### National Symposium on

# Innovations in Geospatial Technology for Sustainable Development with special emphasis on NER

and

Indian Society of Remote Sensing (ISRS)

November 20 - 22, 2019 Shillong, Meghalaya

Jointly organised by

Indian Society of Geomatics &
Indian Society of Remote Sensing

## **Hosted by**

Indian Society of Geomatics, Shillong Chapter (ISG-SC)
Indian Society of Remote Sensing, Shillong Chapter (ISRS-SC)
North Eastern Space Applications Centre(NESAC), Umiam
North Eastern Hill University (NEHU), Shillong

#### National Advisory Committee (NAC)

- Dr. K. Sivan, Chairman, ISRO and Secretary, DOS, Bengaluru (Chairman)
- Shri Ram Muivah, Secretary, North Eastern Council, Shillong
- Dr. M. Nair Rajeevan, Secretary, Ministry of Earth Sciences, New Delhi
- Shri Ajay P. Sawhney, Secretary, Department of Electronics & Information Technology, New Delhi
- Shri C.K. Mishra, Secretary, Ministry of Environment, Forest & Climate Change, New Delhi
- Prof. Ashutosh Sharma, Secretary, Department of Science & Technology, New Delhi
- Dr. Shobhana K. Pattanayak, Secretary, Dept. of Agriculture Coop. & Farmers Welfare, New Delhi
- Dr. TrilochanMohapatra, Secretary, Department of Agricultural Research & Education, New Delhi
- Shri Devendra Chaudhary, Secretary, Dept. of Animal Husbandry, Dairying and Fisheries, New Delhi
- Shri Jagdish Prasad Meena, Secretary, Ministry of Food Processing Industries, New Delhi
- Shri DurgaShanker Mishra, Secretary, Ministry of Housing & Urban Affairs, New Delhi
- Shri Upendra P. Singh, Secretary, Ministry of Water Res., River Dev.&GangaRej., New Delhi
- Shri Parameswaranlyer, Secretary, Ministry of Drinking Water & Sanitation, New Delhi
- Shri Gopal Krishna, Secretary, Ministry of Shipping, New Delhi
- Shri Anand Kumar, Secretary, Ministry of New and Renewable Energy, New Delhi
- Shri Ajay K. Bhalla, Secretary, Ministry of Power, New Delhi
- Shri Kapil Dev Tripathy, Secretary, Ministry of Petroleum & Natural Gas, New Delhi
- Shri Arun Kumar, Secretary, Ministry of Mines, New Delhi
- Shri Sushil Kumar, Secretary, Ministry of Coal, New Delhi
- Shri R.N. Choubey, Secretary, Ministry of Civil Aviation, New Delhi
- Smt. ArunaSundarajan, Secretary, Dept. of Telecom. & Chairman Telecom. Commission, New Delhi
- Shri Raghvendra Singh, Secretary, Ministry of Culture, New Delhi
- Dr.Inder Jit Singh, Secretary, Ministry of Development of North Eastern Region, New Delhi
- Shri Amarjeet Sinha, Secretary, Department of Rural Development, New Delhi
- Shri Dinesh Singh, Secretary, Department of Land Resources, New Delhi
- Lt. General Girish Kumar, VSM, Surveyor General of India, SOI, Dehradun
- Also add Shri Satya Pradhan, DG, NDRF
- Shri Parmarsan S. Thangkhiew, Chief Secretary, Meghalaya
- Shri Santanu Chowdhury, Director, NRSC, Hyderabad
- Shri S. Rakesh, Chairman-cum-Managing Director, Antrix Corporation, Bengaluru
- Shri Tapan Misra, President, ISG & ISRS, Ahmedabad (Convener)

#### Symposium Steering Committee (SSC)

- Shri Tapan Misra, President, ISG &ISRS
- Dr. Y.V.N. Kirshnamurthy, Registrar, IIST, Thiruvananthapuram
- Dr. Shailesh Nayak, Director, NIAS, Bengaluru
- Dr. V.K. Dadhwal, Director-IIST, Thiruvananthapuram
- Dr. P.G. Diwakar, Director-EDPO, ISRO, Bengaluru
- Shri D.K. Das, Director-SAC, Ahmedabad
- Shri Virender Kumar, Director-DECU, Ahmedabad
- Dr. Prakash Chauhan, Director-IIRS, Dehradun
- Dr. Anil Bhardwaj, Director-PRL, Ahmedabad
- Dr. Satheesh C. Shenoi, Director-INCOIS, Hyderabad
- Dr. S.S. Ray, Director-MNCFC, New Delhi
- Shri A. Arunachalam, Director-Antrix, Bengaluru
- Shri T.P. Singh, Director-BISAG, Gandhinagar
- Dr. Shantanu Bhatawdekar, Associate Director-EOS, ISRO, Bengaluru
- Shri N. Kutumba Rao, Director General, GSI, Kolkata
- Dr. Tapati Banerjee, Director, NATMO, Kolkata
- Dr. P.S. Acharya, CEO, NSDI, New Delhi
- Dr. Bhoop Singh, Head, NRDMS & NSDI, DST, New Delhi
- Shri Rajesh Mathur, CEO, ESRI India, New Delhi
- Dr. Anmol Kumar, Director, FSI, Dehradun
- Dr. Surendra Kumar Singh, Director, ICAR-NBSS&LUP, Nagpur
- Dr. Uday Raj, Chief General Manager, RRSC, NRSC, Hyderabad
- Dr.Reghunatha Menon K.P., Joint Secretary, ISG & Director, KSREC, Thiruvananthapuram
- Dr. H.K. Dutta, Director, SRSAC-AP, Itanagar
- Dr. A.K. Misra, Director, ASTEC, Guwahati
- Dr. N. Randhir Singh, Director, MARSAC, Imphal
- Dr. R.K. Lallianthanga, Director, MIRSAC, Aizawl
- Dr. ZaveiHiese, Director, NASTEC, Kohima
- Shri Nataraj Dutta, Officer-in-Charge, TSAC, Agartala
- Shri D.G. Shrestha, Addl. Director, SCS&T, Gangtok

- Dr. Raj Kumar, Vice-President, ISG & DD-EPSA, SAC, Ahmedabad
- Shri P.L.N. Raju Director NESAC, Shillong, (Convener)

#### Symposium Organizing Committee (SOC)

- Shri P.L.N. Raju, Chairman, ISG-Shillong Chapter, Shillong (Chairman)
- Prof. Sunil Kumar De, Vice Chairman, ISG-Shillong Chapter, Shillong (Alt. Chairman)
- Shri Shashikant A. Sharma, Secretary, ISG, Ahmedabad
- Dr. Sameer Saran, Secretary, ISRS, IIRS, Dehradun
- Prof. B.S. Mipun, Chairman, ISRS-Shillong Chapter
- Dr. K.K. Sarma, Secretary, ISRS-Shillong Chapter
- Prof. Devesh Walia, NEHU, Shillong.
- Prof. H.J. Symlieh, NEHU, Shillong
- Dr. P.K. Ryngnnga, NEHU, Shillong
- Prof. Porag Phukon, Guwahati University
- Dr. Manash J. Nath, Gauhati University
- Prof. Pradip K. Bora, CAU, Umiam
- Shri Jayaprasad, P., Treasurer ISG, SAC Ahmedabad
- Dr. M.A. Paul, DD, RESPOND, ISRO HQ, Bengaluru
- Ms. H. Suchitra Devi, NESAC, Umiam
- Shri Victor Saikhom, NESAC, Umiam
- Shri ChandanGoswami, NESAC, Umiam
- Dr. B.K. Handique, Secretary-ISG-SC, Shillong (Convener)

#### **Important Dates to Remember:**

Last Date for Abstract Submission August 31, 2019

Intimation of Acceptance of Abstracts September 15, 2019

Last Date for Tutorial Applications October 15, 2019

Intimation of Admission into Tutorials October 25, 2019

Registration for Commercial Presentations October 31, 2019

Registration for Industrial Exhibition October 31, 2019

Submission of Full Paper October 15, 2019

Last Date for Registration to the Symposium October 31, 2019

Last Date for Registration to the Tutorial October 31, 2019

Last Date for Guest House/Hostel booking October 31, 2019

Pre-Symposium Tutorials November 18-19, 2019

National Symposium November 20-22, 2019

#### **Background**

Over the years, geospatial technology has been making phenomenal impact on its usage in diverse fields related to natural resources management, sustainable development, disaster management, environmental applications and more recently in Good-governance and becoming an integral part of various key programmes of the Government of India. Developments in the space based communication, navigation & earth observation technology both at International as well national level have further accelerated its usage as well as increased thescope of its utilisation in almost all possible applications catering to the human needs, protection of the environment and in exploring the outer space. A large amount of Earth Observation data along with in-situ (spatial as well nonspatial data) is being generated, necessitating the need for advanced geospatial data processing tools and techniques to be developed. It is essential to develop tools and techniques for big data analytics (data cube, data mining) as the data volume is expected to increase further. Advances in Web GIS tools and techniques are also required for making timely dissemination of the value added products to various users and public at large.

North Eastern Region (NER) of India comprising the states of Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Tripura and Sikkim has an area of 2.62 lakh km²with a population of 4.5 million. Due to its

unique topographic, physiographic and diverse socio-economic characteristics, it has been a challenging region for developmental activities. Geospatial technology can provide critical inputs for accelerated growth of the region. The outcome of the seminar is expected to bring out recommendations/ resolutions that will help in expediting the developmental planning of the region.

The Symposium shall focus on recent advancements made in the satellite payloads, data processing techniques, Web GIS, Mobile App., geospatial technology and applications in various key areas defined under different key programmes of the Government of India.

The Indian Society of Geomatics (ISG) and the Indian Society of Remote Sensing (ISRS), the two premier professional societies dedicated to promotion and dissemination of GIS & RS in India, conduct annual conventions and joint national symposiums in tandem providing excellent opportunities to the scientists, teachers and students for presenting their research findings, updating their knowledge base and interacting with experts and peers. Continuing this rich tradition, a national symposium on "Innovations in Geospatial Technology for sustainable development with special emphasis on NER", is being organized by ISG and ISRS in the city of Shillong (Meghalaya) during November 20-22, 2019. This event is jointly hosted by North Eastern Space Applications Centre, Shillong, North Eastern Hill University, ISG-Shillong Chapterand ISRS-Shillong Chapter and an enthusiastic participation is expected.

#### **Major Themes**

The main theme for National Symposium is "Innovations in Geospatial Technology for sustainable development with special emphasis on NER" covering following sub themes:

- Innovations and advances in Imaging Technologies and their data processing (UAV, LiDAR, SAR, Hyperspectral)
- Advancement in sensor technologies, NavlCand GNSS
- Photogrammetry, 3-D Mapping, LiDAR, Virtual GIS
- ➤ Big data Analytics, Data Mining, Cloud and Internet of Things (IoT)
- Web & Location based Services (Tele-Geomatics, Mobile GIS)
- Spatial Data Infrastructure and Decision Support Systems
- Physical Infrastructure Dev. and Planning (Smart Cities)
- Sustainable Land Management and Infrastructure Dev.
- Agriculture/Horticulture/Water Resources Management
- Forestry, Environment & Ecosystem Management
- > Early signals of Climate Change and Mitigation Measures
- Disaster Management, Weather Forecasting
- Geospatial Technology for Renewable Energy Resources
- Geoscience Applications
- > Health GIS, Skill Development and Livelihood
- Large scale mapping and e-governance
- Location based services
- Innovations and advances in Geomatics/Geoinformatiocs
- UAV photogrammetry / remote sensing technology and applications

#### Venue

North Eastern Space Applications Centre Department of Space, Govt. of India Umiam, RiBhoi 793103, Meghalaya & North Eastern Hill University Shillong 793022 Meghalaya

#### Call for Paper & Abstract Submission

The original unpublished research papers, from India and abroad, covering one or more sub-themes are invited for presentation. Authors may submit abstracts within 750 – 900words in the prescribed format online (limiting to two pages) through the symposium website www.isgns2019.in. The last date for abstract submission is August 31, 2019. Abstract Volume and Proceedings of the Symposium shall be brought out in digital form.

#### Best Paper/Poster Awards

The best paper awards in student category as well as in general category will be given to the selected papers presented in Oral / Poster categories.

#### **Pre-Symposium Tutorials:**

There will be four pre-symposium tutorials during November 18-19, 2019for trainingyoung professionals and students on the following themes:

Theme 1: UAV Remote Sensing- Acquisition, processing and derivatives

Coordinator: Shri Victor Saikhom, NESAC, Umiam

**Theme 2:** SAR data Processing and Applications Coordinator: Shri C. Patnaik, SAC Ahmedabad

Theme 3: Geospatial data Analysis using AI and Machine Learning,

Coordinator: Dr. Dibyajyoti Chutia, NESAC, Umiam

Theme 4: Hyperspectral Remote Sensing

Coordinator: Dr (Ms) Jonali Goswam, NESAC, Umiam

Interested participants may submit their applications online at the NESAC website (www.nesac.gov.in) OR through email request at isgnsshillong2019@gmail.com on or before November 01, 2019. The admission in tutorials is based on merit and first-cum-first serve basis, as only 30 candidates can be taken into each tutorial. Hence, participants are advised for early registration. Details regarding the venue will be available on www.isgns2019.in). It is to be noted that operating language of the conference and tutorials shall be English.

Registration fee

	Early bird (Upto Oct 15, 2019)	After Oct.15, 2019
ISG/ISRS members	Rs. 4000	Rs. 4500
Non-members	Rs. 5000	Rs. 5500
Foreign participants	US \$150	US \$200
Students (Members)	Rs 1000	Rs 1500
Students (Non-Members)	Rs 1500	Rs 2000
Accompanying persons	Rs 1000	Rs 1500
Pre-symposium Tutorials	Rs 1000	Rs 1500

Participants interested to register for both, pre-symposium tutorial and symposium are entitled for Rs. 500/discount on the gross registration fees, if paid for both events together. Bonafide students making oral/poster presentation in the Symposium will be considered for free life membership of the ISG. Interested students may download the membership form (<a href="www.isgindia.org">www.isgindia.org</a>) and submit the duly filled form at registration desk with certified copy of their educational qualification certificate. Registration fees cover symposium kit (souvenir/ proceedings) and working lunches. Accommodation shall be arranged in Hotels and available Guest houses on payment basis. Follow website (<a href="www.isgns2019.in">www.isgns2019.in</a>) for more details.

#### Payment

All payments towards the registration fee / exhibition charges / company presentation shall be remitted through online bank transfer or demand draft in favour of ISG National Symposium 2019 payable at Umiam, along with the duly filled registration form. The registration fees may be remitted online through direct bank transfer to Current Account ISG National Symposium 2019 number: 38547155305 of State Bank of India, Umiam Branch , (IFSC: SBIN0002010). Please send a copy of the bank receipt by email to isgnsshillong2019@gmail.com along with full details of remitter to the Organizing Secretary. In absence of online remittance option, registration fees may also

be sent by Registered Post/ Speed Post (no courier) through bank draft drawn in favour of ISG National Symposium 2019 payable at Umiam/Shillong

#### Post-Symposium Tour (Cherrapunjee / Dawki / Mawlynnong):

A post-symposium one-day excursion tour is planned to beorganized if sufficient number of interested delegates register for the tour. Visit toother interesting places like Mawlynglong, Dawki, Krang Suri Water falls etc. may also be planned. Details will be made available onthe Symposium website.

About Shillong: Shillong is a beautiful hill station and capital of the state of Meghalaya, known as the Scotland of east because of its serene and picturesque landscape. It's is major tourists attraction in NERwith a variety of attractions for the visitors such as the manicured gardens at Lady Hydari Park, Walking trails of Ward's Lake, the Don Bosco Centre for Indigenous Cultures features displays on the region's native people, beautiful waterfalls include the Elephant Falls, forested Shillong Peak offering city views, History old golf course, Butterfly Museum etc. Cherrapunjee, the wettest place on the planet earth is just a two hours drive from the city, same is the distance for the Mawlynnong, the Asia's cleanest Village. Visit to Dawki for a boating in the crystal clear Umngot river or a leisure time at picturesque Krang Suri waterfall is memorable experience for the visitors.

Winter will just set in month of November in Shillong with temperature varying between 10°C to 25°C and relative humidity ranging from 40 to 90%, requiring warm clothes to carry.