

Report on **NESAC User Interaction Meet** **3rd Edition**

NeUIM-2025

**Harnessing Space and GeoAI to Strengthen
Governance, Development, and Disaster Resilience in
Northeast India**

25-26 September, 2025



North Eastern Space Applications Centre
Department of Space, Govt of India
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NeUIM-2025 Report

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Director's Preface

The North Eastern Space Applications Centre (NESAC), established on 5th September 2000 under the Department of Space completed 25 years of service in September, 2025. NESAC was founded to harness space technology for the inclusive development of the NE region and has since worked closely with all state departments and several central agencies. Marking 25 years of excellence, NESAC proudly stands on the strength of 400+ projects, 250+ publications, and 300+ reports, symbolizing its enduring contributions to space applications and user empowerment.

NESAC has organized several interaction programmes, including NeUIM-2024 held in September 2025. I am pleased to note that recommendations from those meets have been effectively integrated into NESAC's geospatial services for wider developmental applications. Third Edition of the NESAC User Interaction Meet (NeUIM-2025) focuses on harnessing Space and GeoAI technologies to strengthen governance, infrastructure, resource management, disaster resilience, and capacity development across the North Eastern states. The active participation of representatives from all eight northeastern states, academia, research organizations, and industry highlighted the region's growing collaborative ecosystem in space technology applications, showcasing both the progress made and the potential for deeper cooperation in addressing developmental challenges.

Over two days, the meet enabled meaningful exchanges on disaster management, agriculture, governance, and industry collaboration, highlighting the transformative role of space technology in driving regional progress and supporting national development goals.

I extend my sincere gratitude to all participants, distinguished speakers, and institutional partners whose invaluable contributions made this meet a resounding success. Your insights and collaboration will continue to shape the future of space technology applications for the progress and resilience of the northeastern region. My heartfelt congratulations also go to the Organizing Committee for their dedicated and tireless efforts that ensured the grand success of this event.

Dr. S.P. Aggarwal

Director, NESAC

Acknowledgment

The Organizing Committee of the Third Edition of the NESAC User Interaction Meet (NeUIM–2025) extends its profound gratitude to the Chairman, ISRO, for his gracious consent and continuous encouragement in making this important event possible.

We extend our heartfelt thanks to Shri Satinder Kumar Bhalla, Secretary, North Eastern Council (NEC), for gracing the inaugural session as Chief Guest despite his busy schedule and for his insightful address that added immense value to the meet. Our sincere gratitude is extended to Dr. Prakash Chauhan, Director, NRSC, for gracing the event as the Guest of Honour, delivering an inspiring address on the everyday relevance of space technology, and for announcing major forthcoming initiatives. Our heartfelt thanks to Dr. R. P. Singh, Director, IIRS, for his presence as Guest of Honour and his insightful remarks on ISRO's user-driven approach and advanced modeling in climate and disaster domains.

Our sincere appreciation goes to Dr. S.P. Aggarwal, Director, NESAC, for his constant guidance, leadership, and support in the successful organization of NeUIM–2025. We also gratefully acknowledge the support and suggestions from Dr. K.K. Sarma, Group Head, RSAG, and all the Heads of Divisions for their contributions at various stages of preparation.

Special thanks are extended to all NESAC staff, CISF personnel, and contractual employees for their dedicated efforts in ensuring smooth execution of the event.

Above all, we extend our heartfelt gratitude to all participants, invited speakers, and delegates; both in physical and online modes; whose active involvement and valuable contributions made NeUIM–2025 a resounding success.

Dr Dibyajyoti Chutia

Chairman, Organizing Committee, NeUIM-2025

Executive Summary

The Third Edition of NESAC User Interaction Meet (NeUIM-2025) brought together diverse stakeholders to showcase achievements, address challenges, and outline strategic directions for advancing space technology applications in the NE region. Over two productive days, active participation from government, academia, and industry highlighted the region's growing technological capabilities and future opportunities for collaboration and innovation. The meet underscored significant advancements across the North Eastern Region, with State Remote Sensing Application Centres (SRSACs) and various user departments presenting successful initiatives in disaster management, precision agriculture, forestry, water resources, urban planning, geoscience, and infrastructure development. Academic and research institutions further showcased collaborative studies and analytical innovations that are driving evidence-based policymaking and technological progress in the region. Industry presentations showcased advanced commercial capabilities, including miniaturized satellite constellations, AI-driven analytics, and region-specific applications in agriculture, disaster management, and governance. These innovations reflected the growing strength of public-private partnerships and the seamless integration of commercial technologies with government operations in the region.

Notable developments included announcements related to the upcoming NISAR, ResourceSat-3/3A, and proposed ResourceSat-4 missions, alongside the establishment of a GeoAI Centre at NESAC, equipped with a 1,440-core high-performance computing system. These initiatives mark a major leap toward advanced analytical capabilities and regional innovation. Key challenges discussed included persistent cloud cover affecting optical data acquisition, limited institutional funding mechanisms, and the urgent need for comprehensive capacity building in AI/ML and advanced geospatial analytics. Participants emphasized the need for enhanced infrastructure, standardized algorithm validation frameworks, and user-friendly applications to ensure broader accessibility. The meet concluded with a collective call to strengthen collaboration among institutions and integrate emerging technologies to accelerate sustainable regional development through space-based solutions.

More than 540 participants (including 107 in-person) representing 122 Central & State user departments, industry and academia attended NeUIM-2025. The program included six technical sessions and inaugural & concluding sessions, with 42 speakers from ISRO/ DoS, other Government Departments, Academia and Industry sharing valuable insights.

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1. Background

The North Eastern Space Applications Centre (NESAC) was established on September 5, 2000, at Umiam, Shillong, Meghalaya, as an autonomous institution under the Department of Space (DOS). NESAC leverages space technology to address the unique challenges of the eight North Eastern states, aiming to drive socio-economic growth through space-based innovations. The vision of NESAC is to become a leading center of excellence in applying space technology to drive socio-economic growth in the NE Region, fostering transformation through the effective use of space-based innovations.

Over the past 25 years, NESAC has made substantial contributions to sectors such as natural resource management, disaster management, infrastructure planning, and environmental monitoring. The Centre has generated an extensive geospatial database and developed a variety of dashboards and mobile applications tailored for the NE region, including the Northeast Spatial Data Repository (NeSDR) with over 1,450 GIS layers serving 138 departments. NESAC has also conducted numerous capacity-building programs to enhance human resource development in space technology applications across the region, training over 40,000 personnel. Additionally, NESAC has signed MoUs with numerous premier research and academic institutions, as well as government departments, to foster research and development for operational services. Since its inception, NESAC has successfully completed over 400 projects in various thematic areas, producing 250 publications and 300 comprehensive reports.

The Third Edition of the NESAC User Interaction Meet (NeUIM–2025) was organized during September 25–27, 2025, coinciding with NESAC's Silver Jubilee celebrations. Conceived as an annual platform to enhance awareness among the user community and strengthen networks and collaborations across sectors, the meet was held under the theme “Leveraging Space and GeoAI Technologies to Strengthen Governance Infrastructure, Natural Resources, Disaster Management, and Capacity Building across the Northeastern States.” The event witnessed active participation from government agencies, academic institutions, and industry partners, featuring over 42 presentations across six technical sessions spanning two days. The meet highlighted major achievements, including the announcement of the GeoAI Centre, demonstrations of advanced applications such as glacial lake monitoring and precision agriculture, and active participation from both established industries and emerging startups. Emphasis was placed on academic–government collaboration, disaster risk reduction, and

fostering innovation ecosystems through public–private partnerships across the Northeastern Region.

The meet serves as a premier platform for fostering dialogue between technology providers, academic institutions, and user departments, ensuring that space-based applications remain grounded in practical governance needs and community priorities.

2. Inaugural Session

The Inaugural Session was graced by eminent dignitaries and leaders from India's space and governance sectors. The Chief Guest, Shri Satinder Kumar Bhalla, Secretary, North Eastern Council (NEC), joined the event online. The Guests of Honour, Dr. Prakash Chauhan, Director, National Remote Sensing Centre (NRSC), Hyderabad, and Dr. R.P. Singh, Director, Indian Institute of Remote Sensing (IIRS), Dehradun, also participated virtually. The session opened with the traditional lighting of lamps, symbolizing the dispelling of darkness through the light of knowledge and innovation. This was followed by a traditional felicitation ceremony, during which the dignitaries were honored with shawls featuring motifs representing all eight NE states, accompanied by indigenous plants and spice boxes from Meghalaya. The gesture reflected the cultural richness and ecological diversity of the region, setting a tone of unity, inclusivity, and respect for heritage—encapsulating the spirit of NeUIM–2025 as a convergence of technology, tradition, and transformation for the future of the NE region.

Dr. S.P. Aggarwal, Director NESAC, delivered the welcome address, highlighting NESAC's 25-year journey, 400+ projects, and focus on disaster management and user-driven solutions. Dr. Aggarwal highlighted NESAC's pivotal role in developing operational early warning systems for floods, lightning, and extreme weather, as well as in deploying UAV-based surveys during disasters. He emphasized the Centre's strong collaborative approach, noting over 20 MoUs with universities, research institutions, and industries to enhance capacity building and innovation. He underscored the growing relevance of AI, IoT, and Digital Twin technologies, reaffirmed NESAC's user-centric focus, and called for collective efforts to ensure that space technology benefits every citizen of the Northeast.



Scenes from inaugural session

Dr. R. P. Singh, Director, IIRS, Dehradun, commended NESAC for organizing NeUIM–2025 and shared insights on India’s evolving remote sensing landscape. He highlighted ISRO’s tradition of aligning technological advancements—from satellites to data systems—with user needs. Tracing progress from the Bhaskara era to today’s AI- and cloud-based analytics, he described the present as both a golden and challenging period for remote sensing. Dr. Singh emphasized the expanding role of geospatial technologies in addressing climate change, disasters, and predictive modeling, lauded NESAC’s contributions to regional development, and noted the growing shift from government-led to industry-driven space applications.

Dr. Prakash Chauhan, Director, NRSC, inaugurated NeUIM–2025, commemorating 25 years of NESAC’s service to the Northeastern Region. He commended NESAC and NEC for their partnership in promoting space technology for regional growth and recalled Dr. Vikram Sarabhai’s vision of using space for societal benefit. He highlighted how space-based systems—from satellite communications to NAVIC and GNSS—have become integral to daily life, and stressed the importance of high-resolution data for urban planning and governance. Focusing on the NER, he acknowledged its natural wealth and disaster vulnerabilities, praising

NESAC's contributions to disaster management and resource planning. He announced upcoming missions such as ResourceSat-3, OceanSat-3, NISAR, and LiDAR mapping of the Northeast, and emphasized the role of such meets in building collaboration toward a climate-resilient, technology-driven region.



Scenes from inaugural session

Shri Satyendra Kumar Bhalla, Secretary, NEC, and Chief Guest, inaugurated NeUIM-2025, commemorating NESAC's 25 years of dedicated service to the Northeastern Region. Congratulating NESAC and ISRO, he emphasized that the milestone reflects maturity, accountability, and alignment with Viksit Bharat's vision. He lauded NESAC's technical excellence and user-driven approach, noting that user engagement should evolve toward integrated, multi-sectoral decision-making—or "Stage Four"—linking applications across governance, environment, and development sectors. Introducing Society 5.0, he urged the creation of plug-and-play geospatial tools for cross-sector insights and called for stronger Centre-State-industry-academia collaboration. He reaffirmed NEC's support, expressing optimism that NESAC's next phase will accelerate progress toward a Viksit North East.

The inaugural session successfully set the tone for the two-day deliberations that followed, reaffirming NESAC's commitment to user-centric and operationally driven space technology applications. The Vote of Thanks was proposed by Dr. K. K. Sarma, Group Head, RSAG, while the session was anchored by Dr. Kasturi Chakraborty, Head, FED, NESAC.

3. Technical Sessions

3.1. Technical Session-1: EO Applications in India: Legacy, current trends & future directions

The first technical session focused on leveraging India's expanding Earth Observation (EO) capabilities to strengthen governance and support user-centric applications in the NE region. The discussion emphasized that the effective utilization of space technology requires a deep understanding of both existing infrastructure and future mission potential, along with integrated platforms to support informed decision-making. The session showcased India's upcoming EO missions, advancements in data dissemination platforms, and collaborative frameworks for capacity building between ISRO and academic institutions.

Presentations highlighted next-generation EO missions such as ResourceSat-3 and 3A, and the forthcoming ResourceSat-4 series, featuring enhanced spatial and spectral resolution. The NASA-ISRO SAR (NISAR) mission, offering all-weather radar data, was recognized as a milestone for open data access through national geospatial portals. Demonstrations of the Bhuvan platform illustrated how satellite-based thematic datasets support national programmes like Geo-MGNREGA and Smart Cities, underscoring the democratization of geospatial data through interoperable and decision-support systems.

Further discussions centered on operational applications of GeoAI, IoT, and Big Data in promoting "smart governance," with examples spanning disaster management, precision agriculture, and tourism development dashboards. Initiatives such as integrated election monitoring and single-window disaster alert platforms illustrated how space technology is increasingly embedded into routine governance functions. The session concluded by highlighting ISRO's continued outreach and academic collaboration programmes designed to build scientific capacity across the region.

The session was chaired by Dr. S. P. Aggarwal, Director, NESAC, and co-chaired by Dr. John Mathew, Associate Director, EDPO, ISRO HQ. The session coordinators were Dr. Victor Saikhom and Shri Rosly Boy Lyngdoh.



Glimpses of Technical session-I

Key Outcomes and Recommendations

- Enhanced data accessibility through upcoming mission launches will provide unprecedented temporal and spatial resolution for northeastern applications
- Bhuvan platform integration offers immediate opportunities for departments to access comprehensive geospatial datasets for decision-making processes
- NESAC's Geo AI initiatives present opportunities for advanced analytical capabilities that can transform governance approaches across the region
- Academic collaboration frameworks provide pathways for institutional capacity building and research partnerships
- Outreach programs offer systematic approaches to developing regional expertise in space technology applications
- Departments should prepare for integration of upcoming mission data, particularly NISAR datasets, into operational workflows by the end of November 2025
- User departments are encouraged to actively explore state-specific portals within Bhuvan for immediate application in governance activities
- Institutions should leverage NE-SPARK and other outreach programs to develop local expertise in space technology applications
- Academic institutions are encouraged to propose research initiatives through the RESPOND program to address region-specific challenges
- Continuous engagement with NESAC is essential for ensuring that space technology development remains aligned with evolving user requirements

3.2. Technical Session 2: Utilisation and Feedback of Space-Based Solutions for Planning and Development: 8 States of NER

The second technical session provided a platform for the eight NE states to share their experiences in adopting space-based technologies for planning and development. The session underscored the critical role of state remote sensing space application centres (SRSACs) of NER as the operational arms translating ISRO's capabilities into actionable solutions for governance, resource management, and disaster preparedness.

State representatives presented a range of sectoral applications—from landslide and flood hazard zonation mapping in mountainous areas to crop suitability and precision farming systems supporting agriculture. Several states highlighted their use of UAVs for cadastral

mapping, infrastructure monitoring, and forest resource assessment, while others showcased successful implementation of thematic dashboards, groundwater mapping, and mineral exploration. Innovative use of drones and participatory GIS approaches for village-level mapping and resource documentation reflected growing community engagement in spatial data creation.

Key outcomes emphasized persistent challenges such as cloud cover, which limits access to high-quality imagery, and the need for high-resolution, frequently updated datasets for effective monitoring. States also expressed the need for sustained funding mechanisms and dedicated R&D divisions to support long-term technology adoption. Common themes included training requirements in AI/ML, drone operations, and data analytics, as well as the necessity for reliable satellite communication infrastructure for emergency management. The session concluded by recommending stronger inter-state collaboration, establishment of regional training hubs, and the creation of systematic outreach materials to improve awareness among user departments.



Glimpses of Technical session-II



Glimpses of Technical session-II

The session was chaired by Shri PLN Raju, Special Secy., STCCD & Director, ASSAC, Guwahati and co-chaired by Abdul Hakeem, Deputy Director, BG & WSA, NRSC. The session coordinators were Shri Anjan Debnath and Shri Aniket Chakraborty.

Key Outcomes and Recommendations

- Facilitate access to high-resolution, cloud-free satellite imagery with improved temporal frequency to mitigate persistent cloud cover challenges prevalent in the region.
- Launch comprehensive training initiatives on artificial intelligence (AI), machine learning (ML), drone-based data acquisition, and advanced geospatial analytics tailored to regional requirements.
- Establish permanent northeastern regional training centers to ensure continuous capacity building and skill enhancement of technical personnel.

- Transition from short-term, project-based funding structures to sustainable financial models that enable long-term planning, institutional growth, and technological innovation.
- Support the creation of dedicated R&D divisions at state centers equipped with modern infrastructure and expertise in emerging technologies.
- Expand access to hyperspectral, microwave, and InSAR datasets for advanced applications, including hydrodynamic modeling, geological hazard monitoring, and deformation studies.
- Strengthen satellite-based communication systems for reliable data exchange during disaster events and promote the integration of AI/ML in analytical workflows.
- Encourage collaboration between state agencies to transition from “resource boundaries” to legally recognized boundaries through coordinated legal and institutional frameworks.
- Develop and disseminate outreach materials—including online lectures, brochures, demonstration videos, and success stories—to improve awareness among line departments and decision-makers.
- Organize targeted awareness campaigns to showcase successful use cases of space technology applications in governance and resource management.
- Establish inter-state coordination mechanisms and digital platforms for continuous exchange of knowledge, best practices, and technical resources across northeastern states.
- Encourage joint research programs and collaborative pilots to address common geospatial challenges through shared expertise and infrastructure.

3.3. Technical Session 3: Advancing Geospatial Applications: Case Examples

The third technical session focused on state-level case studies demonstrating the operational integration of geospatial technologies in sectors such as horticulture, forestry, mining, water management, soil conservation, and urban planning. Discussions highlighted how practical and scalable applications of remote sensing and GIS are enhancing decision-making at both local and regional levels.

Case studies included applications for crop suitability analysis, forest inventory management, mineral resource mapping, and wetland rejuvenation. Demonstrations showcased how advanced tools such as LiDAR, hyperspectral sensors, and hydrodynamic models are being used to address issues ranging from deforestation and illegal encroachment to flood mitigation

and eco-tourism. Innovative pilot projects were presented in the areas of glacial lake monitoring, watershed planning, and soil and water conservation, underscoring the breadth of applications now operational across the Northeastern states.



Glimpses of Technical session-III

Key Outcomes and Recommendations

- Establishment of farm-scale precision agriculture pilots and terrace-mapping tools for Mizoram.
- Expansion of FRAMS for real-time forest-fire prediction and illegal crop detection in Manipur.

- Development of a spectral signature database for mineral exploration in Meghalaya.
- Implementation of a statewide wetland rejuvenation monitoring system and integration of flood-forecasting models for Assam.
- Strengthening of regional training hubs to provide continuous capacity building across the Northeast.
- Formulation of sustainable funding frameworks to transition from project-based activities to institutional programmes.

The session was chaired by Shri R.K. Amarjit Singh, IFS, Special Secy (Forest, Env't & CC), Govt. of Manipur, and co-chaired by Dr BK Handique, Head, ASD & PPEG, NESAC. The session coordinators were Shri Nilay Nishant and Shri Gopal Sarma.

3.4. Technical Session 4: Space-Based Technologies for Disaster-Risk Reduction and Resilient Planning

The fourth technical session addressed the integration of space-based technologies into disaster-risk reduction and resilient development frameworks. Recognizing the Northeastern Region's exposure to multi-hazard risks—including floods, landslides, earthquakes, and glacial lake outbursts—the session emphasized the importance of combining EO data with ground-based sensor networks to strengthen early warning, preparedness, and response systems.

Presentations showcased diverse applications, including the use of hyperspectral and thermal satellite data for geothermal exploration and glacier monitoring, LiDAR and AI/ML models for hydroelectric project safety planning, and multi-scale landslide susceptibility mapping using radar and optical datasets. Institutions demonstrated how integrated hydrological modeling and satellite-linked monitoring networks enhance dam safety and flood forecasting, and how early warning dissemination systems combine national meteorological and hydrological feeds into unified digital platforms for public alerts.

Beyond conventional disaster themes, geospatial applications in health resilience were also presented, integrating disease surveillance data with spatial layers for targeted interventions. Demonstrations of unified alert systems and citizen engagement platforms highlighted the shift toward people-centric disaster preparedness.

The session concluded with recommendations to establish multi-hazard monitoring networks, improve validation of automated detection systems, expand AI/ML and hyperspectral analysis capabilities, and formalize inter-agency data-sharing frameworks. Emphasis was placed on scaling citizen-oriented applications across the Northeastern states and institutionalizing academic–government partnerships for sustained innovation in disaster resilience.

Key Outcomes and Recommendations

- Integrate automated landslide detection systems with field-based geological validation.
- Enable access to hyperspectral and thermal sensor data for geothermal and environmental monitoring.
- Establish satellite communication infrastructure for real-time monitoring and emergency coordination.
- Develop training programs for AI/ML applications in disaster modeling and early warning.
- Create frameworks for seamless multi-agency data sharing and coordinated disaster response.
- Enhance citizen-centric applications to promote public awareness and community participation.
- Establish integrated multi-hazard monitoring networks combining sensor and satellite data.
- Standardize validation protocols for automated detection through coordinated field programs.
- Accelerate deployment of AI/ML, InSAR, and hyperspectral technologies across institutions.
- Expand citizen engagement platforms like SMART AXOM across northeastern states.
- Formalize data-sharing protocols among meteorological, geological, and disaster agencies.
- Build sustained partnerships between academic, research, and operational institutions for innovation.

The session was chaired by Dr. KK Sarma, Group Head, RSAG, NESAC, and co-chaired by Shri P.K. Theophilus, Director, Landslide Division, Geological Survey of India. The session coordinators were Dr. Victor Saikhom and Shri Rosly Boy Lyngdoh.



Glimpses of Technical session-IV

3.5. Technical Session 5: Academic–Government Synergy for Capacity Building and Innovation in Geospatial Technologies

The fifth technical session emphasized the importance of building a robust ecosystem for geospatial capacity development through academic–government collaboration. The session acknowledged that long-term sustainability of space applications depends on systematic training, institutional research integration, and collaborative mechanisms for technology transfer and innovation.

Discussions highlighted successful collaborative frameworks that combine academic research capabilities with government implementation needs. Case studies included regional initiatives for geospatial project monitoring, digital governance integration at the Panchayat level, and UAV-based agricultural advisory systems for precision farming. Universities and research institutes showcased how supercomputing and GeoAI infrastructure can support applied research for regional challenges, offering pilot collaborations and student engagement programmes to strengthen human resource pipelines.

Survey and mapping agencies detailed advancements in real-time positioning systems through Continuously Operating Reference Stations (CORS), while technical centres demonstrated UAV applications for infrastructure monitoring, logistics optimization, and agricultural management.

The session identified widespread demand for systematic training in GNSS surveying, UAV operation, GeoAI, and data analytics. It emphasized establishing standardized GIS laboratories, internship and research exchange programmes, and comprehensive data-sharing frameworks between academic institutions and government agencies. The way forward included the creation of regional training networks, formalization of academic partnerships, documentation of best practices, and establishment of supportive policy frameworks to facilitate long-term collaboration and innovation in the geospatial domain.

Key Outcomes and Recommendations

- Establish systematic training programs covering GNSS surveying, UAV operations, GeoAI applications, and advanced geospatial data processing for government departments.
- Set up specialized GIS laboratories and technical support centers at state and district levels to meet operational and analytical needs.
- Provide dedicated technical assistance for integrating geospatial tools into existing government digital platforms and workflow systems.
- Leverage academic research capabilities through targeted pilot projects and technology demonstrations addressing region-specific challenges.
- Implement standardized frameworks for secure and privacy-compliant data sharing between academic institutions and government agencies.
- Establish regional training and technical support hubs to enable continuous capacity building across the northeastern states.
- Formulate structured frameworks to strengthen academic-government collaboration, focusing on research partnerships, student engagement, and technology transfer.
- Standardize GIS laboratory infrastructure and equipment across institutions to ensure interoperability and operational efficiency.
- Create comprehensive knowledge repositories and best-practice sharing platforms for cross-state learning and innovation diffusion.
- Document and disseminate successful implementation models to guide replication and scalability across departments and sectors.

- Expand internship and applied research opportunities linking academic learning with governance challenges.
- Develop supportive policy frameworks promoting academic-government collaboration, data security, and responsible innovation.

The session was chaired by Shri G. Harikrishnan, Director, CBPO, ISRO, and co-chaired Dr. Jonali Goswami, PC, O&CB, NESAC. The session coordinators were Avinash K Chouhan and Dr. Pradesh Jena.



Glimpses of Technical session-V

3.6. Technical Session 6: Building Innovation Ecosystems: Industry and Startups in Space & Geospatial Technologies

The final session focused on strengthening the innovation ecosystem by fostering partnerships between government, industry, and startups. The session underlined that the future of geospatial technology in the Northeast depends on integrating commercial innovation with institutional expertise and operational needs.

A wide range of commercial capabilities was presented, including low Earth orbit satellite constellations for all-weather observation, cloud-based geospatial analytics platforms, AI/ML-enabled flood forecasting tools, high-resolution imaging systems, hyperspectral satellite services, and advanced UAV and IoT-based applications. Discussions emphasized the growing potential of private sector contributions in areas such as agricultural monitoring, infrastructure planning, disaster response, and environmental management.

Key dialogues centered on the need for validation frameworks to ensure reliability of commercial models under diverse regional conditions, and on clarifying data access policies for private entities to encourage responsible innovation. The establishment of a *GeoAI Centre at NESAC*, equipped with high-performance computing infrastructure and open-access provisions for startups, was highlighted as a major institutional step toward supporting regional innovation and technology incubation.

Participants agreed on the importance of structured collaboration models, technology-transfer mechanisms, and capacity-building initiatives to integrate emerging commercial capabilities with public-sector needs. The session concluded with a roadmap focusing on operationalizing the GeoAI Centre, developing validation frameworks, refining data access protocols, strengthening public-private partnerships, and scaling successful innovation models across the Northeastern states.

Key Outcomes and Recommendations

- Develop a comprehensive validation framework to assess commercial algorithms and models under diverse regional and thematic conditions.
- Standardize data access protocols for private sector engagement, ensuring a balance between accessibility, security, and intellectual property protection.
- Establish collaborative research platforms enabling joint R&D between government institutions, startups, and industry partners.
- Create technology transfer mechanisms to translate research outcomes into scalable commercial applications and operational solutions.
- Strengthen regional innovation hubs and incubation centers to foster entrepreneurship and technology-driven regional development.
- Implement skills development programs to build workforce readiness for collaboration with emerging technologies and analytical platforms.

- Launch systematic validation programs to certify performance and reliability of commercial models before operational adoption.
- Refine and enforce data access policies that support innovation while safeguarding sensitive and proprietary information.
- Formalize public-private research frameworks for co-development of solutions addressing regional and sectoral challenges.
- Enhance technology transfer and commercialization ecosystems through dedicated institutional support and incentive structures.
- Develop cross-sector knowledge-sharing mechanisms to document and disseminate best practices in public-private partnerships.
- Promote commercial participation in weather intelligence, agriculture, and infrastructure monitoring through integration of private datasets and analytics.
- Utilize the GeoAI Center as a central node for coordinated collaboration between government R&D capabilities and private innovation ecosystems.

The session was chaired by Dr S S Kundu, Head, SASD, NESAC, and co-chaired by Shri Debajit Das, DGM (Tec), D&E, NEEPCO, Guwahati. The session coordinators were Shri Anjan Debnath and Shri Rosly Boy Lyngdoh.



Glimpses of Technical session-VI

4. Concluding Session: NESAC User Interaction Meet (NeUIM) 2025

The NESAC User Interaction Meet (NeUIM) 2025 concluded with a comprehensive synthesis of insights that encapsulated the progress, achievements, and strategic directions emerging from the three-day deliberations. The closing remarks reaffirmed that the meet successfully demonstrated how space and geospatial technologies have evolved from specialized tools for data acquisition and mapping into comprehensive instruments for governance, resilience, and inclusive development. The discussions collectively established a forward-looking roadmap to strengthen the role of geospatial technology as a cornerstone for sustainable development across the Northeastern Region.

Strategic Themes and Future Directions

The concluding reflections emphasized the *adoption of global best practices*, calling for adaptation of successful international models to local conditions and community needs. It was noted that global experiences in geospatial data integration, AI analytics, and digital governance provide valuable references for designing context-specific solutions that can effectively address the unique challenges of the Northeastern Region.

Another key theme was the *expansion beyond traditional applications*. The focus shifted from routine mapping and surveying to emerging domains such as urban traffic optimization, climate adaptation, public health analytics, and infrastructure resilience. Participants highlighted the growing role of geospatial data in predictive modeling, risk management, and evidence-based decision-making for diverse societal needs.

A strong emphasis was placed on adopting a *community-centric development approach*, ensuring that technological innovations serve citizens directly. The future of geospatial technology in India lies in designing tools that reach every section of society—bridging digital divides and aligning with local priorities. This vision is complemented by a focus on *user-friendly technology development*, encouraging intuitive, easily accessible platforms comparable to common digital applications like navigation systems or mobile apps. Simplified user interfaces and automated analytics were seen as vital for democratizing access to space-based information.

The session also underscored the importance of *enhancing public–private partnerships* to foster innovation and efficiency. By combining institutional research capacities with the agility of

startups and the technical depth of established companies, the geospatial sector can drive impactful, scalable solutions tailored to regional governance, environmental, and developmental challenges.

Key Outcomes and Achievements

NeUIM–2025 marked a milestone in demonstrating the significant progress achieved in applying space-based technologies across multiple sectors of the Northeastern Region. State Remote Sensing Centres showcased operational projects addressing flood monitoring, agricultural productivity, and infrastructure management, while academic institutions demonstrated successful research collaborations and capacity-building initiatives.

Industry and startup participants exhibited advanced commercial capabilities in Earth observation, GeoAI, and hyperspectral imaging, underscoring the potential of private-sector innovation to complement public missions. A landmark announcement during the meet—the establishment of the *GeoAI Centre at NESAC*—was recognized as a pivotal development, signifying a major institutional step toward high-performance analytics and collaborative innovation. The new centre will serve as a hub for research, validation, and co-development of AI-driven geospatial applications for the entire region.

Strategic Recommendations and Priority Actions

Four overarching priorities emerged from the deliberations:

A. Technology Integration and Innovation:

- Accelerate the adoption of AI and machine learning within operational geospatial workflows.
- Strengthen collaboration among government institutions, academia, and private-sector technology providers.
- Establish standardized validation frameworks for commercial algorithms and analytical models to ensure reliability across diverse environments.

B. Capacity Building and Human Resource Development:

- Expand structured training and certification programmes on UAV operations, GeoAI applications, and advanced analytics.
- Enhance outreach and awareness programmes for line departments to foster adoption of geospatial solutions.

- Deepen academic–government partnerships to provide experiential learning and field-based research opportunities.

C. Infrastructure and System Development:

- Implement robust data access policies to improve high-resolution data availability despite persistent cloud cover.
- Strengthen communication and satellite-based networks to support real-time monitoring, early warning, and decision support.
- Develop shared data platforms and collaborative repositories for cross-state knowledge sharing and optimization of resources.

D. Community Engagement and Service Delivery:

- Promote the development of user-friendly applications that simplify geospatial functions for non-technical users.
- Implement outreach programmes demonstrating the tangible community benefits of space applications in sectors such as agriculture, health, and disaster management.
- Build dynamic feedback mechanisms to align technology development with evolving public needs and field realities.

Regional Impact and National Significance

The concluding deliberations reaffirmed that the Northeastern Region has emerged as a leader in leveraging space and geospatial technologies for development. The region's achievements in *disaster management, agricultural monitoring, and e-governance* exemplify scalable models for national replication. The collaborative framework demonstrated through NeUIM–2025—uniting government agencies, academic institutions, commercial innovators, and local communities—embodies a holistic approach to sustainable technology-driven development.

By combining scientific expertise with regional priorities and citizen engagement, the Northeastern Region is positioning itself as a model for *spatially enabled, resilient, and inclusive growth*. The outcomes of NeUIM–2025 reaffirm NESAC's pivotal role in advancing the national vision of using space technology for the benefit of every citizen, thereby contributing meaningfully to India's larger goal of a *Viksit Bharat* through technology, innovation, and collaboration.

The session was moderated by Dr SP Aggarwal, Director, NESAC.



Scenes from concluding session

5. Registration for NeUIM-2025 and Participation in the Event

Registration details

The online registration portal for participation in NeUIM-2025 was launched in late July 2025, hosted at <https://neuim2025.in>. A total of 434 participants registered through the portal, of which 107 opted for in-person participation, while the remaining participants joined in the online mode. The state-wise distribution of registered users is presented in **Table-1**.

Table – 1: State-wise participations of departments

States	Nos. of departments
Arunachal Pradesh	3
Assam	27
Manipur	6
Meghalaya	30
Mizoram	10
Nagaland	9
Sikkim	4
Tripura	12
Other States	21
Grand Total	122

Participation details

NeUIM-2025 has received an extremely positive response, with over **542** participants from state and central departments, academic and research institutions, PSUs, and industries across the country. Total in-person participants in the event were around **107**. In addition, more than **400** views were observed in YouTube live video streaming. Most of the participants were from various state Govt. departments of NE states such as State Remote Sensing Applications Centres, Science and Technology Councils, Agriculture, Horticulture, Soil and Water Conservation, Rural Development, Forest, Water Resources, Disaster Management Authority etc. The details of the same are presented in **Table-2 as Annexure-I**.

Notable Quotes

"Reaching to the age of 25 is the most productive age for human beings and I'm sure that the same applies to NESAC also. Now since it is 25, very mature, I think the state governments have full right to expect much more than what they used to expect till date."

- **Shri Satindra Kumar Bhala, Secretary, NEC**

"Today we see that space technology is being used in each and every activity of our citizens welfare as well as making their life much easier... sometime we may realize, sometime we may not realize."

- **Dr. Prakash Chauhan, Director, NRSC**

"This is the time which is a very golden period of remote sensing as well as the most challenging period of remote sensing... now since technology has grown up our problems have also grown up. Now we are asking more detailed questions, we are posing much complex questions."

- **Dr. R.P. Singh, Director, IIRS**

"Our journey has not only been about projects and technology but also about people. NESAC has always believed in empowering the region's human resources."

- **Dr. S.P. Aggarwal, Director, NESAC**

"We are moving from Hindsight to Foresight... from 'what happened' to 'what should I do'. This is the key to smart governance."

- **Dr. S.P. Aggarwal, Director, NESAC**

Memories of NeUIM-2025







Table-2: List of departments participated in NeUIM-2025

Sl. No.	Organization	Category	State
1.	Animal Husbandry and Veterinary Department	State	Meghalaya
2.	Arunachal Pradesh Space Application Centre	State	Arunachal Pradesh
3.	ASRLM Govt of Assam PNRD Department	State	Assam
4.	Assam Agroforestry Development Board	State	Assam
5.	Assam Disaster Management Authority (ASDMA)	State	Assam
6.	Assam Forest Department	State	Assam
7.	Assam Gas Company Ltd	PSU	Assam
8.	Assam Police Radio Organisation (APRO), Police, Assam	State	Assam
9.	Assam Skill Development Mission	State	Assam
10.	Assam State Space Application Centre	State	Assam
11.	Border Protection and Development Department Assam	State	Assam
12.	Botanical Survey of India, Eastern Regional Centre, Shillong	Central	NA
13.	Bio-Resources Development Centre (BRDC)	Central	NA
14.	Brahmaputra Board	Central	Assam
15.	Centre for Earth Sciences & Himalayan Studies (CES&HS), Itanagar, Arunachal Pradesh	State	Arunachal Pradesh
16.	Chief Electoral Officer (CEO) Office	State	Meghalaya
17.	Civil Defence and Home Guards Assam	State	Assam
18.	Department of Agriculture Meghalaya	State	Meghalaya
19.	Department of Environment Forests and Climate Change	State	Nagaland
20.	Department of Fisheries and Aquatic Resources	State	Nagaland

21.	Department of Fisheries Manipur	State	Manipur
22.	Department of Horticulture and Soil Conservation	State	Manipur
23.	Department of Information and Communication Technology	State	Mizoram
24.	Department of Land Records	State	Assam
25.	Department of Land Resources	State	Nagaland
26.	Department of Science and Technology, Govt. of Sikkim	State	Sikkim
27.	Department of Science and Technology	State	Arunachal Pradesh
28.	Department of Fisheries	State	Tripura
29.	Department of Science & Tech, Kohima, Nagaland	State	Nagaland
30.	Department of Agriculture (R&T)	State	Meghalaya
31.	Department of Agriculture	State	Nagaland
32.	Directorate of Animal Husbandry AND Veterinary	State	Mizoram
33.	Directorate of Animal Husbandry and Veterinary Department	State	Meghalaya
34.	Directorate of Economics, Statistics & Monitoring and Evaluation (DESME)	State	Sikkim
35.	Directorate of Educational Research and Training, DERT	State	Meghalaya
36.	Directorate of Higher and Technical Education	State	Meghalaya
37.	Directorate of Higher and Technical Education (DHTE)	State	Meghalaya
38.	Directorate of Horticulture and Soil Conservation, Manipur	State	Manipur
39.	Directorate of Information Technology and Communications Govt. Of Meghalaya	State	Meghalaya
40.	Directorate of Land Records and Settlement	State	Tripura
41.	Directorate of Mineral Resources, Government of Meghalaya, Shillong, Meghalaya	State	Meghalaya

42.	Directorate of Panchayats	State	Tripura
43.	Directorate of Panchayats, Government of Tripura, Kunjaban, West Tripura.	State	Meghalaya
44.	Directorate of School Education and Literacy	State	Meghalaya
45.	Directorate of Soil & Conservation, Govt. of Meghalaya, Shillong,	State	Meghalaya
46.	Directorate of Tourism	State	Assam
47.	District Disaster Management Authority	State	Assam
48.	District sericulture office Jowai	State	Meghalaya
49.	DITEC IT Department Govt of Assam	State	Assam
50.	Defense Research Development Organization (DRDO)	Central	Karnataka
51.	Fisheries Department	State	Mizoram
52.	Forest and Environment Department, Sikkim	State	Sikkim
53.	Geological Survey of India	Central	NA
54.	Haryana Space and Research Application Centre	Central	Haryana
55.	Haryana Space Applications Centre	State	Haryana
56.	Health and Family Welfare Department	State	Mizoram
57.	Horticulture Department, Government of Mizoram	State	Mizoram
58.	Indian Council of Agricultural Research (ICAR)	Central	NA
59.	Indian Space Research Organisation (ISRO)	Central	NA
60.	Irrigation and Water Resources Department	State	Mizoram
61.	Irrigation Department	State	Assam
62.	Khelo India State Centre of Excellence	Central	Tripura
63.	Land Revenue and Disaster Management Department	State	Sikkim
64.	Madhya Pradesh State Electronic Development Corporation Limited	State	Madhya Pradesh
65.	Manipur Remote Sensing Applications Centre	State	Manipur

66.	Meghalaya Basin Development Authority	State	Meghalaya
67.	Meghalaya Energy Corporation Limited (MePGcl)	PSU	Meghalaya
68.	Meghalaya Power Transmission Corporation Limited (MEPTCL)	PSU	Meghalaya
69.	Meghalaya State Agri Business Consortium	State	Meghalaya
70.	Meghalaya State Disaster Management Authority	State	Meghalaya
71.	Mizoram health services	State	Mizoram
72.	Mizoram ICT, Department of Information & Communication Technology - Mizoram	State	Mizoram
73.	Mizoram Remote Sensing Application Centre, Science & Technology, MIRSAC	State	Mizoram
74.	Municipal corporation, Gurugram	State	Haryana
75.	Nagaland Pollution Control Board	State	Nagaland
76.	National Health Mission Assam	State	Assam
77.	National Informatics Centre	Central	Nagaland
78.	National Disaster Response Force (NDRF)	Central	NA
79.	National medicinal plants board, Ministry of AYUSH, Govt of India	Central	Delhi
80.	North Eastern Electric Power Corporation Limited (NEEPCO), Guwahati	PSU	NA
81.	North Eastern Council (NEC), Shillong	Central	NA
82.	North Eastern Regional Institute of Water and Land Management	Central	Assam
83.	Office of The Deputy Commissioner	State	Meghalaya
84.	Oil India Limited	PSU	Central
85.	Planning & Transformation Department	State	Nagaland
86.	Public Health Engineering Department, Meghalaya	State	Meghalaya
87.	Public Works Department	State	Meghalaya

88.	Public Works Department (PWD) ROADS	State	Assam
89.	Public Works Department Water Resources (WR)	State	Tripura
90.	Remote Sensing Application Centre	State	Uttar Pradesh
91.	RFRI	Central	Assam
92.	S&T Cell, PIP & SDD, Meghalaya	State	Meghalaya
93.	Samagra Shiksha Axom, Education Department	State	Assam
94.	Sericulture & Weaving, Meghalaya	State	Meghalaya
95.	Shillong Science Centre	State	Meghalaya
96.	Society for TRESP, Tribal welfare dept	State	Tripura
97.	Soil and Water Conservation Department	State	Nagaland
98.	Soil and Water Conservation Department	State	Meghalaya
99.	Soil Conservation Department	State	Assam
100.	Soil Conservation Department under Bodoland Territorial Region	State	Assam
101.	Special Secy (Forest, Env't & CC), Govt. of Manipur, Imphal	State	Manipur
102.	State Council of Educational Research and Training	State	Meghalaya
103.	State Council of Educational Research and Training, Tripura	State	Tripura
104.	State Forest Department, Meghalaya	State	Meghalaya
105.	State Govt Office of CEO Meghalaya	State	Meghalaya
106.	Survey of India	Central	NA
107.	Tea Tribes and Adivasi Welfare Department	State	Assam
108.	Transformation and development department	State	Assam
109.	Transport department Mizoram	State	Mizoram
110.	Tripura Forest Department	State	Tripura
111.	Tripura Rural Economic Growth and Service Delivery Projects -TRESP	State	Tripura

112.	Tripura Space Application Centre (TSAC), Department of Science & Technology, Govt. of Tripura	State	Tripura
113.	Tripura Urban Knowledge Hub Urban Development Department	State	Tripura
114.	Urban Development Department, Nagaland	State	Nagaland
115.	Urban Management Centre	Central	Gujarat
116.	Urban Management Centre	State	Assam
117.	Water Resources Department	State	Meghalaya
118.	Water Resources Department	State	Manipur
119.	Water Resources Department Government of Assam	State	Assam
120.	Western Himalayan Regional Centre Jammu	Central	Jammu and Kashmir
121.	World Health Organization (WHO)	Central	NA
122.	Youth Affairs and Sports Department	State	Tripura



3rd NESAC User Interaction Meet (NeUIM-2025)

September 25-26, 2025



INAUGURAL PROGRAM

Date: September 25, 2025 (Thursday)

Time: 10:00 – 12:00 Hrs

Venue: NESAC Auditorium, via Hybrid Mode (online or in-person)

Time (Hrs)	Agenda item
10:00 – 10:05	Invocation, lighting of lamp, and felicitation of the guests
10:05 – 11:10	Welcome and opening remarks Dr. S. P. Aggarwal, Director, NESAC
	Address by Guest of Honour Dr. R.P. Singh, Director, IIRS
	Address by Guest of Honour Dr. Prakash Chauhan, Director, NRSC
11:10 – 11:25	Address by Chief Guest Shri Satinder Kumar Bhalla, ITS, Secretary, NEC
11:25 – 11:30	Vote of Thanks Dr. KK Sarma, Group Head, RSAG, NESAC
11:30 – 12:00	Tea break



3rd NESAC User Interaction Meet (NeUIM-2025)

September 25-26, 2025



Programme Schedule

Venue: NESAC Outreach building via Hybrid Mode (online or in-person)

DAY - 1	
09:00 – 10:00 Hrs	Registration
10:00 – 11:30 Hrs	Inaugural Session (NESAC Auditorium, Main Building)
High Tea & Networking (11:30 – 12:00 Hrs)	
Technical Session – I ISRO/ DOS Support for Smart Governance & User-Centric Applications in NER September 25, 2025 (Thursday) Session Time: 12:00-13:30 Hrs Session Chair : Dr SP Aggarwal, Director, NESAC Session Co-Chair : Dr. John Methew, Associate Director, EDPO, ISRO HQ	
Topic	Speaker
Present & Future EO Missions and Sensor Technologies: Opportunities for the North Eastern Region	Dr. John Methew , Associate Director, EDPO, ISRO HQ
Enhancing User Access to Thematic Layers and National Geoportals for Smart Governance	Dr. Abdul Hakeem , Deputy Director, BG & WSA, NRSC
Enabling Smart Governance in NER through Integrated Space-Based Solutions and GeoAI	Dr SP Aggarwal , Director, NESAC
Space Science Education, Outreach, and Collaborative Initiatives of ISRO–CBPO	Shri G. Harikrishnan , Director, CBPO, ISRO HQ
Session Coordinators	: Dr. Victor Saikhom, Scientist/ Engineer-SF, NESAC : Shri Rosly Boy Lyngdoh, Scientist/ Engineer-SD, NESAC
Lunch Break & Networking (13:30 – 14:30 Hrs)	

Technical Session – II

Utilisation and Feedback of Space-Based Solutions for Planning and

Development: 8 States of NER

September 25, 2025 (Thursday)

Session Time: 14:30-16:00 Hrs

Session Chair : Shri PLN Raju, Special Secy., STCCD & Director, ASSAC, Guwahati

Session Co-Chair : Dr. Abdul Hakeem, Deputy Director, BG & WSA, NRSC

Topic	Speaker
Utilisation and Feedback of Space Technology for Planning and Development:	
– Arunachal Pradesh	Dr. Harekrishna Dutta , Director, Arunachal Pradesh Space Application Centre (APSAC), GoAP, Itanagar, Arunachal Pradesh
– Assam	Shri PLN Raju , Special Secretary (SS), Science, Technology and Climate Change Department (STCCD) & Director, Assam State Space Application Centre (ASSAC), Guwahati
– Manipur	Shri OinamNodiachand Singh , Director, Manipur Remote Sensing Applications Centre (MARSAC), Planning Department, Government of Manipur, Imphal, Manipur
– Meghalaya	Dr. Gaurav Singh , Asst. General Manager (RS & GIS), MegLIFE, MBDA/ MBMA, Shillong, Meghalaya
– Mizoram	Shri C Vanlalengkima , Scientist, Mizoram State Remote Sensing Application Centre (MiRSAC), Directorate of Science & Technology Govt. of Mizoram
– Nagaland	Shri Merenwapang , Deputy Project Director, Nagaland GIS & Remote Sensing Centre (NGISRSC), Planning & Transformation Department, Government of Nagaland
– Sikkim	Miss Priya Pradhan , RA, Department of Science and Technology, Govt. of Sikkim
– Tripura	Shri Abhishek Dasgupta , Officer-In-Charge, Tripura Space Application Centre (TSAC), Department of Science & Technology, Govt. of Tripura
Session Coordinators	: Shri Anjan Debnath, Scientist/ Engineer-SF, NESAC : Dr. Aniket Chakravorty, Scientist/ Engineer-SE, NESAC
Tea Break & Networking (16:00 – 16:30 Hrs)	



3rd NESAC User Interaction Meet (NeUIM-2025)

September 25-26, 2025



Technical Session – III

Advancing Geospatial Applications: Case Examples

September 25, 2025 (Thursday)

Session Time: 16:30-18:00 Hrs

Session Chair : Shri R.K. Amarjit Singh, IFS, Special Secy (Forest, Env't & CC), Govt. of Manipur
Session Co-Chair : Dr BK Handique, Head, Agriculture and Soil Division (ASD) & Head, PPEG, NESAC

Topic	Speaker
Geospatial technology applications for sustainable development of horticulture in Mizoram	Ms. Emelyne Lalmawipuii , Deputy Director, Horticulture Department, Government of Mizoram, Tuikual, Aizawl
Advancing Forest Governance through Spatial Analytics and Inventory-Based Planning	Shri R.K. Amarjit Singh, IFS , Special Secy (Forest, Env't & CC), Govt. of Manipur, Imphal, Manipur
Role of Geospatial Technology for Mining & Mineral Mapping	Shri. Damapaya SM Pdah , Geologist, Directorate of Mineral Resources, Government of Meghalaya, Shillong, Meghalaya
Identification & Rejuvenation of Depleting Wetlands/ Oxbow Lakes to Utilise for Flood Water Diversion & Development of Tourism Sites, Assam	Sri Srimanta Medhi , Assistant Executive Engineer, Director Design, Water Resources Department, Govt. of Assam
Developmental Activities using Geospatial Technologies for Natural Resource Management	Shri Kekunei Henry Ltu , Scientist B, Nagaland science and technology council (NASTEC), Dept of Sc. & Tech, Kohima, Nagaland
Application of Geospatial Technology for Soil & Water Conservation in Meghalaya	Shri Nigel Kharmalki , Planning Officer, Directorate of Soil & Conservation, Govt. of Meghalaya, Shillong
Session Coordinators	: Shri Nilay Nishant, Scientist/ Engineer-SE, NESAC : Dr. Gopal Sharma, Scientist/ Engineer-SE, NESAC
Cultural Programme (19:00 – 20:00 Hrs)	
Dinner (20:00 – 21:30 Hrs)	

DAY - 2

Technical Session – IV

Space-Based Technologies for Disaster-Risk Reduction and Resilient Planning

September 26, 2025 (Friday)

Session Time: 09:30-11:00 Hrs

Session Chair : Dr. KK Sarma, Group Head, RSAG, NESAC

Session Co-Chair : Shri P.K. Theophilus, Director, Landslide Division, Geological Survey of India

Topic	Speaker
Earth Science Perspectives from Space to Field for Societal Benefits in the Eastern Himalaya	Er. Tana Tage , Director, Centre for Earth Sciences & Himalayan Studies (CES&HS), Itanagar, Arunachal Pradesh
Geo-Spatial Decision Support System on TB Outbreak & Control	Dr. Gautam Borgohain , SHQ Consultant, Assam & N.E., Technical Support Network, GoI-World Health Organization, National TB Elimination Programme
Geospatial Technologies for Efficient Planning and Management of Hydro-Electric Projects	Shri Debajit Das , DGM (Tec), D&E, NEEPCO, Guwahati
Space Technology for Revolutionizing Weather Services	Shri Thangjalalhouvum , Scientist 'D', Meteorological Centre, IMD Shillong
Use of Geospatial Data in Landslide Studies	Shri P.K. Theophilus , Director, Landslide Division, Geological Survey of India, North Eastern Region, Shillong
Strengthening Disaster Preparedness in Assam through Space-Based Early Warning and Risk Assessment Systems	Shri Biren Baishya , GIS Expert, ASDMA, Guwahati
NeSDR, NER-DRR & SMART AXOM: NESAC Initiatives for Strengthening Governance and Geospatial Innovation	Shri Nilay Nishant , Scientist/ Engineer – SE, GID, NESAC
Session Coordinators	: Shri Nilay Nishant, Scientist/ Engineer-SE, NESAC : Dr. Aniket Chakravorty, Scientist/ Engineer-SE, NESAC
Tea Break & Networking (11:00 – 11:30 Hrs)	

Technical Session – V

Academic–Government Synergy for Capacity Building and Innovation in Geospatial Technologies

September 26, 2025 (Friday)

Session Time: 11:30-13:00 Hrs

Session Chair : Shri G. Harikrishnan, Director, CBPO, ISRO

Session Co-Chair : Dr. Jonali Goswami, PC, O&CB, NESAC

Topic	Speaker
Geo-Enabled Monitoring of Infrastructure Projects in NER: NEC's Vision for Transparent Development	Dr Sanabam Sujen Singh , Extension Officer (Seismology), North Eastern Council (NEC), Shillong
Space and Geospatial Technologies for Strengthening Panchayat-Level Planning	Shri Anurag Sen , Joint Director of Panchayats, Directorate of Panchayats, Government of Tripura, Kunjaban, West Tripura.
Space and Geospatial Solutions for Cadastral Mapping and Land Records Management	Shri Indrajit Das , Joint Director, Directorate of Land Records, Government Of Assam
Collaborations for GeoAI-Based Agri Advisory and Precision Farming	Dr. RK Josmee , Associate Professor (Agricultural Extension), School of Social Sciences, College of P.G. Studies in Agricultural Sciences, CAU (I), Umiam, Meghalaya
Opportunities for Academic Collaboration in Earth Observation (EO) and GeoAI	Dr. Rishikesh Bharti , Associate Professor, Earth System Science and Engineering Division, Department of Civil Engineering & Associate Faculty: Centre for Disaster Management & Research // Centre for Sustainable Water Research, Indian Institute of Technology Guwahati
CORS & its Applications	Shri Rajiv Kumar Srivastava , Director, Meghalaya & Arunachal Pradesh GD, Survey of India, Shillong
Harnessing UAV Technologies and New Initiatives for Informed Decision-Making	Er. Atho-o Kethorietuo , UAV Engineer (GIS Assistant), Nagaland GIS & Remote Sensing Centre (NGISRSC), Planning & Transformation Department, Government of Nagaland



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Session Coordinators : Dr. Avinash K Chouhan, Scientist/ Engineer-SE, NESAC
: Dr. Pradesh Jena, Scientist/ Engineer-SD, NESAC

Lunch Break & Networking (13:00 – 14:00 Hrs)

Technical Session – VI

Building Innovation Ecosystems: Industry and Startups in Space & Geospatial Technologies

September 26, 2025 (Friday)

Session Time: 14:00-15:30 Hrs

Session Chair : Dr S S Kundu, Head, SASD, NESAC

Session Co-Chair : Shri Debajit Das, DGM (Tec), D&E, NEEPCO, Guwahati

Topic	Speaker
LEO Satellites - Microwave Sounder Data & AI/ ML Models: A New Era in Tropical Weather Prediction	Air Vice Marshal (Dr) Sanjay Tyagi (Retd) , CoOT& Co-Founder, Kal.io Fed India Limited, New Delhi
Open Source and Cloud Platforms for Scalable EO Solutions	Shri Pravin Prashar , Regional Sales Head, Vassarlabs, Hyderabad
NER as a Frontier for Innovation in Space Tech	Dr Amitava Mukherjee , Assistant General Manager, NeoGeo, Kolkata
Innovative capabilities that connect Earth and space	Shri Pritish Bisoyi , Channel Head (India & South Asia), Maxar Intelligence
Solutions for Ground Control and Survey Accuracy Enhancement	Shri Srikanta Parua , AllTerra Solutions LLP, Kolkata
AI Assistant in ArcGIS: A New Era of Spatial Intelligence	Shri Dwaipayan Dighal , Sr. Vice President, ESRI India
Building Ecosystems in Geospatial and Drone Tech	MrDebajit Deka , Technical Director, Drone Tech Lab
Galaxeye World's first dual sensor satellite. Unlocking fusion of EO and SAR.	Dr. Deb Jyoti Pal , Sr. Vice President, GalaxEye Space
Harnessing High-Resolution Satellite Data and Geo-Intelligence: Smarter Opportunities for Monitoring, Mapping, and Management	Ms. Mitali Mondal , Skymap Global India Pvt Ltd, Rajasthan
High resolution hyperspectral imaging and cloud	Ms Lakshmi Baburajan , Geospatial Analyst,



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computing for EO applications	Pixxel, Karnataka
From Farm to Market: GI-Tagged Crops and Sustainable Agriculture Initiatives in the North East	Shri Partha Baruah , Vidhi Analytica LLP, Guwahati Assam
AI + IoT for Indigenous Knowledge Preservation	Shri HaobamJoyremba , Managing Director, CubeTen Technologies Pvt Ltd., Imphal, Manipur
Geo-Spatial Analytics and Data-Driven Solutions for Sustainable Agriculture and Environmental Management in the North East	Dr. Amit Kumar Rabha , Co-founder & Director, EarthGrid Analytics Private Limited, Guwahati, Assam
Session Coordinators	: Shri Anjan Debnath, Scientist/ Engineer-SF, NESAC : Shri Rosly Boy Lyngdoh, Scientist/ Engineer-SD, NESAC
Tea Break & Networking (15:30 – 16:00 Hrs)	
Concluding Session September 26, 2025 (Friday) Session Time: 16:00-17:00 Hrs (60 minutes) Way forward towards innovative space applications in NER Moderated by: Dr SP Aggarwal, Director, NESAC	



North Eastern Space Applications Centre

Department of Space, Government of India

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