-Resilient Farming:

- Smart farming solutions combining sensors, automation, digital platforms, and predictive analytics enhance efficiency, resilience, and adaptability, helping farmers mitigate climate risks and transition toward sustainable, technology-driven agriculture.

> **“ True agricultural transformation happens when digital intelligence meets last-mile scale. By combining AI-driven hyperlocal advisories with a seed-to-market value chain, we are enabling millions of farmers to make precise, timely, and profitable decisions. ”**

Harsh Agarwal
Neerx (DeHaat)

Session 2: Space to Farm: Space Technology in Agri-action

Moderator:

Dr Vinay Kumar Sehgal
PhD, Principal Scientist, Division of Agricultural Physics, Indian Agricultural Research Institute

Speakers:

Dr Rajasekhar Meka
Scientist-SG, Indian Space Research Organisation

Preeti Chowdhary
Founder & CEO
Global Harvest Pvt Ltd

Suraj K
Co-Founder & CEO
InnPact Solutions

Naveen Reddy
Sales Head India,
Axelspace Corporation

Rahul Dayal
Senior Manager – GTM & Partnerships, Satsure

Key Highlights

Satellite-Driven Monitoring and Policy Insights:

- Large-scale use of multi-sensor satellite data enables continuous monitoring of crop residue burning, yield forecasting, flood impacts, and crop conditions, providing actionable intelligence for air quality management, food security, and policy interventions.

Advanced Geo-Agricultural Modelling at Scale:

- Integration of satellite time-series, weather data, and crop simulation models through platforms like FASAL, SAMARTH, and FarmFusion delivers district-level yield maps, stress indicators, and early warning systems.

Precision Agronomy for Resource Efficiency:

- Site-specific nutrient, water, and stress management using advanced indices, evapotranspiration models, and soil moisture analytics improves fertilizer efficiency, irrigation scheduling, drought resilience, and climate-adaptive farm management practices.

High-Resolution Earth Observation for Actionable Intelligence:

- Commercial EO constellations and multispectral platforms provide frequent, high-resolution imagery enabling crop health analysis, stress detection, land-use monitoring, and integration with agronomy, genomics, and enterprise decision systems.

Geo-AI Platforms Enabling Farmer-Centric Digital Twins:

- Unified Geo-AI stacks combine satellites, AI/ML, agronomy, and land records to build scalable, plot-level digital twins, supporting irrigation advice, regenerative practices, insurance, credit access, and farmer-centric decision-making.

Operational Impact Across Finance, Resilience, and Inclusion:

- Satellite intelligence is transforming agri-lending, drought management, and rural resilience by reducing verification costs, improving loan approvals, guiding watershed interventions, and expanding formal credit and climate resilience for smallholders.

> **“By integrating multi-sensor satellite data, weather intelligence, and crop simulation models, we can monitor residue burning, forecast yields, and manage water and nutrients at scale—transforming geospatial science into actionable intelligence for food security and environmental governance.”**

Dr. Vinay Kumar Sehgal
PhD, Principal Scientist, Division of Agricultural Physics, ICAR-IARI

CLIMATE CHANGE & DISASTER MANAGEMENT SUMMIT

Theme: Risk to Readiness: Building Climate-Smart and Disaster-Ready India

Supporting Partner

Session 1: Vision 2047 – Resilient India through Climate-Integrated Policy

Guest Address & Chair

Lt Gen SA Hasnain
PVSM, UYSM, AVSM, SM, VSM*
Member
National Disaster Management Authority

Keynote Address:

Madhav Pai
Chief Executive Officer, WRI India

Dr C N Prabhu
Director, Bihar Mausam Sewa Kendra
Government of Bihar

Speakers:

Satish Kamat
President, Sri City Integrated Business City

Areendran Gopala
Director Tech for Conservation (Remote Sensing & GIS), World Wide Fund for Nature (WWF India)

Dr (Col)K C Tiwari
Professor
Delhi Technology University (DTU)

Key Takeaways

Climate Risks as Emerging National Security Priorities
- Climate hazards now reshape security, disrupt border infrastructure and drive population shifts, requiring national-level resilience as a strategic priority.

Urban Growth Deepening Climate Exposure
- Peri-urban expansion, construction on drainage systems and low-green informal areas heighten floods, heat stress and water risks across growing cities.

Geospatial Data as a Core Planning Backbone
- Risk maps, suitability models and digital twins are guiding industrial siting, infrastructure design and ecological restoration for climate-resilient development.

Hyperlocal Data Driving Real-Time Decisions
- IoT weather networks, high-frequency sensors and analytics enable granular flood, drought, fog and heat monitoring for targeted district-level action.

Advanced Early Warnings Saving Lives
- Integrated sensing and ML-based triggers extend alert lead times, especially for lightning, turning climate signals into actionable safety intelligence.

Climate-Resilient Industry as Economic Imperative
- Industrial competitiveness depends on resilient utilities, risk-informed siting and rapid recovery from disruptions in climate-sensitive manufacturing corridors.

> “In a world of cascading and compounding hazards, climate resilience depends not on single forecasts, but on integrated, impact-based, multi-hazard early warning systems that translate science into timely action.”

Rahul Saxena
Scientist G & Head Hydrometeorology, India Meteorological Department (IMD)

Session 2: Disaster Management for a Multi-Hazard Nation

Moderator:

Dr S P Aggarwal
Director, North Eastern Space Applications Centre (NESAC)

Keynote Address:

Rahul Saxena
Scientist G & Head
Hydrometeorology, India Meteorological Department (IMD)

Speakers:

Dr Seema Joshi
Vice President - Strategic Initiatives
Esri India

Dr Manjit Singh
Associate Professor, Department of Geography, Central University of South Bihar (CUSB)

Akshay Loya
Chief Executive Officer, GISKernel

Amit Sharma
Co-Founder and Director, Matrixgeo

Dr Garima Aggarwal
Senior Consultant, National Institute of Disaster Management

Key Takeaways

Rising Climate Volatility

- Extreme rainfall compression, cloudbursts, cyclones and cascading hazards are increasing. India requires more precise, impact-focused forecasting and integrated multi-hazard management to anticipate intensity, locations and secondary risks.

Fragmented Early Warning Systems

- Despite advancements in satellites, radars and IBF tools, interoperability gaps persist. Unified standards, platform integration and real-time data exchange are essential to build a seamless national early warning ecosystem.

Last-Mile Warning Gaps

- Warnings must reach communities rapidly, yet institutional, technological and local-capacity gaps limit impact. Strengthening field connectivity, feedback loops and dissemination channels is critical to save lives.

Predictive Geospatial Intelligence

- Cascading hazards such as GLOFs, landslides, floods and subsidence demand proactive modelling. Integrating AI, imagery, digital twins and scenario analytics improves foresight and anticipatory action.

Unified Real-Time Platforms

- Identical hazards cause unequal impacts. Vulnerable regions with low-capacity face higher losses, underscoring the need to align scientific assessment with community contexts and behavioural understanding.

Community-Centric Risk Understanding

- Automated platforms that analyse satellite/aerial imagery, classify debris and generate cost estimates can accelerate response workflows and reduce delays in damage assessment and recovery planning.

Session 3: Planning for Extremes – Smart Cities & Infrastructure

Moderator:

Dr Umamaheshwaran Rajasekar
Urban Resilience Advisor, Coalition for Disaster Resilient Infrastructure (CDRI)

Speakers:

Dr Sabin Thazhe Purayil
Scientist F, Indian Institute of Tropical Meteorology (IITM)

Chelluri Srihari
Deputy Manager- Business Development, Shijay Projects India

Namita Gupta
Founder, Airveda

Mithun Anand
Co-Founder, Chief Technology Officer, Innpact Solutions

Vamsi Krishna
CoFounder and Chief Technology Officer, Aurassure

Rohit Magotra
Deputy Director, Integrated Research and Action for Development (IRADe)

Yetender Singh Negi
Regional Sales Manager
IGIS Private Limited

Key Takeaways

Climate Extremes Are a Development Crisis

- Disaster losses erase economic gains, costing USD 800 billion annually. Climate impacts must shift from environmental concern to core development planning, public finance, and urban governance priorities.

Infrastructure Resilience Drives GDP Protection

- Infrastructure failure creates sevenfold GDP losses. Resilient, geophysics-informed infrastructure design delivers outsized returns. Smart cities must integrate multihazard engineering and resilience criteria in all urban systems.

Warming Is Human-Driven and Intensifying Risks

- Human-driven warming increases extreme rainfall, heat waves, and compound hazards. India faces 10–40 percent higher precipitation, requiring engineering-led adaptation, risk-sensitive planning, and predictive modelling.

Rapid Vulnerability Assessment Enables Scale

- Traditional assessments cannot cover 900 cities. Rapid frameworks using existing data enable vulnerability mapping across hazards, infrastructure, governance, and socioeconomic factors, supporting ward-level, season-specific interventions.

Hyperlocal Intelligence Enables Real-Time Action

- Dense sensor networks with satellite data deliver real-time climate intelligence. Minute-level insights enable early warnings, targeted operations, and scenario testing through digital twins.

Engineering and Geospatial Tech Build Smart Cities

- Non-destructive geophysics, AI analytics, and hazard simulations embed resilience in planning. Smart cities combine subsurface data, spatial modelling, and governance tools for decision-making.

Session 4: From Maps to Action – Empowering Communities through collective action data for sustainable future

Moderator:

Pradip Kumar Parida
Associate Professor in Public Policy
Jawaharlal Nehru University (JNU)

Speakers:

Dr Ajay Kumar Naithani
Senior Scientist & HoD Engineering Geology Department, National Institute of Rock Mechanics (NIRM)

Pyush Dogra
Senior Environmental Specialist
The World Bank

Richu Sanil
Senior Project Manager (Research & LME), Foundation For Ecological Security (FES)

Dr Deepak Kumar Raj
Product Specialist (Research & Development), SATPALDA

Nihal Mohan M
R&D Lead, Skylark Drones

Ajeet Kanaujia
Field Application Engineer
FARO Technologies India

Key Takeaways

Policy Impact Depends on Last-Mile Delivery

- Climate and disaster policies create value only when translated into district- and village-level action, aligning national intent with local realities, livelihoods and institutional capacity.

Context-Specific Planning Is Essential

- Uniform development models weaken resilience. Climate risks demand region-specific, agro-climatic and socio-cultural planning tailored to mountains, coasts, urban corridors and tribal landscapes.

Community Ownership Drives Resilience

- Resilience strengthens when communities own data, planning and decisions. Participatory institutions convert technical solutions into trusted, implementable actions rooted in livelihoods.

Geospatial Intelligence Enables Smarter Decisions

- Satellite, drone and GIS tools deliver impact only when combined with skilled interpretation, governance frameworks and informed planning guiding land use and infrastructure choices.

Action Emerges from Knowledge, Incentives and Capacity

- Climate data leads to change when stakeholders understand it, are motivated to act, and possess the authority and capacity to alter behaviours and systems.

Predictive Risk Modelling Reduces Losses

- Hazard forecasting and terrain modelling enable early warnings, safer infrastructure design and targeted interventions, cutting human, economic and environmental losses.

Session 5: Climate Finance & ESG

Moderator:

Shubhashis Dey
Senior Expert - Climate Finance
NITI Aayog

Speakers:

Bhaskar Padigala
Climate and Environment Advisor,
British High Commission (New Delhi)

Debal Mitra
Senior Program Manager, Climate
Policy Initiative (CPI)

> “India can no longer borrow planning and governance templates; the scale and nature of our urbanization demand home-grown, data-driven climate policies that integrate risk, vulnerability, and development.”

Madhav Pai
Chief Executive Officer, WRI India

Key Takeaways

Livelihood-Aware Climate Action

- Effective climate strategies must respect livelihood realities, cultural practices and food systems, acknowledging residual emissions while prioritising equity, adaptation and gradual transitions for vulnerable populations.

Risk–Return Logic Governs Climate Finance

- Climate finance follows standard investment principles; private capital flows only when risks and returns align, while early-stage or uncertain interventions require public and development finance support.

Public Finance Enables Climate Public Goods

- Early warning systems, climate data, resilience planning and monitoring generate societal value rather than profits, making sustained public funding essential to unlock future private participation.

Climate Change Is a Shared but Unequal Challenge

- While historical emissions originate largely in the Global North, climate impacts are universal, demanding collaborative global action that balances responsibility, development priorities and resilience needs.

Multilateral Goals Need Integrated Implementation

- Frameworks like NDCs and adaptation targets succeed only when translated into coordinated, cross-ministerial action that breaks silos and aligns climate objectives with development and governance systems.

Domestic Leadership Drives Climate Outcomes

- Long-term climate success depends on mobilising domestic finance, institutions and private-sector action, rather than relying on external funding to deliver nationally determined climate priorities.

BLUE ECONOMY AND HYDROSPATIAL INFRASTRUCTURE SUMMIT

Theme: Unlocking Marine Potential through Hydrospatial Intelligence

Session 1: India's Blue Economy Vision 2047: A Geospatial and Space Perspective

Moderator:

Chime Youdon
Head of Blue Economy & Climate Change Cluster, National Maritime Foundation (NMF)

Keynote:

Mr Pramod Patil
General Manager – ESDM & Space-Tech, Karnataka Innovation & Technology Society (KITS)

Speakers:

Dr Sanjay Joglekar
Chief Technology Officer, Mumbai Port Authority

Cmde Debesh Lahiri (Retd)
Advisor, The National Centre of Excellence for Green Ports & Shipping (NCoEGPS)

Dr Pushp Bajaj
Programme Lead – Climate Resilience & Adaptation Finance, Council on Energy, Environment and Water (CEEW)

Key Takeaways

Advancing Space and Marine Technology Ecosystems:

- Highlights India's long-term strategy to strengthen space-tech and marine-tech through skill development, investment incentives, infrastructure expansion, innovation ecosystems, and regional centers enabling scalable research, industry, and operational maritime applications.

Smart Ports and Digital Maritime Infrastructure:

- Emphasizes port modernization through geospatial and space-based systems integrated with AI/ML, IoT, blockchain, 5G, and digital twins to enable predictive maintenance, automated logistics, satellite monitoring, and data-driven operational efficiency.

Future-Ready Maritime Operations:

- Showcases adoption of autonomous vessels, green port technologies, cloud and edge computing, interoperable platforms, digital twins, and circular-economy processes to enhance sustainability, resilience, competitiveness, and long-term strategic maritime growth.

Climate Risk Insights for Coastal and Marine Regions:

- Focuses on geospatial climate assessments identifying floods, cyclones, droughts, heat, and monsoon variability using hazard, exposure, sensitivity, and adaptive capacity frameworks to guide climate-resilient coastal and marine infrastructure planning.

Geospatial Foundations for Blue Economy 2047:

- Highlights the role of EO satellites, digital ocean mapping, maritime GIS platforms, and coastal monitoring aligned with Sagarmala, Deep Ocean Mission, and Maritime India Vision to strengthen ocean governance and resilient blue-economy development.

Innovation and Sustainable Ocean Governance:

- Emphasizes multi-stakeholder collaboration, research-driven innovation, climate analytics, and geospatial intelligence to support marine spatial planning, green transitions, efficient resource management, and position India as a leader in resilient ocean economies.

Fireside Chat: Ocean Corridors and Smart Ports – Building India's Maritime AI Ecosystem

In Conversation With:

Chair:

Cmde. Sujeet Samaddar
Founder and Secretary, Society for Aerospace, Maritime and Defence Studies (SAMDeS)

Ashish Dhawan
Senior Consultant – Infrastructure, Esri India

> "By combining satellite intelligence, field monitoring, and predictive analytics, aquaculture can transition to climate-resilient, data-driven ocean farming, enhancing productivity while protecting marine biodiversity along India's extensive coastline."

Devleena Bhattacharjee
Chief Operating Officer & Founder
Clima Crew

Key Takeaways

Strategic Port Visualization:

- 3D digital twins enable simulation of port layouts, infrastructure, and workflows before construction, reducing errors, optimizing costs, and embedding climate resilience to deliver efficient, safe, and sustainable ports supporting India's maritime trade growth.

Holistic Asset Oversight:

- Integrated mapping of pipelines, vessels, and port services enables coordinated monitoring across departments, improving operational efficiency, resource optimization, safety, and informed decision-making while strengthening port performance and infrastructure reliability in complex maritime environments.

AI-Driven Workflow Optimization:

- AI, machine learning, and predictive models automate port logistics and operations, reducing manual intervention, enabling real-time decisions, improving accuracy, responsiveness, and efficiency, and supporting sustainable, data-driven maritime and port management practices.

Sustainable Shipping Routes:

- Geospatial analytics identify optimal routes for low-emission vessels, establishing green corridors that reduce fuel consumption and environmental impact, support net-zero commitments, enhance efficiency, and promote sustainable, decarbonized shipping within India's Blue Economy.

Integrated Data Ecosystem:

- Unified platforms integrate AIS, IoT, hydrographic, oceanographic, and space-derived data to enhance situational awareness, operational planning, and risk management, enabling timely, coordinated, and informed decisions across ports and maritime stakeholders.

Comprehensive Marine Mapping and Collaboration:

- GIS data cubes and collaborative platforms combine seabed, currents, winds, and climate layers, resolving spatial conflicts, guiding port siting and navigation, and enabling coordinated planning, research, and policy action across India's maritime ecosystem.

Session 2: Smart Aquaculture and Marine Biodiversity – Technologies for Sustainable Ocean Farming

Moderator:

Devleena Bhattacharjee
Chief Operating Officer & Founder, Clima Crew

Speakers:

Murugan Chidhambaram
Chief Technology Officer, Aquaconnect

Shaurya Agarwal
Chief Executive Officer, & Co Founder, Blue Wave Aquaculture

Tanmaye Seth
Director, Aquagri processing Pvt Ltd.

Pratap Sinha
Advisor, Deutsche Gesellschaft fur Internationale Zusammenarbeit India (GIZ India)

> **“ Hydrospatial infrastructure must evolve from periodic surveys into a continuously updated intelligence system, integrating bathymetry, satellites, and analytics to support navigation safety, port efficiency, and climate-resilient maritime decision-making. ”**

Dr. (Cdr.) Arnab Das
Founder & Director
Maritime Research Center (MRC)

Key Takeaways

Tech-Enabled Precision Aquaculture:

- AI, geospatial analytics, and real-time monitoring enable climate-resilient ocean farming through data-driven decisions, healthier ecosystems, predictable yields, and sustainable management, strengthening food security and long-term growth of India’s blue food systems.

Water-Efficient High-Yield RAS Farming:

- Recirculating Aquaculture Systems support low-water, near-zero-waste production in controlled environments, enabling year-round farming near markets, reducing risks, improving farmer incomes, and advancing environmentally responsible, high-yield aquaculture practices.

Satellite Intelligence for Seaweed Cultivation:

- Remote sensing and ocean-parameter mapping identify optimal seaweed zones and conditions, enabling scalable cultivation, efficient monitoring, biodiversity protection, and strengthened blue bioeconomy development through sustainable, data-informed marine biomass production.

Bioprocessing and Circular Blue Bioeconomy:

- Advanced seaweed bioprocessing converts biomass into biostimulants, feed additives, food ingredients, and bioplastics, supporting circular economy models, value addition, sustainable production, and expansion of high-value blue bioeconomy opportunities.

Hybrid Forecasting for Resilient Aquaculture Planning:

- Integrating satellite data with field intelligence improves harvest forecasts, disease detection, and supply-demand planning, reducing uncertainty, strengthening value chains, and enabling adaptive, climate-resilient management of aquaculture operations.

Digital Traceability and Blue Food Collaboration:

- End-to-end digital traceability and multi-stakeholder collaboration enhance transparency, compliance, market trust, value-chain resilience, and technology-driven growth, strengthening India’s sustainable, competitive, and future-ready blue food economy.

Session 3: Integrated Hydrospatial Infrastructure – Building India's Next-Gen Ocean Knowledge Grid

Moderator:

Dr (Cdr.) Arnab Das
Director, Maritime Research Centre (MRC)

Speakers:

Dr Rao S Ramayanam
Chief Executive Officer, Sathya Technology Services, Pvt. Ltd

Prakash Khanzode
Founder & Director, i4 Marine Technologies

Dr Karan Gupta
Founder & Director, STVENANT LLP

Balaga Manohar
Founder, Jayanth Ocean Vision Pvt Ltd

Key Takeaways

Unified Marine Data Backbone:

- Integrated bathymetric, coastal, and maritime datasets create a unified ocean intelligence backbone enabling safe navigation, smart ports, real-time operations, and data-driven governance across India's maritime domain.

Next-Gen Coastal Intelligence Systems:

- Satellite altimetry, shoreline-change mapping, and wave forecasting deliver continuous coastal intelligence for hazard prediction, port siting, and resilient infrastructure planning, strengthening erosion, storm, and sea-level risk management.

Autonomous Hydrographic Surveying:

- Autonomous survey vessels with advanced bathymetric sensors, PPK-GPS, and real-time analytics enable continuous, high-precision riverine and coastal mapping, replacing infrequent surveys and supporting sustainable marine infrastructure planning.

Dynamic Digital Twins for Water Systems:

- Cloud-based digital twins transform hydrospatial data into predictive insights for siltation control, dam health, flood modeling, and spatial planning, strengthening resilience and long-term inland and coastal water management.

Integrated Coastal Safety Architecture:

- Satellite-integrated safety architectures combining geo-fencing, AIS, and multi-tier communications enhance maritime domain awareness, reduce operational risks, improve fisheries safety, and strengthen cross-border monitoring across India's waters.

Interoperable Standards and Capacity Building:

- Open standards, interoperable data frameworks, indigenous R&D, and capacity-building initiatives overcome silos, scale hydrospatial skills, reduce import dependence, and enable a resilient, future-ready ocean governance ecosystem for India.

> **"India's Blue Economy Vision 2047 is a strategic shift from infrastructure-led growth to data-driven maritime intelligence, positioning geospatial and space-based systems as the backbone of ports, logistics, and ocean governance."**

Dr. Sanjay Joglekar
Chief Technology Officer, Mumbai Port Authority

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National Maritime Foundation

CAPACITY BUILDING SYMPOSIUM

Theme: Bridging the Skill Gap

Session 1: Policy Vision for a Future-Ready Workforce

Guest Address and Chair:

Prof. Prateek Sharma
Vice Chancellor, Delhi Technological University (DTU)

Guest Address & Co- Chair:

Rajesh Mathur
GACI (GIS Academia Council of India), Esri India

Keynote Speakers:

Dr Manoranjan Mohanty
Scientist G & Head, Department of Science & Technology (DST)

Dr Vidhya, Director
Institute of Remote Sensing (IRS), Anna University, Chennai

Dr Y. Nithiyanandam
Professor & Head - Geospatial Research Programme, Takshashila Institution

Karan Singh
Head - Government Relations & Stakeholder Engagement, NASSCOM

Key Takeaways

Unified National Workforce Framework:

- NEP 2020, Skill India Mission, and Atmanirbhar Bharat together create an integrated framework for geospatial and space skilling, enabling aligned learning pathways, capacity building, and development of a future-ready national talent ecosystem.

Technology-Integrated Curriculum Modernisation:

- AI/ML, cloud GIS, EO analytics, digital twins, automation, and UAVs are embedded into curricula through competency-based modules, hands-on training, and modern laboratories aligned with evolving industry and domain requirements.

Collaborative Talent Development Ecosystem:

- A structured government–academia–industry ecosystem enables co-created courses, shared R&D platforms, domain-specific training pathways, and seamless integration between education, innovation, and workforce readiness.

Scalable National Capacity-Building Architecture:

- Digital academies, modular certifications, micro-credentials, and regional hubs provide tiered learning pathways, expanding nationwide access from foundational awareness to advanced specialization in geospatial and space technologies.

Embedding Emerging Technologies Across Skills:

- Technology-first pathways integrate AI–ML workflows, advanced EO analytics, cloud-native platforms, and autonomous mapping, ensuring adaptability and alignment with rapidly evolving global geospatial and space technology applications.

Global Benchmarking and Multi-Domain Mobility:

- Alignment with international standards and cross-sector skill pathways enhances global competitiveness, workforce mobility across domains, and positions India as a resilient contributor to the global geospatial and space talent ecosystem.

Session 2: Need for Job-Ready Skills-Trainings for the Space and Geospatial Workforce

Guest Address and Moderator:

Dr VK Dadhwal
Lead Advisor- Science, Environmental Defense Fund.

Speakers:

Col Pankaj Fotedar, VSM
Chief Executive Officer, Geokno

GV Sreeramam
Chief Executive Officer, NeoGeoInfo Technologies, India

Varun Bhatia
VP - Projects & Learning Resources, Electronics Sector Skills Council of India (ESSCI)

Dwaipayan Dighal
Vice President - Business Development, Esri India

Key Takeaways

Industry Demand for Job-Ready Geospatial Skills:
- Persistent talent shortages are driving demand for professionals with applied technical proficiency, domain understanding, and hands-on experience who can contribute immediately to real-world geospatial and space operations.

Bridging Academia–Industry Skill Gaps:
- Misalignment between academic models and industry needs highlights the importance of applied training, real-world datasets, field exposure, and project-based learning for smoother workforce transition into production environments.

Hands-On Training as a Workforce Imperative:
- Simulation labs, live projects, internships, and on-the-job training build technical confidence, strengthen operational skills, and significantly improve employability across geospatial analytics, Earth observation, and spatial decision-support roles.

Micro-Certifications and Modular Pathways:
- Stackable micro-certifications and modular learning pathways enable rapid upskilling, role-specific competency development, and continuous learning aligned with fast-evolving geospatial and space technology requirements.

In-House Reskilling and Upskilling Models:
- Organizations are adopting structured in-house training, role-based learning tracks, and technology-focused reskilling programs to address immediate capability gaps and enhance workforce adaptability.

Collaborative, Tech-Aligned Workforce Development:
- Public–private collaboration embedding AI, EO analytics, digital twins, and cloud platforms aligns job-ready skilling with national priorities, strengthening India's competitiveness, self-reliance, and long-term growth in geospatial and space sectors.

> **“ In the geospatial sector, employability is driven by hands-on skills and exposure to live datasets and tools, not by degrees alone—this is where academia and industry must work together. ”**

Prof. Rishikesh Samant
Professor & Head - Department of Geology, St. Xavier's College, Mumbai

Academic Partners

Skilling Partners

Session 3: Career Pathways and Pay-Scale: Inspiring the Next Generation of Space and Geospatial Professionals

Moderator:

Maj Gen (Dr) Dilawar Singh

Guest Address:

Dr T. Kishen Kumar Reddy
Vice chancellor, Jawaharlal Nehru Technical University, (JNTU)

Speakers:

Manushi Bhatt
Assistant Professor, CEPT University

Dr S.P. Singh
Director, Amity Institute of Geo Informatics and Remote Sensing (AIGIRS)

VSS Kiran
Founder, Garudalytics

Dr. Reet Kamal Tiwari
Associate Professor & Head, Department of Civil Engineering, IIT Ropar

Key Takeaways

Structured Career Pathways Across Sectors:

- Space and geospatial ecosystems offer defined career tracks across analytics, UAVs, satellite systems, GeoAI, disaster resilience, and urban applications, spanning government, industry, startups, and academia with long-term mobility.

Bridging Education and Job Expectations:

- Persistent gaps between academic outputs and job expectations require clearer role mapping, outcome-based education, and early exposure to real-world geospatial and space work environments.

Skill Fluency Beyond Technical Tools:

- Employability depends on combined proficiency in geospatial technologies, data interpretation, programming, communication, and documentation, enabling effective collaboration and readiness for complex, multidisciplinary project environments.

Digital Platforms as Career Accelerators:

- MOOCs, online certifications, innovation hubs, and student platforms accelerate skill discovery, support self-paced learning, and help learners align competencies with rapidly evolving industry requirements.

National Programs Supporting Career Mobility:

- Initiatives such as PMKVY, Study in India, and Skill India International Centres expand certified training, global exposure, and workforce mobility across domestic and international geospatial and space sectors.

Mentorship, Advanced Skills, and Inclusive Growth:

- Targeted upskilling in GeoAI, digital twins, and EO analytics, combined with mentorship, experiential learning, and inclusive pathways, builds globally competitive, innovation-driven geospatial and space talent.

> **“ Bridging the skill gap requires clearly defined job roles, national skill frameworks, and structured career pathways that align academic training with real industry requirements. ”**

Dr Y. Nithiyanandam
Professor & Head - Geospatial Research Programme, Takshashila Institution

DEFENCE & INTERNAL SECURITY SUMMIT

Theme: The Future of Defence: Intelligence- Driven and Tech- Powered

Supporting Partner

National Maritime Foundation

Lt Gen AKS Chandele PVSM, AVSM, PhD
President - Defense, Internal & Public Safety Geospatial World

Brig Arun Sehgal
PhD

Lt Gen Rajiv Sahni AVSM, VSM
DGEME

Gen (Dr) Vijay Kumar Singh PVSM, AVSM, YSM
Governor of Mizoram

Lt Gen Vikas Rohella, SM**
E-in-C

AVM M Midha, VM
DG
Defence Space Agency

Inaugural Session

The discussion focused on the evolving global security environment and the growing centrality of geospatial and space-based intelligence in modern defence. Speakers discussed shifting global power blocs, strategic competition between major powers, and India's role as an emerging middle power pursuing strategic autonomy in a multipolar world. The session emphasized geospatial intelligence in military operations, highlighting data fusion, AI-enabled awareness, and electronic and space-based surveillance with lessons from Operation Sindoor. It underscored the need for modernization, integrated warfare, and focus on maritime and Indo-Pacific security. The discussion called for coherent policies, agile procurement, indigenous innovation, skilled manpower, and collaboration among defence forces, space agencies, academia, and industry to strengthen India's national security framework.

Welcome Address

Lt Gen AKS Chandele, PVSM, AVSM, PhD,

Welcomed the panelists by giving a brief overview of Geospatial World, a 28 – year old enterprise promoting space and geospatial technologies headquartered in India with a global footprint. The company operates through three verticals: communications, research and consultancy, and events. Research and consultancy work includes projects for the UN, EU, Middle East, and regional governments.

He emphasized on the theme of the program on how geospatial intelligence, space-based capabilities, and AI-enabled networks are now the core of national security, demanding rapid modernization, jointness, and indigenous industrial capacity.

Brig Arun Sahgal, PhD
Global Security Environment

Brig Arun Sahgal presented a detailed analysis of the global security environment. He discussed the world's power blocs - particularly the Western Euro-Atlantic alliance led by the United States and its strategic competition with China. He elaborated on middle powers like India, Japan, and Saudi Arabia, emphasizing India's emerging global role. He also explored Asian regional power dynamics, the signifiocance of maritime domains, the Indo-Pacific and QUAD alliances, and the need for India to develop coherent policies and balance relations with Russia, the U.S., and China. He concluded by highlighting India's strategic autonomy within a multi-polar world.

Lt Gen Rajiv Sahni AVSM, VSM
Keynote Address on Military Application of Geospatial Intelligence

Lt. Gen Sahni focused on the military use of geospatial intelligence (GEOINT) for national security. Drawing from his experience as DGIS, he described the integration of geographic, AI, and real-time data for operations such as Operation Sindoor. He explained electronic and battlefield surveillance systems, data fusion from multiple sensors, and AI-based battlefield awareness models like SAMA (Situational Awareness Module for the Army). He concluded with recommendations to strengthen technology absorption through agile procurement, testbeds, and data-sharing frameworks.

Lt Gen Vikas Rohella, SM**
Address on Geospatial Technologies and National Defense

Lt Gen Vikas Rohella, SM** shared personal and professional experiences illustrating geospatial technology in military infrastructure and defence operations. He explained how terrain analysis, digital elevation models, and satellite mapping are crucial for planning airfields, tunnels, and logistics. He urged for national geospatial integration linking military, intelligence, and disaster agencies. His suggestions included strengthening indigenous UAV and satellite capabilities, developing skilled manpower, and fostering academia-industry collaboration for AI-based geospatial analytics.

AVM Manu Midha VM
Space-Based Geospatial Capabilities

AVM Manu Midha highlighted the critical link between geospatial intelligence and space technology in modern warfare. Referring to Operation Sindoor, he illustrated how integrated networks and space-based ISR enhance precision targeting and command efficiency. He emphasized that space is vital for surveillance, navigation, and secure communications, asserting that sovereignty in space capabilities is a national security necessity. He called for collaboration among ISRO, defence forces, academia, and industry to create a unified, adaptive geospatial and space defence ecosystem.

Gen (Dr) Vijay Kumar Singh PVSM, AVSM, YSM
Governor of Mizoram

Governor addressed the gathering, emphasizing the importance of technological modernization in the armed forces. He discussed how India must harness GEOINT to strengthen national security, enhance jointness, and prepare our armed forces for the challenge of tomorrow.

"Understanding the Centrality of Geospatial Intelligence. It is the cognitive engine that turns raw spatial data into strategic foresight. Every domain of warfare, be it land, air, maritime, cyber, and space, now requires geospatial awareness as a foundational layer.

Today's Geospatial ecosystem is fluid, dynamic, and predictive. GEOINT is critical to India's Security Environment because of a 15,000 km land border, a 7500+ km coastline with maritime threats, grey zone activities, strategic chokepoints, and internal security challenges.

A unified GEOINT architecture is important and will ensure a common operational picture, interoperable geospatial databases, faster decision cycles, and reduction in fratricide risk. Information Intelligence analysis based on many sensors, multispectral inputs make operations clinical and saves own casualties."

The future commander will fight battles not on the map but with the map."

Session 2: Multi-Domain Operations – Intelligence & Technology in Action

Chair

Lt Gen Vineet Gaur
PVSM, AVSM, Indian Army

Speakers

Col Pawan Pandey
Indian Army

Lt Col Amandeep Singh
Indian Army

Amit Kumar
Co-Founder & COO, Suhora

Lt Col Puja Jha
Indian Army

Krishna Rao TVB
VP– Presales, Esri India

Vasudev Rao Vemana
Senior Sales Engineer, Planet

Key Takeaways

- Multi-domain operations are about simultaneous, coordinated use of land, air, sea, space, cyber and cognitive domains to create converged effects, not sequential "air-then-land-then-sea" campaigns.
- The ultimate aim is to shape the adversary's decision-making and perception (information operations, narratives, IW) while accelerating own OODA loops.
- Geospatial intelligence provides "what is where and what is what" and underpins mission planning, change detection, precision targeting and common operating picture across domains.
- The focus must shift from collecting more geo-data to producing mission-specific, "talking" data sets those commanders can understand without technical intermediaries.
- Open standards (OGC/BIS/ISO), cloud platforms and a "one map for the nation" are needed for sensor fusion, interoperability and authoritative, shared base maps across services.
- Effective MDO requires coordinated roles for academia (ideas), industry (products), military (operationalization) and think-tanks (concepts), supported by enabling government policy and funding.

Session 3: GeoIntelligence for Maritime Security

Chair

Vice Admiral Pradeep Chauhan, AVSM*, VSM,
Director General, National Maritime Foundation

Speakers

Cmde Atul Deswal
Deputy Director General, Navy Cyber Group & Chief Information Security Officer Indian Navy

Dr Debjyoti Pal
Senior VP - Business Development, GalaxEye

Dr Kapil Kumar Malik
Regional Sales Manager, Synspective

Sam Lieff
Vice President of Sales, Earth Daily Analytics

Key Takeaways

- China's CHORUS / Blue Ocean model was highlighted as an example of treating surface, sub-surface, seabed, near-space and outer space as one fused maritime picture, not separate silos.
- Near-daily medium-resolution imagery, higher-resolution EO, SAR and RF data, fused with AIS, enable detection/classification of ships (including "dark" vessels), grey fleets, trans-shipment and anomalous patterns at global scale.
- Global Monitoring Systems use years of archive imagery to build "normal vs abnormal" activity baselines at ports, shipyards and strategic sites, then trigger alerts when patterns deviate.
- Highly digitized ports and ships (integrated OT/IT, remote OEM access, AIS dependence, GNSS dependence) create attack surfaces for ransomware, GPS spoofing and AIS manipulation, as seen in recent global incidents.
- India needs sector-specific structures (e.g., maritime SOC / CERT for ports, shipping, navy/coast guard and critical suppliers) to continuously monitor and respond to maritime cyber threats.
- Undersea cables, maritime satcom and resilient/sovereign PNT (GNSS + backups like inertial, quantum clocks, RF signals) are strategic assets that must be monitored and hardened as part of maritime security.

Session 4: Fireside Chat – Tech for Sovereign Defence Capability: Precision, Speed and Autonomy

Chair

Lt Gen Anil Kapoor AVSM, VSM, PhD
Former DG EME

Speakers

Maj Gen Shivendra Kumar
ADG EME, Indian Army

Lt Col V Ramanathan
VP - Strategic Liaison, SatSure

Key Takeaways

- Sovereign, resilient PNT is foundational: Navigation and timing cannot rely solely on vulnerable or foreign GNSS; India must build layered sovereign PNT using NavIC, quantum clocks, inertial systems and terrestrial/space backups.
- AI, quantum, neuromorphic sensing/processing and edge computing are necessary to handle machine-to-machine data volumes, operate in contested networks and enable real-time, autonomous or semi-autonomous action.
- Emphasis on common AI platforms (data pipelines, reusable models) that can support multiple defence and civil use-cases, rather than isolated, single-purpose AI tools.
- Export-controlled GPUs, foreign crypto standards and fragmented training data constrain "sovereign" AI; India must develop indigenous compute, cryptography and curated datasets for defence AI.
- Quantum computing can break classical encryption and "undelete" data, demanding post-quantum cryptography and quantum-certified deletion, even as quantum sensing enables new ISR and PNT capabilities.
- Defence must anchor demand for rugged, secure variants of commercial deep tech, while sharing ranges, data and problem statements so industry and academia can co-develop sovereign solutions.

Session 5: Network Centric Warfare – Towards Integrated & Real-Time Operations

Chair

Lt Gen Harsh Chhibber AVSM, VSM, PhD, DGIS

Speakers

Lt Gen KS Brar, PVSM, AVSM

Rajeev Gambhir
Dy Director General, SIA-India

Col Anupam Tiwari
PhD, 515 Army Base Workshop, Indian Army

Col Amit Mehna, VSM, DGIS
Indian Army

Saranya M
Manager – Presales, Esri India

Key Takeaways

- Network-centric warfare is about accelerating the OODA loop—seeing first, deciding first, acting first—through shared situational awareness across services and domains
- NCW requires a designed architecture (common data models, C4ISR workflows, tasking systems, open APIs, ontologies) and a planned evolution of legacy plus new systems, not isolated procurements.
- Key pillars discussed included architecting, reform, capabilities space as NCW's "high orbit", integration, data truth/provenance, engineered interoperability, cognition (human + AI), tactical edge computing, unifying old/new, rebalanced offsets, and ecosystem building.
- Drones or individual platforms only become decisive when connected into grids that fuse sensors, C2, and shooters; otherwise, effects remain local and limited.

Session 6: Securing Borders, Cities & Cyberspace - The Internal Frontline

Chair

Lt Gen Dushyant Singh, PVSM, AVSM
DG CLAWS

Speakers

Brig Siddharth Malik
SM, Commandant- 509 Army Base Workshop, Indian Army

Col Chetan Dewan
Indian Army

Cdr Mukesh Saini
Former National Information Security Coordinator (GOI), Technology Advisor Dussat Global Technology

Key Takeaways

- Internal moles, corruption, and grey-zone threats (drones, cyber) are greater dangers than external enemies; narrative management and citizen vigilance are as critical as border defence.
- Four layers (detection via radar/RF/EO/acoustic, identification, assessment, mitigation via kinetic/non-kinetic) integrated with GIS for tracking; needs affordable, indigenous solutions for borders and cities.
- Shift from isolated sensors to AI-at-edge, tokenized fusion (optical fibre, UAVs, radar, quantum) with robust C2; challenges include power, false alarms, and resilient comms to shrink sensor-to-shooter timelines.
- EW jamming/spoofing risks civilian disruption; must be geospatially controlled, not ad-hoc, with strict regulations for startups/agencies.

Session 7: Sovereign Space Infrastructure

Chair

Lt Gen Anil Bhatt PVSM, UYSM, AVSM, SM, VSM
Director General, Indian Space Association

Speakers

AVM Pawan Kumar VM
Indian Air Force

Brig G Manoj
Defence Space Agency

Col Harinderjit Singh
DIPAC

Shravan Bhati
Founder & Chief Executive Officer, Satleolabs

Key Takeaways

- Independent SSA, PNT (NavIC/LEO), ISR, satcom essential to avoid dependence; 100,000+ satellites by 2030 demand debris/collision monitoring via radar/optical/AI.
- EO/SAR/maritime constellations (75+ planned) for all-weather coverage; battlefield transparency means plan assuming constant observation, with private industry for automation/fusion.
- Shift from availability to AI/ML for SAR-EO fusion, anomaly detection, base layers; wide-area + high-res for movement tracking across India's vast terrain.
- Micro-satellites with multi-band thermal for night/material detection (hidden sites, assets); startups accelerating sovereign capabilities.
- GEO/MEO/LEO for low-latency resilience; SDR, hub less, dynamic frequency for military nets; private role in SSA/PNT/space weather.
- Civil-military fusion imperative: Shared innovation for dual-use; rapid indigenous builds to match mega-constellations and ensure strategic autonomy.

Session 8: Stand Off and Precision Warfare-The New Normal

Chair

Lt Gen Neeraj Varshney, VSM
Comdt MCEME

Speakers

Brig Arun Kumar
ADG Military Survey, Indian Army

Maj Gen Ashok Kumar, VSM
Director General, CENJOWS

Gp Capt Shivkumar Pohare
Indian Air Force

Key Takeaways

- Long-range precision strikes (missiles/drones) on infrastructure paralyze enemies from afar; no territory needed, but exact first-hit accuracy via intel/radar/sensors is key.
- GNSS jamming/spoofing (e.g., Amritsar/Jammu/Delhi incidents) cripples PNT-dependent sectors (banking/energy/aviation); build layered redundancy (eLoran, LEO GNSS, backups).
- Today's focus on precision weapons and hypersonic missiles, with the Gulf Wars as the key proof-of-concept for precision in unstable regions.
- Kill chains blend space ISR, cloud AI, deep fires; erases frontlines, demands whole-of-nation (multi-spectral: cyber/quantum/drone/missile).
- Standoff preferred; relies on accurate targeting/GNSS, vulnerable to denial—pivot to resilient PNT architectures.
- R&D/infra/policy for standoff resilience; ground control, AI cyber defence, integrated efforts for future wars.

Session 9: Fireside Chat: Defence Procurement Conundrum

Chair

Lt Gen Sanjay Verma, PVSM, AVSM, VSM**
Advisor, DRDO

Speakers

Maj Gen CS Mann, AVSM, ADG, Army Design Bureau

Maj Gen (DR) Abhay Dayal, AVSM, VSM

Key Takeaways

- Updated procedures (ship/aircraft chapters) balance process/outcomes; incentivize private sector via Atmanirbhar, reduce foreign dependence.
- Designate domain leaders (guns/radars/tanks) for focused R&D/assured contracts; fix open tenders, enable spiral development like global giants.
- Curated training (Rashtriya Raksha Univ.), personnel continuity, collegiate decisions to cut bureaucracy/delays.
- Since 2001 private entry, startups emerging; need policy stability, investment, IDEX/TDF/Tech Board for R&D scaling.
- Can't wait for ecosystem maturity—smart procurement for today + domestic champions for tomorrow.
- Synergy military/academia/industry; economic opportunities in niches (PNT/drones/AI); align to military problems.

WATER MANAGEMENT SUMMIT

Theme: Digital Pathways for Water Sustainability: Rejuvenation, Resilience, and Smart Utilities

Track Sponsor

Knowledge Partner

DAY1

Session 1: Role of Digital Technologies in Integrated Water Planning & National Policy Frameworks

Chief Guest Address:

Hon'ble Minister of State

Shri Raj Bhushan Choudhary
Ministry of Jal Shakti, Government of India

Moderator:

Anshuman
Director – Water Resources, TERI

Keynote Address:

Shri Ramveer Tanwar
Chairperson, Say Earth

Sanjay Rana
Managing Director, Parsan Overseas Pvt. Ltd.

Madhukar Swayambhu
Co-Founder & Research Head, Vedic Srijan

Prakash Yadav
Senior Vice President – Energy, CS TECH Ai

Himayoon Naik
Deputy General Manager, Pioneer Foundation Engineers Pvt. Ltd.

Key Takeaways

Geospatial Intelligence for Integrated Basin Planning:

- Geospatial platforms, hydrological modelling, and real-time data systems such as NWIC and India-WRIS are enabling basin- and watershed-level planning for integrated and climate-resilient water governance.

Subsurface Intelligence through Advanced Geophysics:

- Advanced geophysical tools and groundwater modelling are strengthening subsurface intelligence, improving aquifer assessment, leak detection, and sustainable groundwater management in stressed regions.

Digitally Enabled National Water Programmes:

- National programmes including Namami Gange, Atal Bhujal Yojana, and the National Hydrology Project are increasingly supported by interoperable digital frameworks for evidence-based policy formulation.

Balancing Supply, Demand, and Behavioural Change:

- Balanced water management approaches combining supply-side infrastructure with demand-side efficiency and behavioural change are critical amid declining per capita water availability.

Blending Traditional Knowledge with Digital Tools:

- Integration of traditional water management practices with modern digital technologies is enhancing community participation and strengthening policy frameworks.

Startups and Private Sector as Innovation Catalysts:

- Startups and private-sector innovation are emerging as key enablers for scalable, technology-driven water planning and governance solutions.







Session 2: Water Allocation, Supply Management & Resilient Infrastructure Systems

Keynote Address:

Devendra Pratap Mathuria
Chief Engineer, Central Water Commission

Dr. Subrata Halder
Superintending Engineer, WRIDD

Suneet Manjavakar
Industry Head – Water, Esri India

Shyam Prasad
Founder & Director, Clear Water Dynamics

Key Takeaways

Equitable Water Allocation through Data Frameworks:

- Data-driven allocation frameworks are supporting equitable distribution of water for drinking, irrigation, and industrial needs amid growing scarcity and regional disparities.

Real-Time Monitoring and Regulatory Compliance:

- IoT sensors, satellite remote sensing, and AI analytics are enabling real-time monitoring of water use, helping prevent unauthorized extraction and improve regulatory compliance.

Climate-Resilient Water Infrastructure:

- Strengthening reservoirs, canals, recharge structures, and distribution networks is improving resilience against floods, droughts, and climate variability.

GIS-Enabled Flood Forecasting and Early Warning:

- GIS-based flood forecasting and early warning systems are enhancing preparedness, emergency response, and disaster risk reduction.

Digital Lifecycle Management of Water Assets:

- Digital assessment tools support modernization, prioritization, and lifecycle management of aging water infrastructure assets.

Session 3: Integrated GIS Solutions for Efficient Supply Management & Data-Driven Water Conservation

Speakers:

Dr. Dharmendra Singh
Scientist, HARSAC

Navaneethan Santhanam
Chief Scientist, Smartterra

Sanjay Pathak
Director – Aerial Services, GarudaUAV

Nancy Singh
Drone Flying Instructor, FORE Institute of Drone Technology & Research

Karthik M H
Assistant Professor, Presidency University

Key Takeaways

High-Resolution Mapping of Water Resources:

- High-resolution GIS and remote sensing technologies are enabling precise mapping of surface and groundwater resources for targeted planning and conservation.

Drone-Based Water and Infrastructure Assessment:

- Drone-based surveys support rapid assessment of water bodies, catchments, and infrastructure, enabling timely maintenance and interventions.

Integrated Digital Dashboards for Governance:

- Integrated digital dashboards and analytics platforms are improving visibility, performance monitoring, and decision-making for utilities and administrators.

Data-Driven Support for National Conservation Campaigns:

- Evidence-based insights are strengthening water conservation initiatives under Jal Jeevan Mission and Catch the Rain campaigns.

DAY2

Session 1: Community-Led Governance, Tech-Enabled Participation & Institutional Coordination

Moderator:

Sushant Anand
Manager, ISPP – Centre for Urban Transitions (I-CUT)

Peeyush Gupta
Real Time Information Specialist, National Mission for Clean Ganga

Dr. Shiv Singh Rawat
Convener, Yamuna Bachao Abhiyan

Sonia Grover
Associate Director, Mu Gamma Consultants

Key Takeaways

Digital Platforms for Community Water Stewardship:
- Digital awareness platforms, mobile applications, and participatory GIS tools are strengthening community engagement in water stewardship.

Interoperable Platforms for Institutional Coordination:
- Shared dashboards and interoperable geospatial platforms are enhancing coordination across central, state, and local water institutions.

Tech-Enabled Community Livelihood Models:
- Technology-enabled livelihood and monitoring models are scaling community participation and economic outcomes under Arth Ganga.

Transparent and Accountable Digital Governance:
- Digital governance tools improve transparency, accountability, and performance tracking in water programmes.

E-Learning and Digital Capacity Building:
- E-learning platforms and digital capacity-building initiatives are strengthening institutional capabilities at local and regional levels.

Empowering PRIs and ULBs through Technology:
- Technology is empowering PRIs and ULBs to play a more active role in decentralized and participatory water governance.

Session 2: Reducing Water Loss & Transforming Utilities Through Smart NRW Solutions

Speakers:

Vikas Brahmavar
Director, Boson White Water

Nikita Madan
Sector Specialist – Sustainable Urban Development, KfW Bank

Bharanidharan B
Manager – Research Hydraulics, Larsen & Toubro

Lokesh Pandey
Director, Red Raven

Jitendra Kumar Tiwari
Business Head, LC Infra

Arokiaraj Benjamin
Head – Marketing & Communications, Solinas Integrity

Key Takeaways

NRW Reduction as a Strategic Utility KPI:
- Reduction of non-revenue water (NRW) is emerging as a strategic priority and key performance indicator for urban utilities under AMRUT 2.0.

Addressing Apparent Losses through Metering and Billing Reforms:
- Metering accuracy, billing reforms, and control of unauthorized connections are critical to addressing apparent water losses.

Managing Real Losses through Network Optimization:
- Pressure management, pipeline rehabilitation, and proactive maintenance are reducing real losses across distribution networks.

Digital Twins for Predictive and Optimized Operations:
- Digital twin platforms enable scenario analysis, predictive maintenance, and optimized network operations.

URBAN DEVELOPMENT & SMART UTILITY SUMMIT

Theme: Accelerating Inclusive Urban Transformation through Digital Integration

DAY1

Session 1: India's Urban Landscape: Challenges, Policies, Integrated Utilities and Innovation

Guest Address:

Hon'ble Glen Murray
Managing Partner – North America, Mapex AI

Purushottam Uttarwar
Team Leader – TOD Cell, IUT, Ministry of Housing and Urban Affairs, Government of India

Lt Col Monish Ahuja (Retd)
Managing Director, Punjab Renewable Energy Systems Private Limited (PRESPL)

Akhilesh Srivastava
President, ITS India

Ravinder Reddy
Chief Planning Officer, Hyderabad Metropolitan Development Authority

Vishnu Sharma Dadhich
Corporate Affairs & Marketing, National Industrial Corridor Development Corporation (NICDC)

Ravi Singh
Co-Founder & Chief Product Officer, Indrones

Shiren Pandita
Associate Fellow, Transport & Urban Governance Division, TERI – The Energy and Resources Institute

Key Takeaways

Policy-Led Urban Expansion and TOD Alignment:

- Policy-led urban expansion is gaining scale as programmes and frameworks such as AMRUT and PMAY increasingly align with transit-oriented development (TOD), enabling measurable outcomes and replicable models—especially for small and medium towns.

Integrated Rural–Urban and Geospatial Planning:

- Integrated planning approaches that combine rural–urban growth, redevelopment strategies, and standardized geospatial baselines are helping bridge implementation gaps and improve inter-departmental coordination.

Digital Twins and GIS for Climate-Smart Cities:

- Digital twins and multi-layer GIS (mobility, land use, environment, utilities) are enabling real-time simulation, scenario testing, and evidence-based prioritisation—supporting low-carbon and climate-smart urban growth.

Drone-Based Urban Surveys and Project Execution:

- Drone mapping and high-resolution data capture are accelerating city surveys, infrastructure diagnostics, and corridor planning, enabling faster project preparation and more accurate execution monitoring.

Data-Driven and Community-Resilient Urban Development:

- A strong shift toward community-resilient cities was observed through circular economy approaches, inclusive service delivery, and data-driven governance that links planning decisions with citizen outcomes.

Urban Living Labs for Collaborative Innovation:

- Urban Living Labs are emerging as practical collaboration mechanisms to pilot innovations, validate governance models, and scale solutions through partnerships across government, industry, academia, and communities.

Session 2: Integrated Urban Growth: Overcoming Connectivity and Infrastructure Gaps

Guest Address:

Dr. Bharat Lohani
Professor – Civil Engineering Department, Indian Institute of Technology, Kanpur

Keynote Address:

Mohd. Monis Khan
Additional Chief Planner, Town and Country Planning Organisation (TCPO), New Delhi

Moderator:

Dr. Prafulla Parlewar
Head of the Department – Urban Planning, School of Planning and Architecture, New Delhi

Presenters:

Akshay Jaiswal
Sales Manager – Geospatial, Trimble Inc.

Nobal Preet Singh
Strategic Partnerships, Google Maps

Jayanta Poddar
Co-founder & Chief Technology Officer, Garudalytics

Bipul Ghosh
Director – Data Science Lab, Reserve Bank of India (RBI)

Pradeep Pandurangi
Deputy General Manager – Product, ideaForge

Key Takeaways

Strengthening Digital Geospatial Foundations:

- Digital infrastructure gaps were highlighted as a core constraint to integrated urban growth, reinforcing the need for standardized, high-resolution 3D geospatial basemaps to power reliable digital twins and interoperable planning systems.

Transit-Oriented Development as an Urban Backbone:

- Transit-oriented development (TOD) continues to be positioned as the backbone for compact, connected, and efficient cities—linking land-use, mobility, and service delivery into a unified growth framework.

Decarbonising Urban Utilities and Infrastructure:

- Decarbonisation of public utilities and urban infrastructure was emphasized as an essential pathway to align city growth with national climate and carbon-neutrality targets, supported by measurable data and monitoring systems.

Granular Economic and Spatial Indicators for Urban Policy:

- The need for granular, frequent economic and spatial indicators—including state-wise quarterly GDP and sectoral activity proxies—was underscored to strengthen evidence-based urban policy and investment planning.

Governance Readiness for Emerging Mobility Technologies:

- Emerging mobility disruptions such as autonomous and connected vehicles require proactive standardisation, governance readiness, and citizen-behaviour integration to ensure safety, inclusivity, and scalability.

End-to-End Geospatial Solutions for Urban Connectivity:

- End-to-end geospatial solutions—combining positioning, imagery, UAV data, and analytics—are enabling cities to close connectivity gaps, strengthen asset visibility, and accelerate infrastructure delivery across sectors.

Session 3: Transforming Urban Utilities with IoT, AI, and Digital Twins

Presenters:

Vikas Gupta
Deputy General Manager (IT & Automation), Noida Power Company Limited (NPCL)

Amar Nath
Executive Officer, Airawat Research Foundation

Puneet Aggarwal
Business Head – Smart Mobility IoT, Jio Platforms Limited (JPL)

Shashikant Bagul
Head – Geospatial Regulations & Compliance, Tech Mahindra

Dominique Meyer
PhD, Chief Executive Officer, Looq AI

Leema Christy Devasagayam
Digital Twin Leader, Schneider Electric

Priyanka Pandit
Manager – Presales & Solutioning, CS TECH Ai

Dr. Gaurav Kumar Chawla
Founder & Chief Executive Officer, GKC Consultants

Key Takeaways

GIS as the System of Record for Utility Planning:

- GIS is increasingly functioning as the central utility 'system of record', integrating 3D/4D BIM and progressing toward 5D planning to incorporate cost and resource optimisation, enabling virtual rehearsals and scenario-led decision-making.

Unified and Interoperable Utility Architecture:

- A unified utility architecture anchored on integration, innovation, and interoperability is enabling real-time visibility of meters and network assets, improving operational control across complex urban systems.

IoT-Enabled Continuous Utility Monitoring:

- IoT-connected sensors and smart meters are accelerating continuous monitoring, enabling faster fault detection, improved service reliability, and better demand-management across power, water, mobility, and city services.

AI-Driven Asset Intelligence and Analytics:

- AI-driven asset detection and analytics are strengthening mapping accuracy, reducing blind spots in underground and distributed infrastructure, and improving maintenance planning and cross-utility coordination.

Operational Digital Twins for Urban Utilities:

- Digital twins are advancing from visualization tools to operational platforms—supporting predictive maintenance, event simulations, and resilience planning across interconnected city utilities.

Demonstrating Impact through Integrated Utility Deployments:

- Real-world demonstrations, including examples of 24x7 pressurized water supply and utility automation deployments, showcased how combined IoT–AI–GIS stacks can deliver scalable transformation and measurable service improvements.

180 MT CO_2 Reduction Potential From utility digitalization by 2030- Schnieder Electric.

Presentation at GSI'25

DAY2

Session 1: Empowering Urban Local Bodies for Sustainable Infrastructure and Utility Delivery

Keynote Address:

Ravi Jain
Director – Product Management, Ola Krutrim

Moderator:

Kiran Avadhanula
Senior Sector Specialist – Sustainable Urban Development, KfW Bank

Presenters:

Dr. O.P. Agarwal
Professor of Practice, Indian School of Public Policy (ISPP)

Dr. Ruma Chakrabarty Shukla
Industry Head – Urban, Esri India

Hari Kumar P S
Chief Operating Officer, Geokno India Private Limited

Romi Roy
Cities Planning & Design Lead, Arup

Charu Bhargava
Chief Operating Officer, STAQO World

Prashant Alatgi
Designated Partner, Prashant Advanced Survey LLP

Akshay Kanchan
Founder, Neural City

Shrinivas Deshmukh
Director, Urban Research Foundation

Dr. Nishant Sinha
Product Head, Times Internet

Key Takeaways

Strengthening ULBs through the Three Fs:

- Strengthening ULB capability through the 'three Fs'—funds, functions, and functionaries—was highlighted as foundational for sustainable infrastructure delivery and consistent utility service outcomes.

Municipal Financing and Fiscal Reforms:

- Municipal financing reforms, including property tax restructuring and diversified revenue strategies, are enabling cities to improve fiscal health, unlock investments, and move toward self-reliance.

Digital Asset Management and Urban Digital Twins:

- Digital asset management platforms and city digital twins are supporting end-to-end infrastructure lifecycle management, including flood monitoring, network optimisation, and resilience-oriented capital planning.

Street-Level Data for Human-Centric Planning:

- Street-level and real-time data integration is improving human-centric planning by connecting service gaps with on-ground realities, enabling faster redressal and targeted upgrades in large and medium towns.

Adapting Global Governance and Asset Playbooks:

- Learning from global examples, cities are increasingly adopting replicable governance and asset management playbooks—adapting them to Indian institutional contexts to accelerate scale and impact.

Leadership and Capacity Building for Outcome-Driven Governance:

- Capacity building and empowered leadership were emphasised as the critical enablers for shifting ULBs from compliance-driven execution to outcome-driven, data-led governance and service delivery.

Session 2: Integrating Disaster Risk Reduction into Urban Development and Utility Infrastructure Planning

Moderator:

Shiren Pandita
Associate Fellow, Transport & Urban Governance Division, TERI

Presenters:

Sunil Sharma
General Manager – Sustainability and Clean Tech, BSES Yamuna Power Limited

Moumita Shaw
Urban and Regional Development Advisor, GIZ India

Debajit Palit
PhD, Centre Head – Centre for Climate Change and Energy Transition, Chintan Research Foundation (CRF)

Rohit Malhotra
Founder & Chief Executive Officer, Spatial Logix

Manasa Garikaparthi
Senior Project Officer, ICLEI South Asia

Dr. Priti Attri
Assistant Scientist, Haryana Space Applications Centre (HARSAC), Hisar

Key Takeaways

Geospatial Optimization of Emergency Mobility Corridors:

- Geospatial mapping and network analytics are optimizing road and corridor planning to keep emergency response routes functional, sustaining city mobility during floods, earthquakes, and extreme weather events.

IoT-Enabled Real-Time Utility Situational Awareness:

- IoT-enabled monitoring of utility assets is strengthening real-time situational awareness, enabling proactive interventions that prevent cascading failures across power, water, drainage, and transport systems.

Integrating Demand and Resilience Planning:

- Resilience-demand integration concepts, including storage park frameworks and utility performance baselining, are improving preparedness by linking service demand peaks with infrastructure stress indicators.

Decentralized and Dual-Use Infrastructure for Rapid Recovery:

- Decentralized microgrids and dual-use infrastructure models—where power networks also carry data—are enabling resilient, rapid restoration of essential services for critical facilities post-disaster.

AI-Driven Risk Simulation and Digital Twins:

- AI-powered 'what-if' simulations and digital twins are enabling interconnected risk modelling across utilities, helping agencies anticipate compound shocks and prioritize investments for maximum risk reduction.

Cross-Utility Data Integration for Resilience Governance:

- Cross-utility data integration and shared operational dashboards are breaking institutional silos, enabling coordinated planning, faster response, and system-wide resilience governance.

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ITS INDIA

Global Climate Risk Index 2021 ranks India seventh among countries most impacted by extreme climate events (such as floods, heatwaves, storms, etc.) triggered by climate change.

Global Climate Risk Index 2021, GermanWatch

TECHNICAL SESSIONS

Session 1: Use Case Studies Technical Presentations

Moderator:

Akaash S
Executive Product Management, Geospatial World

Speakers:

Neena Priyanka & Naval Jain
Senior Product Manager, Precisely Software & Data India Pvt. Ltd.

Rishabh Singh
Young Professional Geoinformatics Expert, Arunachal Pradesh Space Application Centre (APSAC)

Karthik M H
Assistant Professor, Presidency University

Dr. Divya Priya Balasubramani
Assistant Professor, Institute of Remote Sensing, Department of Civil Engineering, College of Engineering Guindy, Anna University

Ghanshyam Giri
Research Associate, Water Resource Division, TERI

Key Takeaways

Climate & Water Resilience

- Demonstrated the use of geospatial technologies, satellite data, and UAVs to address climate variability, groundwater stress, and urban water resilience through data-driven planning frameworks.

AI-Driven Geospatial Analytics

- Highlighted the integration of AI, deep learning, LiDAR, and SAR for automated environmental monitoring, enabling accurate tree mapping, land subsidence analysis, and scalable spatial intelligence.

High-Resolution UAV Applications

- Showcased UAV-enabled data acquisition to enhance model calibration, validation, and real-time insights across agriculture, groundwater assessment, and urban infrastructure management.

Session 2: Youth Technical Presentations

Moderator:

Akaash S
Executive Product Management, Geospatial World

Speakers:

Paurnima Borikar
Research Scholar, Maulana Azad National Institute of Technology, Bhopal

Apoorva Yadav
PhD Scholar, Shiv Nadar Institute of Eminence

Akash Kumar
PhD Candidate, Geospatial Engineering, Department of Civil Engineering, Indian Institute of Technology Roorkee

Manoj Yadav
PhD Research Scholar, Shiv Nadar Institute of Eminence

Key Takeaways

Geospatial Tools for Environmental Resilience

- Cloud-based platforms like Google Earth Engine enable long-term, scalable monitoring of wetlands, watersheds, and climate stressors, supporting evidence-based, climate-resilient ecosystem management.

AI & Machine Learning in Agriculture

- Machine learning techniques, including Random Forest and deep learning, significantly improve crop canopy, phenology, and yield estimation, enhancing precision agriculture under variable climatic and field conditions.

Close-Range Sensing for Phenological Insights

- PhenoCam and UAV-based observations capture high-frequency crop and forest phenology, revealing climate-driven shifts in growth stages and enabling integration with satellite data for field-scale analysis.

DIGITAL MAPS @ GRAM PANCHAYAT

Theme: Powering Grassroot Development through Geospatial Knowledge Infrastructure

Co-Organised by
पंचायती राज

Inaugural Session

Speakers:

Ananyaa Narain
Vice President- Consulting
Geospatial World

Alok Prem Nagar
Joint Secretary, Ministry of
Panchayati Raj, Government of India

Agendra Kumar
Managing Director, Esri India

Dr Shailesh Nayak
Director, National Institute of
Advanced Studies (NIAS)

SS Raja Shekhar
Head, Applications & Scientist- SG,
National Remote Sensing Centre

Subrata Singh
Executive Director, Foundation for
Ecological Security (FES)

Vishnu Chandra
Independent Director, DRIISHYA

Digital mapping and geospatial knowledge infrastructure are increasingly empowering Gram Panchayats to drive grassroots governance and development in practical, people-centric ways. Speakers emphasized the importance of equipping village institutions with clear, usable spatial information through platforms such as Gram Manchitra and Bhuvan Panchayat Services, enabling better planning, service delivery, and resource management. The role of Earth observation, high-resolution cadastral mapping, and simplified geospatial datasets was underscored in addressing challenges such as land administration, groundwater stress, climate variability, and asset management at the village scale. A strong focus was placed on accessibility, with calls for easy-to-use tools that Panchayats can operate independently, and on community participation, particularly women-led data collection, to improve accuracy and local ownership. Overall, the session reinforced that digital maps are becoming a foundational layer of rural governance, where technology, local capacity, and community engagement together enable informed decision-making, resilience, and sustainable development at the grassroots level.

Session 1: From SVAMITVA to Spatially Enabled Panchayats: Strengthening Land Governance & Citizen Services

Moderator:

Uday Kumar
Advisor, Ministry of Panchayati Raj

Speakers:

Mahesh Singhal
Office Superintendent Settlement
Commissioner & Director of Land
Records Office, Maharashtra

Oshin Victor
Assistant Director
Land Records, Madhya Pradesh

Nishant Reddy
Director, SVAMITVA
Government of Andhra Pradesh

State-led digital transformation of rural land governance is reshaping how village administrations function by embedding precise spatial data into everyday decision-making. The discussion highlighted how different states are modernising land systems through drone-based mapping, abadi map integration, standardised handling of legacy records, and continuous WebGIS workflows, all aimed at delivering reliable maps, faster decisions, and fewer disputes. Speakers emphasized that spatial enablement goes beyond map creation to building trust through clear boundaries, transparent processes, and verifiable records that benefit both institutions and citizens. Together, these experiences showed how states are redesigning land information flows, administrative responsibilities, and Panchayat-level governance, pointing toward a more predictable, citizen-responsive, and data-driven future for rural land administration.

Session 2: Crafting and strengthening a sustainable future for transforming rural development

Moderator:

Uday Kumar
Advisor, Ministry of Panchayati Raj

Speakers:

Dr Sultan Singh
Director & Chief Scientist
Haryana Space Applications Centre (HARSAC)

Dr Sirish Ravan
Founder, EarthSight Foundation

Gaurav Gidhwani
Co-Foundation and Executive Director, CivicDataLab

Kaustubh Tripathi
Chief Technology Officer
DeepMatrix

Rural India's transition from data scarcity to evidence-driven development formed the core of the discussion, with a strong focus on activating existing geospatial and digital systems for everyday governance at the grassroots. Speakers emphasized that while satellite data, AI models, and national digital platforms are now widely available, the real challenge lies in translating innovation into last-mile impact for Panchayats, frontline workers, farmers, and local communities. Integrated spatial platforms such as BharatMaps and GramManchitra were highlighted as enablers of Panchayat-level planning through seamless base maps, terrain layers, drone imagery, and administrative boundaries. State experiences, including Haryana's comprehensive geospatial asset and finance mapping, demonstrated how unified spatial–fiscal systems can improve transparency, equity, and resource allocation. The growing role of AI and open data in climate risk assessment, disaster resilience, and prioritization of public investment was underscored, alongside the shift from static maps to actionable spatial intelligence using automated terrain and hydrological modelling. Overall, the session reinforced that meaningful rural development depends on aligning geospatial systems, AI, open data, and local capacity to turn data into decisions.

Session 3: Spatial Development Plans for Gram Panchayats: Guiding Planned and Climate-Resilient Rural Growth

Moderator:

R. Srinivas
Town and Country Planner (Redt), Urban Planning and Expert, ADM-IUT TOD Cell and Honorary Secretary, Institute of Urban Transport, Delhi

Speakers:

Rama Umesh Pandey
Professor, School of Planning and Architecture, Bhopal

Amit Gotecha
Deputy Centre Head CEPT Research and Development Foundation

Dr Aniruddha Roy
Chief Technology Officer
Genesys International

Vrindaa Sharma
Social Scientist
S M Sehgal Foundation

Spatial Development Plans (SDPs) are driving planned, climate-resilient growth at the Gram Panchayat level by combining technical mapping with participatory, community-led decision-making. Delegates, including women Panchayat representatives, shared how spatial information informs everyday governance, enabling collective planning for land use, infrastructure, environmental priorities, and long-term resilience. The discussion emphasized accessible visual tools and participatory approaches to bridge the gap between technical planning and ground realities, while integrating social, economic, and environmental factors into a single framework for transparent, inclusive, and forward-looking decisions. Overall, the session reinforced that SDPs are most effective when collaborative, community-centred, and focused on building local planning capacity, highlighting strong grassroots readiness for these approaches.

Session 4: Tech & Tools: Drones, Mobile GIS, AI/ML for the Panchayat Ecosystem

Moderator:

Dr Prithvish Nag
Former Surveyor General of India

Speakers:

Mike A Horton
Chief Executive Officer
HYFIX

Nitin Pande
GTM and Solutions Head
Tech Mahindra

Rahul Jain
Founder & Managing Director
Matrix Geo Solutions




Emerging technologies such as drones, mobile GIS, and AI/ML are increasingly supporting governance and service delivery at the Gram Panchayat level by enabling village-level planning, asset mapping, monitoring, and decision-making. Speakers highlighted practical ways Panchayats can use these tools to understand terrain, manage infrastructure, track development works, and access accurate spatial data without relying on complex systems. Interaction with women Panchayat delegates underscored real operational needs, including simple mobile tools for documenting assets and effective training to use technology confidently. The session reinforced that technology only becomes effective in rural governance when designed around local users, responsive to their constraints, and intuitive enough to be used without technical expertise, reflecting a strong grassroots appetite for accessible, affordable, and actionable solutions.






NAKSHA (NATIONAL GEOSPATIAL KNOWLEDGE-BASED LAND SURVEY OF URBAN HABITATIONS) AND LANDSTACK

National Geospatial Knowledge-based Land Survey of Urban Habitations

Inaugural Session

Speakers:

Sanjay Kumar
Chief Executive Officer
Geospatial World

Kunal Satyarthi
Joint Secretary, Department of Land Records Government of India

Manoj Joshi, IAS
Secretary, Department of Land Resources, Government of India

Shyam Kumar
Director, Department of Land Resources, Government of India

Kunal Satyarthi
Joint Secretary
Department of Land Resources
Government of India

Session 1: NAKSHA Review

The inaugural address by Mr. Kunal Satyarthi outlined the progress and strategic significance of the NAKSHA pilot programme as the foundation for nationwide urban land-records modernisation. Nearly a year into implementation, the programme has expanded from its initial pilot in Madhya Pradesh to 157 ULBs across 30 States and UTs, highlighting the need to closely examine execution methodologies and operational challenges before scaling further. He explained the three-stage implementation framework—Map-I (aerial survey and 2D/3D feature extraction), Map-II (ground truthing, capacity building, and record integration), and Map-III (claims resolution and final land-record publication)—and noted uneven progress across states, with some advancing rapidly while others remain stalled. The address emphasized the wider value of NAKSHA outputs such as DEM, DSM, and DTM for urban planning, disaster management, and dispute reduction, alongside technical enablers like the NAKSHA portal, grid-based mapping by Survey of India, and high-resolution peri-urban mapping. While the programme's expanded budget and mapped area promise significant benefits, key priorities remain around portal customization, capacity building, ground-truthing timelines, CoRS network readiness, data handover, and seamless API-based integration with land and registration records.

Organiser

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Session 2: Aerial Flying & Feature Extraction-Learnings from NAKSHA

Chair:

S.K. Sinha
Additional Surveyor General, Surveyor of India

Moderator:

Dr Shivangi S Somvanshi
Centre Head, Centre for Applied Geomatics (CAG), CEPT University

DoLR Moderator:

Dr Mandvi Misra
GIS Technical Expert

Misal Roshan Shrivastava
Superintending Surveyor Survey of India

B. Venkateswar Reddy
Director, Aarvee Associates

Saurabh Rai
Chief Startegy & Growth Officer, NeoGeo Technologies

Sundar Raj
Delivery Head, LTI Mindtree

Surendra Nath Das
Chief Executive Officer, Mapex

Atanu Sinha
Chief Executive Officer, Garuda UAV

Advanced geospatial technologies—particularly aerial photography—are transforming India's urban cadastre under the NAKSHA programme. Moving beyond programme-level updates, the discussion focused on the technological stack and system architecture, covering aerial photogrammetry, oblique imaging, LiDAR, 3D reconstruction, and AI/ML-driven feature extraction as enablers of greater accuracy, consistency, and transparency in urban land records. Speakers shared progress updates, noting that while 10% of the country has been mapped using modern digital photogrammetry, NAKSHA has achieved ~95% ORI generation, 78% feature extraction, and 61% data upload for ground verification. The session emphasized that the real challenge lies in integrating new 2D/3D datasets within complex urban environments marked by dense settlements, privacy and airspace restrictions, and fragmented identifiers, and highlighted how robust validation workflows, ground truthing, and cross-sector B2B collaborations can effectively address these challenges as the programme moves into its next phase.

Session 3: NAKSHA Ground Truthing, Interoperability and Data Maintenance in Urban Areas

Chair:

P. Amudha, IAS
Additional Chief Secretary, Revenue Department, Government of Tamil Nadu

Moderator:

Vinod Mishra
Vice President, MapmyIndia

DoLR Moderator:

Ashwani Alfred
Manager Geospatial Technology

Krishna Mohan Uppu, IAS
Secretary (Revenue), Government of Puducherry

J Manjunath, IAS
Commissioner, Survey Settlement and Land Records (SSLR), Government of Karnataka

R.J. Vidyullatha
Dorector, Town Country Planning, Government of Andhra Pradesh

Yash Pal, IAS
Director, Land Records, Government of Haryana

Ranjana Rajguru, IAS
Commissioner cum Secretary, Revenue Department, Government of Uttarakhand

The MAP-II phase of the NAKSHA pilot, focusing on ground truthing and data maintenance in urban areas, was the core theme of this session. Panellists from Tamil Nadu, Karnataka, Haryana, and Puducherry shared practical experiences, challenges, and solutions, underscoring that accurate, field-verified data remains essential despite advances in satellite imagery and drone mapping. Discussions highlighted the lack of standardized land data formats, operational complexities, and inter-departmental integration challenges, and emphasized the need to effectively link remote sensing outputs with on-ground observations to improve the reliability of geospatial models. The session stressed collaborative approaches involving government agencies, local stakeholders, and technology partners, along with standardized data collection protocols for GPS capture, photographic evidence, and GIS integration, to ensure consistency, accuracy, and scalability of urban land governance under NAKSHA.

Session 4: Land Stack: Building the Future of India's Digital Land Ecosystem

Chair:

S. Chockalingam, IAS
Chief Electoral Officer, Government of Maharashtra

Moderator:

Sanjay Kumar
Chief Executive Officer, Geospatial World

DoLR Moderator:

Dhawal Trivedi
Technical Documentation Expert

J Manjunath, IAS
Commisioner, Survey Settlement and Land Records (SSLR), Government of Karnataka

Dr Sultan Singh
Director & Chief Scientist, Haryana Space Applications Centre (HARSAC)

Deepak Jacob, IAS
Director, Survey & Settlement, Government of Tamil Nadu

Prof (Dr) Zaffar Sadiq Mohamed-Ghouse
Vice President and Director Advisory & Innovation Woolpert

Samarth Hans
Director- Projects, Geospatial World

J.K Jain
Expert Land Administration, Chandigarh

India's transition from fragmented, digitized land records to a unified, customer-centric Landstack was the central theme of this discussion. Experts emphasized the need for structural alignment between geospatial datasets, administrative records, and utility layers that currently operate in silos, positioning the Landstack as a strategic governance platform rather than a standalone mapping exercise. Ongoing pilots in Chandigarh and Tamil Nadu were referenced, alongside global benchmarks from Singapore, South Korea, Serbia, and Finland, which demonstrate how integrated land systems support planning, taxation, utilities, disaster management, finance, and citizen services, including emerging sub-surface data layers. The session highlighted the importance of defining core layers suited to India's land administration context while addressing challenges of inconsistent metadata and limited technical capacity, and raised the critical question of whether India should adopt a centralized national platform or a federated model with harmonized standards and state-level autonomy.

Session 5: End-to-End Demonstration of WebGIS Platform & Cloud Services

Chair:

Deepak Jacob
Director, Survey & Settlement, Government of Tamil Nadu

Moderator:

Snehashish Misra
Associate Professor, CRS-LBSNAA

DoLR Moderator:

Deepti Parihar
Data Management & Cloud Solutions Expert

Anoop Patel
Manager, MPSEDC
Government of Madhya Pradesh

Krishna Rao TVB
Vice President- Presales, Esri India

Koduri Venkatesh
Project Manager, Dream Step Software Innovation Pvt Ltd

Gokhul Praveen
GIS Team Lead, Government of Karnataka

Pradeep Kumar
Manager, SPMU, Government of Maharashtra

N Prakash Ranjan Mahanta
Cloud- CSD HoD, National Government Cloud

WebGIS platforms and cloud services as the backbone of modern digital land governance formed the core of this session. Through a live demonstration of the NAKSHA portal, speakers showed how real-time data feeds, predictive analytics, and high-performance cloud infrastructure enable faster decision-making, accurate service delivery, and fully digital, user-centric workflows. The discussion highlighted the growing need for resilient, end-to-end WebGIS and mobile ecosystems that can support drone-based and automated data capture while remaining reliable in low-connectivity or offline environments. Panellists examined scaling challenges such as cloud capacity limits, network instability, microservice complexity, and field-level constraints affecting survey, validation, and UR-Pro Card generation, and concluded by emphasizing the importance of future-proof, cloud-ready and interoperable architectures with secure data pipelines and robust workflow orchestration for nationwide land data operations.

Session 6: NAKSHA: Legal Framework

Chair:

NK Sudhanshu, IAS
Director General, Yashada, Government of Maharashtra

Moderator:

Deepika Kha
Consultant, IIHS, Bengaluru

DoLR Moderator:

Niyati Patwardhan
Legal Advisor

J Manjunath, IAS
Commissioner, Survey Settlement and Land Records (SSLR), Government of Karnataka

Kailash Karthik, IAS
N, Inspector General of Registration and Director- Land Records, Government of Assam

Arpit Mehta
Assistant Director, Revenue Department, Government of Madhya Pradesh

Palavi Mishra
Assistance Settlement Officer, Government of Bihar

Rakhee Singh
Additional Director Land Records, Himachal Pradesh

Chandrakant. B. Shetkar
Director, Directorate of Settlement and Land Records, Goa

Legal and institutional alignment for urban land governance under the NAKSHA programme was the central theme of this session. Experts highlighted that while states are adopting modern survey technologies, inconsistencies in legal definitions of "urban" across acts and fragmented departmental mandates are creating jurisdictional overlaps and operational misalignment as cities expand.

Discussions emphasized the shift from legacy measurement systems to GNSS/GPS rover–based surveys, underscoring the need for legally codified accuracy and tolerance thresholds to prevent disputes in dense urban settings.

State experiences illustrated varying approaches to manpower and governance challenges, from Karnataka's licensed surveyor ecosystem to legal reforms in Madhya Pradesh and Bihar enabling end-to-end adoption of modern techniques, with integrated departmental structures proving more effective. The session concluded by stressing that the future urban property card (UR-Pro) must be tightly integrated with planning, taxation, and registration systems, and that robust SOPs are essential to bridge the gap between rapidly evolving technology and slower-moving legal frameworks.

Session 7: Symposium Wrap-up: From Pilot to National Rollout

Speakers:

Kunal Satyarthi
Joint Secretary, Department of Land Records, Government of India

Manoj Joshi, IAS
Secretary, Department of Land Resources, Government of India

Shyam Kumar
Department of Land Resources, Government of India

This concluding session reflected on India's land modernisation journey at a critical inflection point, noting that while the country now has its strongest-ever foundation in high-quality aerial data and 5 cm–level ORI, the real challenges lie beyond technology. Speakers emphasized gaps in skilled manpower, standardized processes, legal preparedness, and consistent ground truthing, alongside resistance in dense urban areas and uneven adoption across states. The discussion stressed the need to move from isolated datasets to an integrated, citizen-centric Landstack that links spatial data with registration, taxation, and permissions at the parcel level. Key takeaways highlighted that citizen acceptance, legal empowerment through clear SOPs and supportive frameworks, and alignment with on-ground realities are as important as technical accuracy. The session concluded that with political will, industry capability, and coordinated institutional action, this moment presents a unique opportunity to fix India's land records at scale in a way that is legally robust, interoperable, and publicly trusted.

GEOWOMEN: SHAPING THE WORLD, ONE MAP AT A TIME

Guest Address:

Dr Manosi Lahiri
Founder, Managing Director, CEO, ML InfoMap

Dr. Manosi Lahiri reflected on her long journey in the geospatial industry, highlighting how gender bias often operates unintentionally yet persistently in India. Drawing from everyday examples and professional experiences, she emphasized that while she does not believe in special treatment for any group, equitable and caring work environments are essential for everyone. She pointed to the systemic challenge of retaining skilled women professionals, particularly after marriage, which contributes significantly to the gender gap in the industry. Dr. Lahiri stressed that competence and indispensability ultimately determine professional survival and growth, but acknowledged that societal structures prevent organizations from benefiting from women's most productive years. She urged women to recognize their capabilities, question symbolic roles assigned to them, and actively claim their rightful place as leaders and contributors in the geospatial ecosystem.

"Gender bias is often not deliberate but it is built quietly into our spaces, our systems, and our expectations."

Panel Session 1: She Shapes the World: Stories from Geospatial Trailblazers

Moderator:

Bharti Sinha
Co-Founder, Strategist's World

Speakers:

Dr Shubha Pandey
Scientist E, Department of Science and Technology, Government of India

Prof Seema Mehra
Faculty, Kirori Mal College & Fellow DSPH, Institute of Eminence, University of Delhi

Yogita Shukla
Founder, AddGEO Foundation

Dr Shivangi S Somvanshi
Centre Head, Centre for Applied Geomatics for Applied Geomatics (CAG), CEPT University

Key Takeaways

Agency in the Face of Constraints:

- The session underscored that women's leadership journeys are rarely linear, yet agency remains constant—the power to choose, adapt, and persevere despite systemic bias, personal sacrifice, health challenges, or societal expectations.

Redefining Success on One's Own Terms:

- Success was repeatedly framed beyond titles or hierarchy, encompassing purpose-driven work, personal fulfillment, creative expression, and the freedom to design careers that accommodate motherhood, caregiving, and inner well-being.

Inner Compass as a Leadership Anchor:

- Women leaders highlighted the importance of intuition, self-awareness, and authenticity—balancing data, logic, and emotional intelligence with deep inner conviction to make courageous career and life decisions.

Breaking Structural and Cultural Barriers:

- From gender-blind workplace design to male-dominated industries, the discussion emphasized the need for women not only to rise within systems but to actively reshape them to be more inclusive, humane, and equitable for others.

Collective Responsibility and Legacy:

- The session reinforced that women's leadership is inherently intergenerational—building ecosystems, mentoring others, integrating social dimensions into decision-making, and leaving behind pathways where future women can thrive with fewer compromises and greater dignity.

Panel Session 2: Mapping Influence : Women Leading Brand, Story & Strategy in GeoTech

Moderator:

Akanksha Tyagi
Senior Director- EMEA, Geospatial World

Speakers:

Rashmi Gupta
Head-Marketing, Esri India

Balvinder Kaur Sethi
Senior Process Manager, Tech Mahindra

Nidhi Pathak
Sr Marketing Manager, SatSure

Key Takeaways

From Fixed Campaigns to Agile Marketing

- Social media has transformed geospatial marketing from rigid, campaign-led approaches to agile, real-time strategies, demanding sharper, crisper messaging to cut through noise—especially for B2B and B2G organizations where brand visibility and thought leadership matter more than direct demand generation.

Human-Centered Storytelling as a Leadership Strength

- Women leaders bring emotional intelligence, empathy, and authenticity to brand building—translating complex geospatial technologies into human-centered stories that focus on outcomes such as safer cities, better infrastructure, and real societal impact.

B2B & B2G Marketing Needs Credibility, Not Clickbait

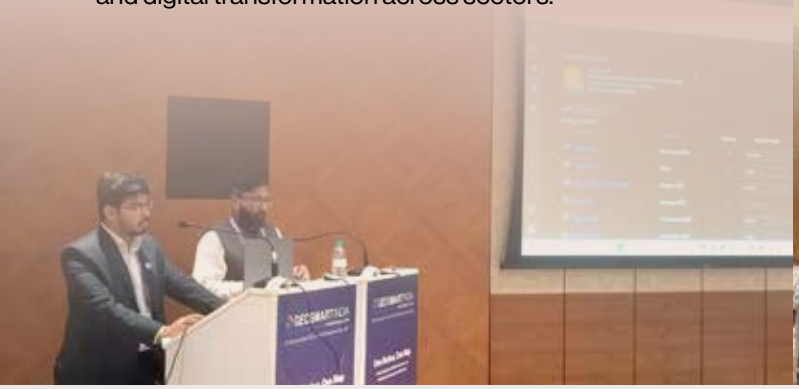
- B2B and government-focused GeoTech companies rely on credibility, community engagement, and long-term relationship building rather than clickbait or flashy campaigns, while ROI-driven, disciplined budget allocation is critical—especially for startups and scaling organizations.

Authentic Leadership Through Balance and Collaboration

- Effective brand leadership in GeoTech involves balancing internal and external marketing, leveraging multi-generational teams, navigating stakeholder complexity, and staying authentic believing in the product, embracing agility, and earning a "seat at the table" through ownership and impact rather than titles.

GIS TECH TALKS – A TECHNOLOGY EXPOSITION BY ESRI INDIA

The Esri India GIS Tech Talks showcased emerging geospatial innovations that are redefining how spatial data is analysed, visualised, and applied for real-world decision-making. The session highlighted the role of GeoAI in extracting intelligence from optical and SAR imagery, the use of ArcGIS Reality and Digital Twins to create high-fidelity, dynamic representations of the physical world, and advanced workflows for processing NISAR data within the ArcGIS platform. Together, these technologies demonstrated how integrated AI-driven geospatial systems are enhancing situational awareness, predictive analytics, and digital transformation across sectors.



USER WORKSHOP SURVEY OF INDIA

The Survey of India (SoI) User Workshop highlighted SoI's role as India's principal national mapping agency and its contributions to geodetic and topographical surveys, national mapping, and geospatial support for development and resource management. The workshop familiarized participants with SoI's geodetic services, digital platforms, and data products, while providing an interactive forum for stakeholder engagement. Key discussions covered CORS-based real-time positioning and reference services, SoI's maps and digital data offerings, geodetic reference products and upcoming services, as well as professional training and capacity-building programs aimed at strengthening geospatial capabilities across user communities.

SENIOR EXECUTIVE TRAINING PROGRAM ON GEOSPATIAL KNOWLEDGE INFRASTRUCTURE (GKI) AT GEOSMART INDIA 2025

Theme: Advancing India's Geospatial Future: Integrating National Priorities with State Capabilities

The Senior Executive Training Program on Geospatial Knowledge Infrastructure (GKI) at GeoSmart India 2025 focused on advancing India's geospatial future by aligning national priorities with state capabilities. The program positioned GKI as a strategic, intelligence-driven ecosystem that moves beyond traditional spatial data infrastructure to enable informed governance, economic development, and societal impact. Sessions highlighted the importance of policy reform, institutional capacity-building, and effective communication of GKI's value to decision-makers, while emphasizing the critical role of states in translating national frameworks into actionable outcomes. The training underscored the need for interoperable platforms, standards-based integration, and trust-centric governance, supported by 4IR technologies such as AI, cloud, IoT, and digital twins. It also reinforced the foundational role of positioning, navigation, and timing, along with integrated workflows across infrastructure and natural resource management, demonstrating how GKI can connect national datasets to on-ground implementation and community-led decision-making for sustainable development.

INDIA-JAPAN SPACE AND GEOSPATIAL ROUNDTABLE

The India–Japan Space & Geospatial Roundtable, held at Bharat Mandapam, New Delhi, on the sidelines of GeoSmart India 2025, marked a significant shift in bilateral cooperation from dialogue to execution, bringing together government agencies, industry leaders, and ecosystem stakeholders from both nations. Against the backdrop of India's rapidly expanding space startup ecosystem—now comprising over 200 companies enabled by IN-SPACe reforms—and Japan's strong technological leadership supported by a USD 6 billion annual space budget and the USD 7 billion Space Strategy Fund, the roundtable highlighted complementary strengths and shared strategic intent. Organized by Geospatial World in collaboration with IN-SPACe, METI, the Embassy of Japan, and JAXA, the forum underscored a structured, multi-stakeholder framework aimed at advancing joint initiatives in space technology and geospatial applications.

Key Focus Areas and Opportunities

Satellite Data Democratization

- Both countries emphasized expanding access to high-resolution satellite data through joint 3D geospatial modeling, shared disaster early-warning systems, cloud-native data platforms for startups and academia, and SAR products combining Japanese sensors with Indian analytics expertise.

Maritime Domain Awareness (MDA)

- India and Japan identified maritime security and ocean monitoring as strategic priorities, leveraging SAR satellites for real-time surveillance of fisheries, marine resources, climate impacts, and maritime safety across the Indo-Pacific region.

AI/ML-Driven Geospatial Solutions

- Strong alignment emerged around applying AI/ML to geospatial data for disaster forecasting, smart cities, precision agriculture, climate resilience, environmental monitoring, and infrastructure asset management, enabling scalable, data-driven decision-making.

Digital Twin Infrastructure

- Both nations see major opportunities in deploying digital twins for ports, railways, airports, and urban systems, building on Japanese platforms like AW3D and Marble Visions to deliver high-resolution, dynamic 4D infrastructure intelligence with measurable returns.

Space Infrastructure and Hardware

- Japanese firms showcased advanced capabilities in in-orbit construction, on-orbit servicing, SAR satellites, GeoAI, and sustainable fuels, opening pathways for MoUs, joint missions, debris monitoring, lunar construction technologies, and next-generation space infrastructure with Indian partners.

The India–Japan Space & Geospatial Roundtable underscored the strength and diversity of India's space ecosystem, with active participation from established companies such as Azista Industries, Dhruva Space, Garudalytics, and Mapex.AI, alongside a wide spectrum of emerging startups including Skyroot Aerospace, Digantara, Astrome Technologies, Aganitha Space Technologies, and several others, supported by government bodies and research institutions. This strong industry representation highlighted a mature and innovation-driven ecosystem aligned with Japan's technological strengths. The discussions outlined a clear, phased collaboration roadmap—ranging from near-term data sharing, pilot projects, workforce exchange, and business matchmaking to medium-term co-development of Earth observation systems, shared infrastructure, digital twins, and PPP models, and a long-term vision of positioning India–Japan cooperation as a leading Indo-Pacific hub for space and geospatial innovation. With over 200 Indian startups and multiple Japanese companies engaged, the focus has now firmly shifted from dialogue to implementation through concrete MoUs, joint projects, and scalable commercial partnerships delivering regional and global impact.

CLOSING PLENARY

Moderator:

Sanjay Kumar
Chief Executive Officer, Geospatial World

Presenters:

Vibhor Jain
Co-Founder & Chief Business Officer, VyomIC

Ankit Bhateja
Founder & Director, Xovian Aerospace

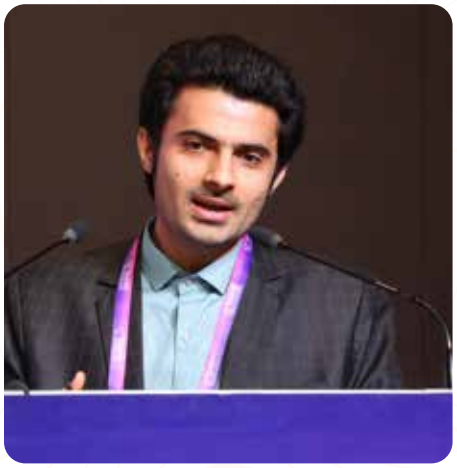
Speakers:

Srikant Sastri
Chairman, Geospatial Data Promotion and Development Committee, Government of India

Kunal Satyarthi
Joint Secretary, Department of Land Records Government of India

Vote of Thanks

Annu Negi
President, Geospatial World



The closing plenary underscored the strategic role of advanced geospatial technologies in strengthening national security, resilience, and land governance. Discussions highlighted the growing importance of secure, high-precision positioning, navigation, and timing systems to address vulnerabilities in GNSS-dependent environments and to support autonomous systems, mobility, logistics, and disaster response. The session also emphasized how AI-driven satellite-based RF intelligence and nanosatellite constellations are enabling near real-time situational awareness for maritime, aviation, climate monitoring, and security applications by converting raw signals into actionable insights. Concluding reflections focused on national land governance initiatives, highlighting how integrated geospatial platforms are improving the accuracy of land records, reducing disputes, and delivering more transparent, citizen-centric services.

FEEDBACK

I am truly honored by the recognition. It was a privilege to participate as a speaker at GeoSmart 2025 and to contribute to the discussions on advancing the geospatial ecosystem. The event was exceptionally well organized and provided a strong platform for meaningful exchange among leaders from industry, government, and academia. Congratulations to the Geospatial World team for curating another impactful edition of GeoSmart. I look forward to continued association and future collaborations.

Shashikant Bagul
PMP, Head – Geospatial Regulations & Compliance, BPS – Tech Mahindra

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Thank you for the appreciation. It was a pleasure to share my thoughts during the event organized by DoLR & Geospatial World. I'm glad that my contribution was helpful. Thank you once again, and I look forward to our continued collaboration.

Misal Roshan Srivastava
Superintending Surveyor (Projects), Surveyor General's Office, Survey of India, Dehradun

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On the outset, please accept my gratitude for taking due research and exploration to identify individuals beyond the conventional mindset and providing your esteemed podium to address long-pending issues related to water challenges. There is much more to convey and express to the right audience, particularly those involved in policy-making. My humble suggestion is to include candidates like me, either to participate directly or to help identify the right audience and frame topics in a more relevant manner. I also believe there may be a pending write-up required from my end based on the speech delivered. If so, I request you to kindly resend the relevant email.

Lokesh Pandey
Director, Red Raven Operative

We would like to extend our heartfelt thanks for issuing the Certificate of Participation for GeoSmart India 2025. We truly appreciate the opportunity to be a part of such an enriching experience and are grateful for the recognition. It was a pleasure to be involved, and we look forward to participating in future events organized by your team.

Dr. Vinod Kumar
O/o Promotion Directorate, IN-SPACe, Bengaluru

I found the conference to be incredibly enriching and truly appreciate the opportunity to have participated.

Dr. Pulak Das
Assistant Professor, School of Human Ecology, Dr. B. R. Ambedkar University Delhi

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NICDC and I sincerely thank you for giving us the opportunity to be part of GeoSmart India 2025 and to present the mission and vision of NICDC (Government of India). We also appreciate your kind recognition. We wish the entire team a very happy and prosperous New Year 2026.

Vishnu Sharma
Deputy General Manager – Corporate Affairs, National Industrial Corridor Development Corporation (NICDC)

It was great to participate in the event and contribute to the theme. I look forward to participating in upcoming forums.

Sunil Sharma
Distributed Energy Resources, BD & NTI, BSES Yamuna Power Limited

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It was a pleasure to be associated with the geospatial community. Wishing you all a Happy New Year filled with success and peace.

Dr. Manosi Lahiri
Founder, Managing Director & CEO, ML Infomap

GEOSMART INDIA LEADERSHIP AWARDS

GEOSMART INDIA LEADERSHIP AWARD

Leading Institution
Indian Institute of Space Science and Technology (IIST) Kerela

Geospatial Ambassador of India
Srikant Sastri, Chairman, Geospatial Data Promotion and Development Committee, Government of India

Geospatial Data Platform of the Year
Indo ArcGIS Living Atlas
Esri India

Geospatial Technology Company of the Year
Amnex

Geospatial Solutions Company of the Year
Lepton Software

Emerging Company of the Year
SatSure

Start-up of the Year
Digantara

GEOSMART INDIA EXCELLENCE AWARDS

Excellence in Technology- Location Intelligence
Bharat Petroleum Corporation Limited

Excellence in Application- Agriculture
Agriculture Insurance Company of India

Excellence in Technology- Land & Property
Mumbai Port Authority

Excellence in Technology- Climate Change Management
Bihar Mausam Seva Kendra

Excellence in Technology- Water Management
Bangalore Water Supply and Sewerage Board

Excellence in Application- Insurance
Bajaj Allianz

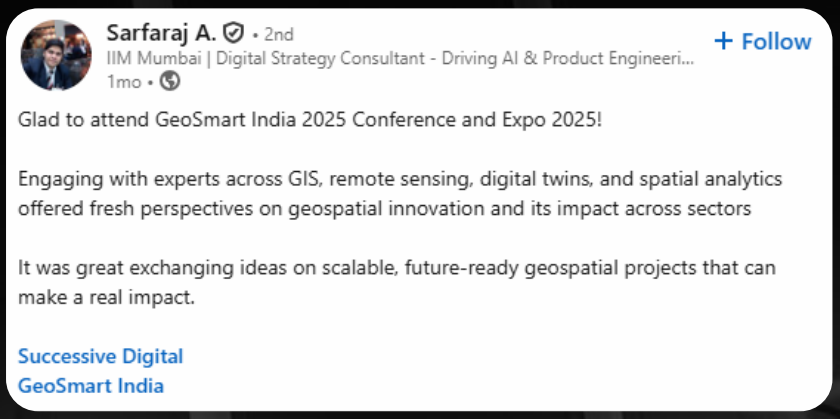
Excellence in Technology- Geology & Mining
Tata Steel

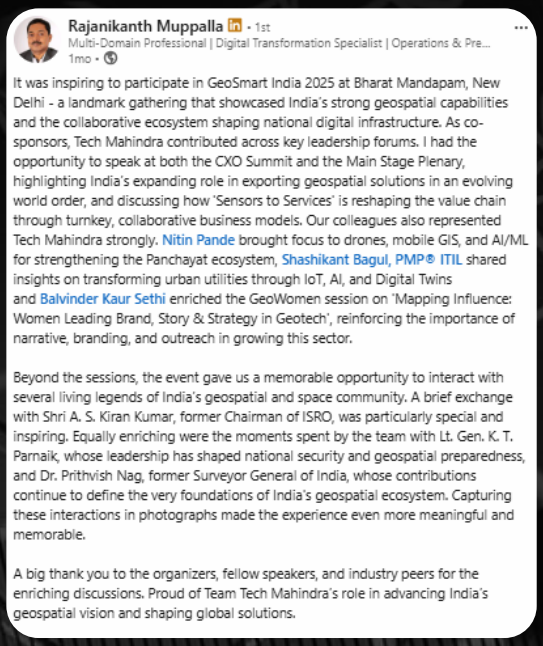
Excellence in Policy- e-Governance
Government of Haryana

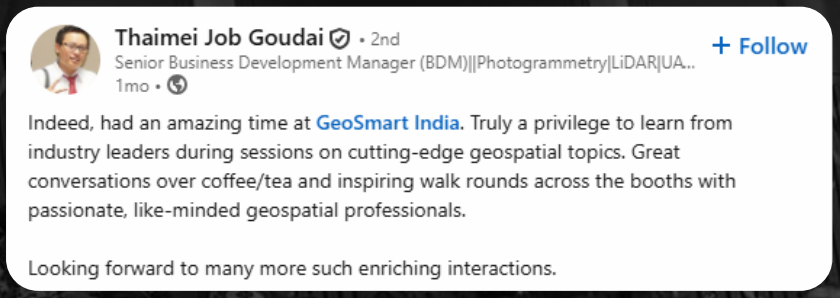
Excellence in Policy- Disaster Management
Assam State Disaster Management Authority

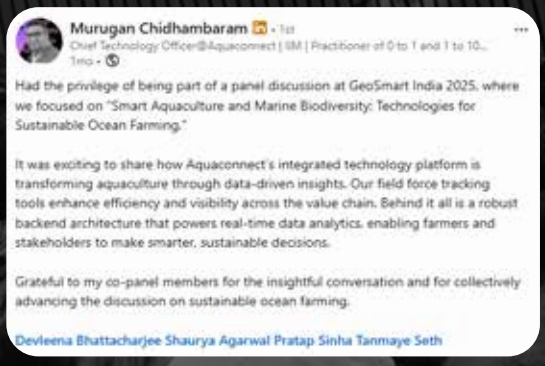
Excellence in Application- Last Mile Delivery
Namami Gane

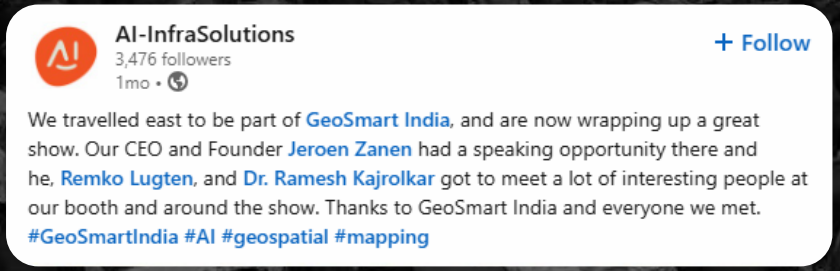
Social Media Performance Overview

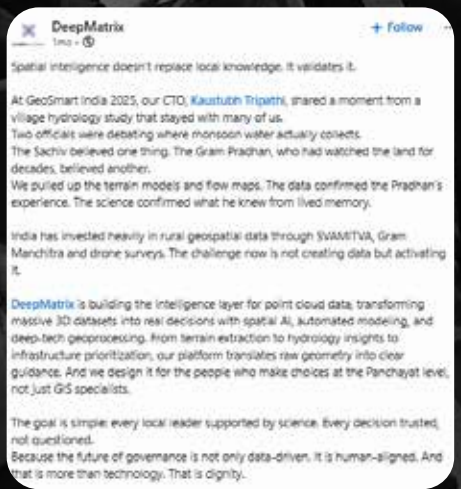












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GeoSmart India 2025 Celebrates Living Legends Who Shaped India's Geospatial and Space Legacy

The GeoSmart India Conference and Expo 2025 organised by GeoSpatial World held at Bharat Mandapam, New Delhi, featured a special session titled "Living Legends: Space and Geospatial Industry Trajectory." The session celebrated the visionaries whose pioneering work shaped India's remarkable journey from manual mapping to becoming a global leader in the space and geospatial domains.

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ANI
Delhi | On geospatial infrastructure for economic growth and national sovereignty, Former NITI Aayog CEO Amitabh Kant says, "Today's intersection is very critical because the geospatial sector is opened up in 2022. It has a huge transformational impact, and to my mind, the private sector of India needs to work to do digital twinning of cities. I have given them this challenge that at least one city of India should be completely digitally managed on a real-time basis to create a digital twin so that water, electricity grid, and sustainability are all able to run. Data should be accessible and real-time time and more importantly, it should be made available to the private sector. That is what the new geospatial policy has envisaged, and it's important that the government and the private sector work together to drive that."
ANI


MIZO DAILY VANGLAINI SINCE 1978
Hmarchhakah hmelhmang thlak hlawk thei danglamna tun hnaiah a thleng - *Larsap*


ANI
India accelerates efforts to build domestic geospatial infrastructure amid rising data demands


LOKMAT Times
Geospatial technology vital for evidence-based governance: Arunachal Guv


REPUBLIC
India Accelerates Geospatial Technologies for Land Governance and Economic Growth at GeoSmart 2025


GeoSmart India 2025 Summit Calls for Transformational Push in Geospatial Infrastructure to Boost Economy and National Security


हिन्दुस्थान समाचार Hindusthan Samachar
पांच सात में एक हजार बाइरी केंद्रों का होगा डिजिटल मानचित्रण


THE WEEK
lia struggles to scale digital farm te spite pilot success officials say


NDTV Profit
India Struggles To Scale Digital Farm Tech Despite Pilot Success, Officials Say


The Business Guardian
India needs transformational geospatial push to meet development and security goals


The Mizoram Post
Governor bats for geospatial push to reshape Northeast
HIGHLIGHTS


The Pioneer
TRUSTED SINCE 1865
India's geospatial market to double by 2030, says Amitabh Kant at GeoSmart World 2025


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