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Government of India
Department of Space
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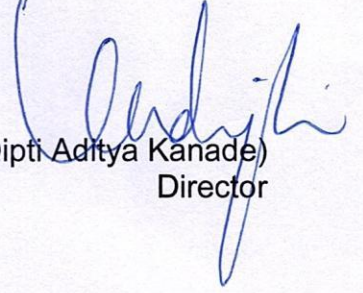
December 8th, 2022

OFFICE MEMORANDUM

Subject: Monthly Summary of the Department of Space for the month of November, 2022– reg.

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The undersigned is directed to circulate herewith a copy of the monthly summary of the Department of Space for the month of November, 2022 for information.


(Dipti Aditya Kanade)
Director

Encl: As above

To:
All Members of Council of Ministers

Copy to : Shri. Bhaskar Dasgupta, Joint Secretary, Cabinet Secretariat

**GOVERNMENT OF INDIA
DEPARTMENT OF SPACE**

Sub: Monthly Summary of Department of space for the month November 2022

PART- I (Unclassified)

1. Important policy decisions taken and major achievements during the month

A. Satellite & Launch Vehicle Missions:

- PSLV-C54 was successfully launched on November 26, 2022, wherein EOS-06 and 8 co-passengers were injected into the specified orbits.
- Cryogenic Engine (CE20) has successfully undergone hot test for 70s (short duration hot test) with uprated thrust level of 21.8T on November 09, 2022.
- Solid motors for GSLV-F12, SSLV-D2 and PSLV-C58 are ready.
- The 200th consecutively successful launch of RH-200 sounding rocket was conducted on November 23, 2022.
- Supported the launch of Vikram-S (Sub-orbital mission) that was undertaken by Indian private company - M/s Skyroot Aerospace Pvt Ltd.

B. Space Applications:

I. Earth Observation

- **NESAC's North Eastern Spatial Data Repository (NeSDR)** project has been awarded Silver, in Category V- Excellence in Adopting Emerging Technologies, under National Award for e-Governance, 2022.
- **Agriculture Technology Project (for Govt. of Maharashtra):** Standard Operating Procedure is finalized on technology-based yield estimation for soybean, cotton and paddy crop yield and submitted to Department of Agriculture, Govt. of Maharashtra.
- **National Hydrology Project (NHP, for M/o Jal Shakti):** (i) Daily actual evapotranspiration (AET), snow cover, and simulated water balance components have been generated, web published and shared with NHP-NPMU, MoJS.
- **GeoMGNREGA (for MoRD):** Action Plan for Monitoring & Impact Assessment of Geo-MGNREGA has been prepared and shared with the DoRD for deliberation.
- **Disaster Management Support Programme (for MHA, NDMA, SDMA):**
 - **National Database on Emergency Management (NDEM):** Latest Dashboard services (Near Real-time Flood Services, Flood Hazard Maps, Spatial Flood Early Warning, Landslide Early warning) are integrated into NDEM Lite mobile application
 - **Near Real Time Flood Mapping & Monitoring:**

- ❖ Floods in Uttar Pradesh were monitored using satellite data and 2 flood maps were provided to the State DM authority.

➤ **Support to Sentinel Asia:** Provided three IRS datasets to emergency requests from Sentinel Asia pertaining to floods and landslides in Philippines and Thailand

- **Satellite Data Acquisition and Dissemination:** 2,540 satellite passes were acquired and archived. About 26,000 satellite data products were downloaded through Bhuvan

II. Satellite Communication

- Department of Space has 15 indigenously built bent-pipe communication satellites providing 316.5 transponders (95.4 C-band, 50 Extended-C band, 153.1 Ku-band and 18 S & UHF-band) and three indigenously built High Throughput Satellites (HTS) with combined capacity of 11568 MHz (25 Gbps).
- Department of Space has transferred 10 in-orbit satellites (GSAT-8, 10, 12R, 14, 15, 16, 17, 18, 30 & 31) with 242.5 operational transponders in C, Ext C and Ku bands to NSIL. NSIL is responsible for commercial utilization of 266.5 transponders capacity from 11 satellites, which includes these 10 satellites and the newly launched GSAT-24 satellite.

III. Satellite Navigation

- Interface control document (draft version) of L1 civilian signal of NavIC published on ISRO website.
- Supported NavIC hackathon at Sahyadri College of Engineering and Management, Mangaluru
- Carried out discussions with EU/ESA and Galileo teams on atmospheric correction algorithms for GNSS

C. Human Spaceflight:

Major updates pertaining to **Gaganyaan** Program:

- Integrated Main Parachute Airdrop Test (IMAT) successfully completed as part of Qualification programme for Deceleration system.
- Static test of High altitude Escape Motor (HEM) successfully completed for batch qualification.
- The first Crew Module hardware for Test Vehicle mission handed over by Industry to ISRO.
- Inspection of Flight suit, Crew seat and View port from Glavkosmos completed with participation of Russian experts.
- Phase 1 of Crew Module propulsion test completed through CM-System Demonstration Module (SDM).

D. Capacity Building:

I. Outreach:

- **Akash for Life National Conference:** National conference & exhibition on “Akash for life” was organized at Dehradun jointly by six S&T ministries / Departments, including DOS, during 4th – 7th November, 2022.
- **“Antriksh Jigyasa” STEM Portal:** A knowledge portal for active learning and exploring STEM, this virtual platform offers self-paced online courses on space science & applications, students to upload their creatives & innovative ideas, participate in the space quiz, etc.,
- **ISRO Technical Training Programme (ITTP):** During the month three training programmes were organized at NSTI institute located in Chennai, Mumbai & Bangalore and 52 ISRO technical staff were trained.

II. Training

1.	“SAR Data Processing for Land Deformation Studies” (14 - 25 Nov, 2022)	19 participants
2.	“RS & GIS in predictive soil mapping” (14-25 Nov, 2022)	19 participants
3.	“Overview of Geocomputation and Geo-web services” (Oct 31 – Nov 11, 2022)	8910 participants from 785 institutions
4	“UAV Remote Sensing” on Nov 11, 2022	1970 participants from 300 institutions
5	“RS & GIS Applications in Natural Resource Mgmt” (Nov 14-25, 2022)	3405 participants from 441 institutions

E. Industry Interface

- Vikram Sarabhai Space Centre (VSSC) facilitated the hot testing of a rocket engine – Agnilet - developed by an Indian space start-up - M/s Agnikul Cosmos Pvt. Ltd. on November 4, 2022 at its Vertical Test Facility, Thumba Equatorial Rocket Launching Station (TERLS), Thiruvananthapuram
- Agnikul Cosmos, a space technology startup based in Chennai, received its first flight termination system (FTS) on 7 November 2022, from ISRO, with the support of IN-SPACE.
- A private launchpad and mission control center is established within the ISRO campus at Satish Dhawan Space Center (SDSC), SHAR, Sriharikota, for the first time. The launchpad is designed and operated by a private company, an Indian space-tech start-up, Agnikul.

F. International Cooperation:

- MoU between PRL and National University of Singapore for collaboration in quantum science & technologies and allied applications was signed on November 14, 2022
- India-Bhutan SAT (INS-2B) jointly realized by ISRO and DITT (Bhutan) Engineers was launched as co-passenger in PSLV-C54/EOS-6 mission. Bhutan Minister of Information and Communication visited SDSC-SHAR to witness this launch. MEA has also brought 20 journalists/Editors from Bhutan to SDSC-SHAR to witness the launch.
- Mauritius Research and Innovation Council (MRIC) has offered its ground station to track INS-2B satellite.
- Director General of Swedish Physic Research Institute (IRF) visited ISRO HQ, VSSC and IIST during November 07-10, 2022 to discuss potential areas of collaboration in atmospheric studies, small satellite experiment.
- ISRO officials have participated in: (i) 28th session of Asia Pacific Regional Space Agency Forum (APRSAF) at Hanoi, Vietnam during November 14-18, 2022; (ii) BRICS Remote Sensing Application Forum organized by CNSA, China on Nov 08, 2022; and (iii) Intersession meeting of the Working Group on Long Term Sustainability of Outer Space activities (LTS-WG) held at Vienna, Austria during November 15-17, 2022.

G. IN-SPACE Activities

- **Mission PRARAMBH:** India's maiden launch of a rocket built by private company from an ISRO Launch pad was authorized by IN-SPACE. The Vikram-S rocket, built by M/s Skyroot Aerospace Pvt Ltd, was launched on a suborbital flight successfully from the SHAR Sounding Rocket Complex on November 18, 2022. Mission was accomplished meeting the slated objectives of achieving desired range & altitude and validating payload performance. State's liability was addressed through third part insurance obtained from M/s. Skyroot Aerospace.
- **Thybolt Cubsesat (2Nos)** 0.5 U for HAM radio application i.e. Store and Forward was successfully launched on Nov 26, 2022 onboard PSLV-C54 and deployed using Dhurva Space Deployer. The ITU filing for Thybolt 1 & 2 Satellites from M/s. DhruvaSpace Pvt Ltd was completed by WPC & IARU and the approval of IN-SPACE Board was obtained prior issuing the authorization by IN-SPACE.
- **CANSAT competition:** Preliminary Design Review of 53 teams completed and selection of launcher is in progress. MOU signed with Govt. of Gujarat for logistics and launch site support.

H. NSIL Activities

- The GSAT-24 Communication Satellite – launched on 23 June 2022 - is presently positioned at 83°E and the in-orbit testing is in progress.
- Launched Seven Customer Satellites – Thybolt-1 and Thybolt-2 of Dhruva Space, Anand Satellite of Pixxel Inc., USA and 4 Satellites of Astrocast, USA under commercial arrangement – on-board PSLV C-54 as co-passenger satellites on 26 Nov 2022.
- Submitted Two Techno-commercial Proposal to Indian Customers for building and launching Communication Satellites.
- Coordinating with URSC towards realisation of IMS-2 Satellite Bus for Indian Customer.
- Leased out C-Band capacity on GSAT-10 satellite on occasional uses basis to Private Indian Teleport Operator for broadcasting Domestic Cricket (Sr. Women's T20 Trophy) & Spiritual Event "Message of Peace", events as part of their DSNG services.
- Post transfer of 10 Communication Satellites, viz. GSAT-8, GSAT-10, GSAT-12R, GSAT-14, GSAT-15, GSAT-16, GSAT-17, GSAT-18, GSAT-30 and GSAT-31, NSIL is providing various services like DTH, VSAT, TV, DSNG etc. to the customers from Govt., Private and public sectors.
- Following Service Agreements signed with International Customers.
 - Launch Vehicle Tracking Support from ISTRAC, Lucknow
 - LEOP, Routine and Critical Tracking & Command Support from ISTRAC, Bangalore
- Signed a Technology Transfer Agreement with M/s Alpha Design Technologies Private Limited., Bangalore for transferring IMS-1 Satellite Bus Technology.

2. No of Cases of 'Sanction of Prosecution" pending for more than three months: NIL

3. Particulars of cases in which there has been a departure from the Transaction of Business Rules or established policy of the Government: NIL

4. Status of ongoing Swachhta Abhiyan (progress under Special Campaign):

Based on the Swachhta Action Plan for the year 2022, Centres/Units/ABs/CPSEs of DOS/ISRO are carrying out various activities meticulously. Swachhta Pakhwada awards for 2021 has been distributed during ISRO Council. Swachhta Pakhwada Award 2022 for the best maintained Centre/Unit/AB/CPSE are also being finalized. Also, as a part of Special Campaign 2.0, 23 campaign sites across various Centres/Units/ABs/CPSEs of DOS/ISRO have been identified and cleanliness campaign has been implemented.

5. Status of Rationalisation of Autonomous Bodies:

A committee was constituted for review of Autonomous bodies under the department. Based on the recommendations of the committee, it is proposed to continue the 3 ABs namely PRL, NE-SAC & IIST under the department. SCL has been brought under the administrative control of MeitY, new Delhi. Review of NARL is underway. A report on this has been sent to Department of Expenditure(DoE), New Delhi and the confirmation is awaited.

Treasury Single Account(TSA) has been implemented in PRL, NESAC , NARL and IIST, ABs under DOS

6. Information on specific steps taken for utilisation of the Space Technology based tools and applications in Governance and Development:

Support to Ministries/ Departments

- **M/o Rural Development:** Under the Integrated Watershed Management Programme (IWMP/ WDC-PMKSY) for monitoring Watersheds using Geospatial Technologies, 274 satellite images were provided to the states. 2,000 locations of watershed development interventions have been geotagged (cumulative 16.68 lakh geotags) and 580 summary reports were generated.
- **MoH&UA:** Final version of urban geospatial database for 6 AMRUT cities have been delivered (cumulative completion: 224 / 238).

7. Vacancy position of senior level appointments in the Ministry/Department, including Autonomous Bodies/PSUs:

The detailed status regarding all the posts pertaining to Department of Space has been updated on AVMS. The status of updation of vacancy as on 29.11.2022 is as follows:

- Total number of posts required to be entered on AVMS: - 24
- Number of posts filled as on date: - 21
- Number of posts totally vacant as on date: - 03
- Number of posts under premature repatriation - 00
- Number of posts under additional charge arrangement: - 03
- Number of posts that would fall vacant during the next 06 months: -01

8. List of cases in which ACC directions have not been complied with:NIL

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