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Government of India Ministry of Science and Technology Department of Science and Technology (CDN Section) ***

> Technology Bhawan, New Mehrauli Road New Delhi-110016 #Approved Date#

OFFICE MEMORANDUM

Subject: Monthly Summary to the Cabinet for the month of November, 2020.

The undersigned is directed to enclose herewith a copy of the Monthly Summary of important policy decisions taken and major achievements of the Department of Science & Technology for the month ending 30.11.2020 for information.

2. This has already been approved by Secretary, DST.

(Pulok Sen Gupta) Under Secretary to the Govt. of India

To,

All Members of the Council of Ministers (as per Annexure-I)

Copy with enclosures, forwarded to:-

i. Vice Chairman, NITI Aayog, NITI Bhawan, New Delhi. (vch-niti@gov.in)

ii. The Chairman, Union Public Service Commission (chairman-upsc@gov.in)

iii. Chief Executive Officer, NITIAayog, NITI Bhawan, New Delhi (ceo-niti@gov.in)

iv. The Principal Secretary to the Prime Minister, Prime Minister Office, South Block, ND (pkmishra.pmo@gov.in)

v. All members of NITI Aayog, NITI Bhawan, New Delhi. (vk.saraswat@nic.in, rc. niti@gov.in,vinodk.paul@gov.in)

vi. Secretary to the President of India. (secy.president@rb.nic.in)

vii. Secretary to the Vice-President of India. (secyvp@nic.in)

viii. Principal Scientific Advisor to the Govt. of India. (vijayraghavan@gov.in)

ix. All Secretaries to the Government of India (secy-goi@lsmgr.nic.in)

x. The Principal Director General, Press Information Bureau, Ministry of Information and Broadcasting. (pdg- pib@nic.in)

xi. The Director, Cabinet Secretariat, New Delhi. (cabinet@nic.in)

xii. Shri Sanjay Kumar Mishra, Sc. 'G', DST for uploading the Monthly Summary on DST's website. (sanjaykr.mishra@nic.in)

xiii. Sr. PPS to Secretary, DST. (anuj.tripathi@nic.in)

Signature iNot Verified T for Hindi Translation (kn.singh65@gov.in)

Digitally signed by Pu lok Sengupta 4:48:53 IST Date: 2020.12.10

<u>Department of Science & Technology</u> <u>Monthly Report</u> <u>November, 2020</u>

I. Important policy decisions taken and major achievements during the month:

A. <u>Science for Society</u>

- 1. Indian Institute of Astrophysics is contributing actively to Vigyan Samachar, to convey scientific activities to the general public in a simple manner.
- 2. As a part of the curtain raiser ceremony of India International Science Festival (IISF) 2020, Aryabhatta Research Institute of Observational Sciences (ARIES), Nainital organised a half day workshop under the theme "Self-Reliant India and Global Welfare" and two webinars were also organized by Agharkar Research Institute (ARI), Pune.
- 3. Vigyan Prasar (VP) published two fortnightly newsletters, titled as "S&T Efforts in India on COVID-19". VP also created Ganga Gallery in association with Namami Gange at India Science OTT platform.
- 4. Validation of innovative agricultural plant varieties conducted by National Innovation Foundation revealed that farmer's onion variety Kansi No. 1 exhibits significantly higher bulb yield, low bolting as well as high shelf life and a better bulb weight comparable with reference varieties.
- 5. A field demonstration of two technologies (lac extractor and chironji decorticator) was conducted by NIF in the tribal areas of Chhota Udaipur, Gujarat for the feedback of potential users.
- 6. NIF entered into MoU with North Eastern Region Community Resource Management Society (NERCRMS) under North East Council (NEC), Ministry of DoNER for the dissemination of grassroots innovations in the region.
- 7. IPR division of Technology Information, Forecasting & Assessment Council has organized virtual session on "Race Against Coronavirus" in association with European Patent office and European Business Technology Centre.
- 8. COVID-19 awareness camp, was jointly organized by the National Academy of Sciences, India (Jharkhand Chapter), SEEDS & CSIR-NML, at a tribal village of West Singhbhum district. Volunteers explained the importance of sanitization, hygiene and face mask to the natives of the village.
- 9. A webinar under the NASI's Science and Society Programmes on Poshan Awareness was jointly organised by NASI-Delhi Chapter and Inter University

Accelerator Centre, New Delhi, on a broad topic on 'Ionising Radiation: Transforming Agriculture, Food and Supply Chains'.

- 10. North East Centre for Technology Application and Reach implemented a pilot project on saffron crop germination, its significant growth and adequate flowerings for production of saffron in Sikkim.
- 11. In commemoration of the 150th Birth Anniversary of Mahatma Gandhi, Department of Science & Technology developed a 360^o video-immersive experience in a circular dome at Gandhi Darshan, Rajghat, in association with Ministry of Culture. An 8 metre Dome has been installed at Gandhi Darshan, Rajghat having capabilities of 3D immersive experience of Gandhi's life events.

The 360° dome project has been implemented by Indian Institute of Technology (IIT), Delhi and the digital and virtual display project at 17 locations has been implemented by Vigyan Prasar, an autonomous institution under Department of Science & Technology.

Dr. Harsh Vardhan, Union Minister for Science & Technology and Shri Prahlad Singh Patel, Minister of State for Culture (Independent Charge) inaugurated the 360o video-immersive experience in circular dome and Digital Exhibits on Mahatma Gandhi installed at Gandhi Darshan, Rajghat, on Friday, the 6th of November 2020 at 10:00 a.m.

- 12. ICAR-National Dairy Research Institute (NDRI) carried a programme on Dairy Education at Farmers Door in Subri village of Karnal district in Haryana. Twenty farmers participated in the activity. Farmers were advised to practice the concept of Atmanirbhar Bharat (Self-reliance) emphasizing the vocal for local by preparing indigenous milk products having good market potential and selling it in their own and neighboring villages.
- 13. "Science & Society Setu for Aatmanirbhar Bharat (S³4ANB)", multi stakeholders (KOs, NGOs and Society) deliberations was held on the focal themes "MSME & Economic Sector", and "Social Infrastructure Sector". Discussions under MSME & Economic Sector were focused on creating knowledge-practice interface between S&T capable society and scientific community to strengthen human and institutional capacity for technology scaling and delivery at large scale and for fostering public-private linkages for creating social entrepreneurship and Rural start-ups/Village Incubation centers directed towards indigenous and sustainable technologies. These web-clinics under Social Infrastructure Sector tried to identify problems requiring Science, Technology & Innovation (STI) led solutions and to harness STI for strengthening need-based infrastructure (viz, health, skill, education, housing etc.) for equitable and inclusive society.

- 14. A virtual meeting with senior management of Value Chain Capacity Building Network (VCB-N) a Network promoted by International Fund for Agriculture Development, Helvetas (Switzerland), Institute of Livelihood Research and Training (ILRT) and FICCI was held on 25th November 2020 to discuss about initiative of VCB-N to launch ASIA-AGRI TECH CHALLENGE 2020 for possible collaborations/support for next level of interventions. This initiative could trigger innovation, using ICT along the value chains and provide successful innovations in their prototyping/testing phase to improve the chain functioning and making it more resilient and future-proof.
- 15. The 27th Perfect Health Mela (PHM) was organized by The Heart Care Foundation of India (HCFI) from November 1 to to 8, 2020 in which NCSTC took part and showcased its numerous activities.
- 16. Science Fairs were organized in Bahraich, an Aspirational District during last week of November, 2020.

B. <u>National Technology Mission</u>

- The Detailed Project Reports (DPRs) received from the TIHs selected during II phase of selection is shared with Scientific Advisory Committee (SAC) of National Mission on Interdisciplinary Cyber Physical Systems (NM-ICPS), for their broad comments and perusal.
- 2. The Detailed Project Report (DPR) on National Mission on Quantum Technology & Application (NM-QTA) has been approved by the Competent Authority and draft of EFC has prepared and circulated.

C. <u>Technology Development</u>

- 1. Three orientations have been worked out for fitting the spectrograph in to the instrumentation deck of Thirty Meter Telescope. Blue and Red spectrographs are designed and their performance was studied by Indian Institute of Astrophysics and found to meet all the science drivers. The design has been reviewed by TMT. The efficiency of the spectrograph has been studied and is optimized for its maximum value.
- 2. A versatile device known as the Micro-Extensional Rheometer that could be used for extensional deformation studies of soft and living matter at microscopic scales with simultaneous imaging was developed at Raman Research Institute. This device will be useful for performing a wide variety of rheological measurements on soft and living matter.

- 3. The National Innovation Foundation facilitated granting 4 patents to grass root innovators on herbal formulation for treatment of hair fall; an oral herbal extract composition for use in treating cerebral malaria; a Device For Preparing Iron Mesh; herbal composition for promoting or enhancing seed germination, growth and disease resistance.
- 4. International Advanced Research Centre For Powder Metallurgy and New Materials has indigenously developed a lab-scale High Power Impulse Magnetron Sputtering (HiPIMS) equipment for deposition of metallic, oxide and nitride coatings. It has possible applications in biomedical, optical and electronic fields. ARCI also developed a custom made shaping machine for automatic profile generation of ceramic honeycomb structures. These honeycomb structures will be used as inserts in anti-mine boots.



Custom made shaping machine for automatic profile generation of ceramic honeycomb structures

 Two Products related to Covid-19: Bosetizer (a long-lasting sanitizer) and Bose-Shield (a mask with active respirator) have been commercially launched by S N Bose National Centre for Basic Sciences through National Research Development Corporation.



(Bose Shield)



(Bosetizer)

6. Project Review and Monitoring Committee (PRMC) meeting held to review the project entitled "Advanced Ultra Supercritical Test Rig – Investigation of the long term operation behaviour (Fire Side Corrosion) of tubes made of Super 304H and Ni-based Super Alloy (Alloy 617) for future high efficient Power Plants" and "Development of High Temperature Spin Test Rig and Accelerated Testing of Advanced Ultra Super Critical (AUSC) Steam Turbine Rotor Segments under Transient and Steady State Thermo-Mechanical conditions".

- Review of project on Mission Innovation Affordable Heating and Cooling of Buildings Innovation Challenge - Resource Unit for Scientific & Technical Analysis, Management and Coordination.
- 8. An Expert Committee meeting held to consider 3 new proposals received by Central Pollution Control Board (CPCB) and review of 3 completed projects supported by CPCB.
- A virtual face to face project review meeting was on Materials for Energy Storage (MES-2k18) to review the progress & achievement of ongoing projects under MES 2018 holding by CIPET Bhubaneswar from 16th – 20th November 2020.
- A virtual face to face project review meeting was on Hydrogen and Fuel Cell (HFC 2018) to review the progress & achievement of ongoing projects under HFC 2018 holding by PSG Institute of Technology, Coimbatore from 23rd 27th November 2020.
- 11. The various projects under Remedial Action, Knowledge Skimming and Holistic Analysis of COVID-19 (RAKSHAK) to develop a technology platform based on Artificial Intelligence (AI) to mitigate the pandemic COVID-19 situation, are under implementation.
- R&D support was provided for the "Development of Landslide Early Warning System and Real Time Monitoring, Uttarakhand" to Department of Civil Engineering, Indian Institute of Technology Indore, Madhya Pradesh
- R&D support was provided to Centre for Advanced Study in Geology, Panjab University, Chandigarh, for "development of Landslide Forewarning System for Manikaran, Himachal Pradesh"
- 14. R&D activities for "Assessment of Portable Ground Water Quality of India Mark II Hand Pump viz-a-viz Delineation of Ground Water Pollution zones in Districts of Mainpuri, Kanpur Dehat, Gorakhpur, Uttar Pradesh using GPS & GIS Technology" were provided to Remote Sensing Applications Centre, Jankipuram, Lucknow.
- 15. R&D support was provided to Department of Electronics and communication Engineering, Muthoot Institute of Technology and Science, Ernakulam Kerala, for carrying out "Sime-Spatial Data Infrastructure for Indoor Navigation in Multistorey Edifices".

16. R&D support was provided to Centre for Water Resources Development and Management (CWRDM), Kozhikode, Kerala for carrying out "Coastal Erosion and Risk Assessment along Kerala State Geo-Spatial Technologies".

E. International Cooperation

 SCO Young Scientists Conclave: The first-ever Shanghai Cooperation Organisation (SCO) Young Scientist Conclave was successfully hosted virtually by India during 24- 28 November, 2020. The Conclave was inaugurated by Dr. Harsh Vardhan, Union Minister for Health & Family Welfare; Science & Technology; and Earth Science.

Twenty-two young scientists were given a certificate of appreciation for their innovative research work and innovation ideas on which they would like to work in collaboration with SCO countries.

- India-Finland Joint Committee Meeting on Science & Technology: The 2. Fourth meeting of the India-Finland Joint S&T Committee was held on 17th November 2020 through a virtual platform. The meeting was Co-chaired by the Secretary, Department of Science & Technology, Govt. of India, and Under-Secretary of State, Ministry of Economic Affairs and Employment of Finland. The meeting was also attended by the two Ambassadors, besides representatives of Scientific Departments / Agencies on the two sides. The Joint Committee reviewed overall bilateral cooperation in Science, Technology, and Innovation between the two countries and agreed to initiate cooperation in new emerging areas like 5 G; Quantum Computing and Sustainability by involving, Academia, Industries and Start-ups of the two countries. It was agreed that both sides will support collaboration through linking Indian and Finnish institutes in these focused to develop а comprehensive strategic areas program on technology/product development.
- 3. India Japan Joint Committee Meeting on Science & Technology: The 10th India Japan Joint Committee Meeting on Science & Technology was held on 10th November 2020 on a virtual platform. It was co-chaired by Head, International Cooperation, Department of Science & Technology and Ambassador, Ministry of Foreign Affairs (MOFA), Japan. The ongoing projects were reported & reviewed and new initiatives were proposed during the meeting. Ongoing programmes included Indo-Japan collaboration on mobility projects, workshops, fellowship, Joint lab projects, youth exchange programme, DST-KEK Beamline Cooperation, Marine & Earth Science, and Polar research. New activities and cooperation programmes were proposed in the areas of Science, Technology, and Innovation (STI) for Sustainable Development Goals (SDGs), Neutrino Physics &

Astrophysics, Quantum Technology, Nano Technology, Hydrogen economy, India-Japan Centre for Excellence, Women in STEM and Research Initiative on Elderly. Officers from DST, MoES, PSA office, ICMR, MEA participated from the Indian side and Japanese Officers from MOFA, JSPS, JST, JAMSTEC, Cabinet Office, METI, MEXT, AMED, NIPR, ICRR took part in the meeting.

- 4. Global R&D Summit: The Global R & D Summit is an annual event organized by FICCI with DST. This year's virtual Global R & D summit 2020 is organized during November 25-28, 2020 with a theme "Building Resilient Economies through Technology and Innovation: Development Partnerships in the New World Order". The Summit brought together more than 80 technology experts from around the globe to deliberate on it. FICCI has launched the "Science meets Industry" series during this summit which will bring forth innovations that can be commercialized and scaled to achieve a larger socio-economic impact.
- 5. **Result Announcement for India-Israel Joint Call for Proposals:** An Indo-Israeli Joint call for Proposals was issued by the Department of Science and Technology (DST), Ministry of Science & Technology, Government of India and Ministry of Science and Technology, Israel under the Indian-Israeli Joint Research Cooperation Programme (IIJRC)-2020-2022 for inviting joint research projects carried out by Indian and Israeli researchers on the mutually agreed areas of (i) Advanced materials for next-gen solar energy utilization and storage (ii) Quantum devices for sensing imaging and communication. A total of 8 out of 54 common proposals received against the call were recommended for support jointly after a judicious assessment based on scientific strength, technical aspects, project objectives, and national priorities of both the countries. The duration of the project will be 2 years.
- 6. Foundation Day of Global Innovation & Technology Alliance (GITA): 9th Foundation Day of Global Innovation & Technology Alliance (GITA) was held on 26th November 2020. The theme of this year's celebration was "Atmanirbhar Bharat". Over 500 participants from India and abroad attended the event which was organised on a virtual platform. Country sessions were organised with Israel, Sweden, Canada, and the Republic of Korea. Following three successful completed bilateral projects were felicitated on the Foundation Day: (a) Design and Development of Advanced Power Electronics and Related Technologies for Integration of Solar Power Plants with Power Utility Grids (India-Korea Programme), (b) Development of Pearl Millet Hybrid Seeds and Novel Food Products: An affordable Resource in the Prevention of Type 2 Diabetes (India-UL Programme) (c) Design & Manufacturing of Artificial Intelligence-based Electronic Metering & Monitoring System for Indian Power Distribution Sector (India-Canada Programme).

- 7. **EU Water Projects:** A mid-term review of four India-EU water projects was done on 9 November 2020 to assess the progress made. The review was done by Experts nominated by India and the European Union. These projects are targeting the design, development, and deployment of wastewater treatment technologies suitable to Indian conditions. One of the projects also working on the development of a sensor for real-time water quality monitoring in the pipe distribution system and tanker water supply. The overall scientific progress, especially concerning the design of the treatment system, is satisfactory. The construction of the pilot plant gets delayed due to COVID-19 but likely to be completed in the next three months.
- 8. Portal for Indian Diaspora named Pravasi Bharatiya Academic and Scientific Sampark "PRABHASS: After the successful completion of the VAIBHAV summit, on 31 Oct 2020, а new portal for Indian Diaspora namely **P**ravasi **B**haratiya **A**cademic and **S**cientific **S**ampark "PRABHASS" was launched. The DST was an active member of the steering committee of Vaibhav Summit and now, is an active member of the working group of PRABHASS. The 2nd working group meeting of "PRABHASS" was held on 27 Nov 2020 for discussing the use of the PRABHASS platform to bring India based and foreignbased S&T experts together.
- 9. Division gave presentation on Quantum Technology under proposed New Activities and Programmes during the 10th Japan-India Joint Committee on Science and Technology Cooperation held on 10th November 2020. The agenda topics were overview of recent science, technology and innovation policies, Review & report of ongoing cooperation and proposed new activities and programmes.
- Participated in India-Finland Joint Science and Technology Committee Meeting held on 17th November 2020, the division presented a talk on India-Finland corporate – academia collaboration and future visions.
- 11. United Nations Global Geospatial Information Management for Asia and the Pacific (UN-GGIM-AP) aim to identify regional issues relevant to geospatial information management and take necessary actions for the furtherance of the discussions in UNGGIM. UN-GGIM-AP forum provides an opportunity to exchange the views and knowledge on latest trends in Geospatial Information management and facilitate to understand the United Nations policies, related to Global geospatial Information management including fundamental data requirements, data quality, maintenance and standards, to make India's international participation in sharing data, expertise and technology in geospatial and geomatics areas more meaningful and effective.

12. The Divisional officers participated in the Ninth Plenary Meeting of UN-GGIM-AP held virtually on 3 & 5th November 2020. The main aim of the meeting was to discuss not only the reports of all working groups; WG1-Geodetic Reference Frame, WG 2-Cadastre and Land Management, WG 3-Integrating Geospatial Information and Statistics Geospatial Information but also reports from UN-GGIM Private Sector, and UN-GGIM Academic Network.

F. Human Capacity Building

- 1. **Vigyan Jyoti:** During November, webinars have been conducted on 'The Science behind Firecrackers', 'Life, Work and Legacy of Srinivasa Ramanujan', 'Learn about covid, learn from covid' and 'Wet land in ventilator-some reflections'.
- 2. **Special Online Classes:** In this month 89 online classes for Class XII students and 22 classes for Class XI students have been conducted to give them more clarity of concepts and skills to face the competitive examinations. One test was also conducted to check the progress of students.
- 3. Support has been provided under capacity building programme for developing tools and techniques for integrated resource management and capacity building at various levels to National Institute of Technical Teachers Training & Research, Taramani, Chennai.
- 4. Support has been also provided to IIC Academy, Rushikonda, Madhuravada, IT park SEZ Layout, Vizag for conducting the 3-days- Training Programme on "Geospatial Technologies".
- 5. Upon the launch of Science & Engineering Research Board-Promoting Opportunities for Women in Exploratory Research (SERB-POWER), the SERB has made open the call for applications from Women Scientists, for the two components (SERB-POWER Fellowship & SERB-POWER Research Grant) of the Scheme till 31st December 2020.

6. Scholarship For Higher Education (SHE):

- 1613SHE scholars received their scholarship/mentorship for pursing B.Sc./M.Sc. Degree course in basic and natural sciences.
- Result of 428 abeyance SHE applications were declared and provisional offer letters were issued on the respective web-portal accounts of the applicants.

7. INSPIRE Fellowship:

• 157 INSPIRE Fellows received their fellowship for pursuing their doctoral degree programme.

- Subject Expert Committee meetings of Agriculture & Veterinary Sciences and Bioscience & Biotechnology were organized for Level-2 evaluation of INSPIRE Fellowship applications through VC.
- Expert Committee meeting for selection of INSPIRE SRF's of 2017 batch for short term Research Internship under Newton Bhabha PhD programme-2020 was organized through VC.
- INSPIRE Fellowship-2019 Level-2 evaluation Result of 539 applicants was declared and hosted on the DST INSPIRE website.
- Final Offer letter of INSPIRE Fellowship-2019 was issued to 216 selected INSPIRE Fellowship candidates.
- 8. Diaspora meeting chaired by Dr Harsh Vardhan, Hon'ble Minister S&T was conducted on 7th November 2020 at a virtual platform as a part of process of formulation of Science, Technology and Innovation Policy (STIP) 2020.
- 9. An apex level meeting chaired by Prof K. Vijay Raghavan and co-chaired by Dr VK Saraswat, member, Science and Prof Ashutosh Sharma, Secretary, DST was conducted on 26th November 2020 at a virtual platform as a part of process of formulation of Science, Technology and Innovation Policy (STIP) 2020.
- 10. A STI fellowship is being supported currently to 18 fellows under the Policy Research Programme to build a critical mass of policy researchers in the country.

G. Scientific Infrastructure Building

- 1. Jawaharlal Nehru Centre for Advanced Scientific Research in collaboration with Indian Institute of Sciences demystified transformation of glass to crystal, which can help to dispose liquid nuclear waste safely.
- 2. Analysis of data from an accreting binary X-ray pulsar by astronomers at Raman Research Institute (RRI) and collaborator from Massachusetts Institute of Technology (MIT), USA has led to measurements of the cyclotron line energy. It was found that, this particular source displayed no dependence of the cyclotron scattering resonance feature on the luminosity, a behavior that is at odds with several other sources that show considerable variation in the same luminosity range.
- 3. The effect of stochastic resetting on a run and tumble particle was investigated by theorists at RRI leading to a better understanding of the behaviour of run and tumble particles in two dimensions under resetting.

- 4. An online interaction between early career scientists under the banner Association of Quaternary Researchers (AOQR) and International Quaternary Association (INQUA) was organized by Birbal Sahni Institute of Palaeosciences (BSIP).
- 5. The 2020 outburst of the unusual recurrent nova M31N-200812a that has a recurrence period of 1 year was monitored in the optical (using HCT and GIT), the X-ray (using AstroSat-SXT) and UV (using AstroSat-UVIT), by Indian Institute of Astrophysics (IIA).
- 6. The scientists of IIA also studied the flux and spectral variability of the TeV BL Lac object PG 1553+113, one of the primary candidates for a binary supermassive black hole system.
- 7. Due to plasma instabilities, electron-positron plasma particles get arranged into a phased array like an antenna. By considering viewing geometry, a coherent curvature model to estimate the collective emission from a beaming region centered on the line-of-sight was developed by IIA.
- Solar water splitting using an efficient nano-heterojunction photoelectrode by integrating earth abundant ferrites MFe2O4(M = Co and Ni) nano-particles on ZnO demonstrated by S. N. Bose National Centre for Basic Sciences (SNBNCBS).
- 9. Terephthalic acid-based supramolecular metallo-gel of Cu(II) (i.e, Cu-TA) has been developed by SNBNCBS.
- 10. Nano-engineered Conductive Polyaniline Enabled Sensors for Sensitive Humidity Detection demonstrated by SNBNCBS.
- 11. An Indian patent titled Method for Preventing Stalk and Ear Rot Disease of Maize was granted to Institute of Advanced Study in Science and Technology.
- 12. It was shown by Bose Institute (BI) that a synergistic consortium of beneficial microorganisms in the rice rhizosphere promotes host defense to blight-causing Xanthomonas oryzae pv. Oryzae.
- 13. It was shown by BI that the anthropogenic activities over Nepal and forest fire over North-East India were the major long-distant sources of the carbonaceous aerosols (CA) over Darjeeling during the normal period. On the other hand, during lockdown, the major source regions of CA over Darjeeling were regional/local. The findings of the study indicate the immense importance of Himalayan biosphere as a major source of organic carbon.
- 14. City of Varanasi surveyed during each day of the month using Drones for developing ISO/ OGC standards-based techniques for maintenance of high resolution (1:2,000 scale) data life cycles on a cloud-based NSDI-SOI Geo-

Platform for utilization in the National Urban Information Systems (NUIS) with the help of the State Police Officials

15. Training on NSDI and State SDI concepts- A group of 20 participants from the sector of Telecommunications of 11 Nations from the Asia-Pacific Region have been exposed to the Indian experiences of implementing SDIs and their relevance to disaster management in a virtual training session organized on 05 November 2020 by the National Telecommunications Institute for Policy Research, Innovation and Training (NTIPRIT), Ghaziabad of the Dept. of Telecommunication, Government of India.