

**GOVERNMENT OF INDIA
DEPARTMENT OF SPACE**

Sub: Monthly Summary of Department of space for the month of January, 2024

PART- I (Unclassified)

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

A. Space Transportation:

- PSLV-C58 vehicle in its 60th flight, successfully launched the India's first dedicated polarimetry mission i.e., XPoSAT spacecraft on January 01, 2024 into the intended orbit of 650 km with 6-degree inclination, to carry out research in space-based polarisation measurements of X-ray emission from celestial sources. The spacecraft carried two scientific payloads which has been indigenously developed by Raman Research Institute and DOS/ISRO.

Subsequently, the upper stage of PSLV-C58 performed two orbit change maneuvers to bring down the orbit to 350 km altitude and started functioning as PSLV Orbital Experimental Module (POEM) for nine scientific/technology demonstration payloads including six payloads from Indian startups & academia enabled through IN-SPACE, and three technology demonstration payloads from Physical Research Laboratory and DOS/ISRO.

- Technologies Demonstrated On-board PSLV Orbital Experimental Module-3 (POEM-3) launched in PSLV-C58 / XPoSat Mission: ISRO tested a 100 W class Fuel Cell based Power System (FCPS) and during the short duration test, 100W power was generated from Hydrogen and Oxygen gases stored on onboard in high pressure vessels. ISRO also qualified 10 Ah Silicon–Graphite anode based high energy density Li-ion cells as a low weight and low cost alternative to present cells being used.
- Vehicle stacking activity for the GSLV F14/ INSAT-3DS mission completed upto GS2 stage and stacking of Cryogenic Upper Stage is planned on January 29, 2024. The launch is tentatively scheduled on 17th February, 2024.
- Vacuum ignition test of CE-20 E13 cryogenic engine HT-6 successfully conducted for a duration of 2.5 seconds in High Altitude Test condition at Thrust chamber test facility at IPRC on January 5, 2024.

B. Space Applications:

I. Earth Observation:

- **Kharif sown area progression at national scale (for MoA&FW):** Methodology developed for synergistic use EOS-06 data with optical and microwave data for near real time monitoring of kharif sown area progression at national scale.

- **Agriculture Technology project** (for State governments): Monitoring of Cotton crop harvesting during Kharif 2023-24 and acreage of onion crop during rabi 2023-24 is done for Maharashtra. Technology-based crop yield estimation for Soybean crop in Maharashtra and for Soybean & Paddy (Rainfed & Irrigated) crops in Madhya Pradesh are in progress.
- **Rejuvenating Watershed for Agriculture Resilience through Innovative Development (REWARD, for MoRD)**: Draft version of Technical report on National Technical Standards under REWARD was updated with Geospatial inputs.
- **Delineation of Surface Coal Fire and associated Land Subsidence in Jharia coalfield (2022-24), Jharkhand** (for **BCCL, MoCoal**): Coal fire locations and area have been estimated using Satellite data of December 2023, and ground verification inputs.
- National Highways Authority of India (**NHAI**) has entered into MoU with NRSC/ ISRO to develop and report a **Green Cover Index for the National Highways in India**.
- Total 35050 data/products are downloaded by the users from Bhoonidhi under open & free data access facility.

II. Disaster Management Support

- Design and Development of NDEM Version 5.0 Web portal is initiated using open source technologies.
- Methodology for generating flood risk product at state level is developed and is being implemented in the NDEM dashboard.
- 8 IRS products were disseminated for International Charter and 6 products for Sentinel Asia
- Taluk level Agricultural Drought Vulnerability Index (ADVI) map is prepared for entire India.

III. Geospatial Training & Capacity Building

- Nearly 10,150 participants from 1189 networked Institutions attended the “Geodata Processing using Python” course conducted by IIRS.

C. Human Spaceflight:

- Propulsion system interface generation activities completed on the Crew Module structure for G1 mission. Other interface generation activities are in progress.
- Vacuum ignition test of cryogenic CE20 E13 engine successfully conducted for high altitude test condition at IPRC, Mahendragiri.
- Static test of Low Altitude Escape Motor (LEM ST-02) completed successfully at SDSC, SHAR.

- High altitude Escape Motor test (HEM ST-08) to assess the vacuum ignition characteristics successfully completed.
- Crew module hardware for Static Mock-up Simulator realized at industry and received at HSFC for crew training.
- Refurbishment of recovered hardware from TV-D1 mission completed at industry and received at HSFC

D. Space Sciences:

- Halo-Orbit Insertion (HOI) of solar observatory spacecraft, Aditya-L1 was accomplished at ~1600 Hrs on January 6, 2024 (IST).
- Space science data pertaining to Chandrayaan-2 and AstroSat missions were uploaded to the public portal of the Indian Space Science Data Centre (ISSDC), for scientific analysis by the community. The total volume of data from these missions, which are made available to public use, stand 48.3 TB.

E. Capacity Building:

- ISRO participated in the India International Science Festival (IISF) - 2023 during 17th - 20th January, 2024 at Faridabad and organised Space Challenges & Space Hackathon activities for students along with VIBHA and S&T Ministries/ Departments.
- ISRO Tableaux participated in Republic Day Parade-2024, depicting Chandrayaan-3 achievements and ISRO's future missions.
- During the month, 8 patents were granted and three patent applications are filed at IPO.
- An interactive session was conducted for IAS Officer Trainees of 2023 on 17th January, 2024 at DoS, as part of Bharat Darshan.

F. Training:

1.	One-day training programme on "GeoWeb Applications and UAV Services in Disaster Management Support" on Jan 5, 2024	Organised at NESAC for NDRF officials
2.	Eight-week certificate course on 'Remote Sensing and Image interpretation'	Commenced on Jan 01, 2024 at IIRS for 20 participants
3.	Two-week training program under AMRUT sub-scheme [Jan 22 nd , 2024 – Feb 02 nd , 2024] at IIRS	22 planning officials from Maharashtra

4	2 nd semester of Joint DAIICT-IIRS-AAU M.Sc Agriculture analytics program	Commenced on Jan 01, 2024 at IIRS with 27 students
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G. Safe & Sustainable Space Operations:

- Collision Avoidance (COLA) analysis was carried out for PSLV-C58/XPoSat mission to clear the nominal lift off time at 03:40 UTC, 1st January, 2024.
- Daily SOPA (Space Object Proximity Analysis) and re-assessment of close approach situation for 2741 Conjunction Data Messages (CDM) from CSpOC/USSPACECOM were performed for 24 LEO and 29 GSO satellites. POEM-3 CDM's are also analyzed. No Collision avoidance maneuvers were necessary.
- Re-entry prediction was carried out for 20 large objects that re-entered the atmosphere.
- The arrival, orbit insertion, orbit lowering before descent and landing of SLIM (Smart Lunar Investigating Mission) were monitored closely in coordination with JPL's MADCAP team.
- Implementation Agreement with ARIES to refurbish the 50-cm Baken Nunn Schmidt Telescope at Manora Peak, Nainital was signed on 19th January, 2024.

H. International Cooperation:

- Joint Statement of Intent between DOS/ISRO and NASA for a Joint Effort to the International Space Station in 2024 was signed on January 24, 2024.
- The agreement for providing launch service for Munal satellite by Nepal start up, Antarikhya Pratisthan (APN) was exchanged by NSIL and APN on January 04, 2024 on the sidelines of India – Nepal Joint Committee meeting.
- Meetings of ISRO- MRIC (Mauritius) Joint Working Group on joint satellite realisation (January 09, 2024) and ISRO – CNES (France) Joint Working Group on launch vehicle development (January 18, 2024) were held.
- Discussions were also held with Kenyan Space Agency on January 16, 2024 on implementing the cooperation areas mentioned in the joint statement released during the visit of President of Kenya to India.
- Representative from ISRO participated in the Middle East Space Conference 2024 held at Muscat Oman during January 09-10, 2024.
- Senior officials of JPL/NASA visited ISITE, ISRO HQ and SDSC SHAR for reviewing the activities for NISAR realization and for media communication related activities.
- A one-day session at ISRO HQ was conducted for foreign diplomats under the 4th Annual Disarmament and International Security Affairs Fellowship Programme of MEA on 31st January, 2024.

I. IN-SPACE Activities:

- Authorization for the launch of PSLV-C58, establishment & operations of XPOSAT mission and POEM-3 from SDSC, SHAR by Indian Space Research Organisation was issued by IN-SPACE.
- MoU and NDA signed with M/s. Skytrack Technologies Pvt Ltd, Assam on design and development of intelligent transportation system using APIs and data products of ISRO
- IIT Bombay has started Introduction to Space Technology minor. The course has received huge response from student community and 93 students are registered for the same.
- An International Space Conclave, "New Space Era: Connecting Science, Nations, and Societies" during Vibrant Gujarat Summit 2024 was organized.
- An MOU with Space Application Centre and Gujarat Knowledge Society has been signed and exchanged for Collaboration on Development of Semiconductor Design Ecosystem & Talent development for Space and Commercial technology.
- The respondents of EoI for SSLV ToT have been evaluated. Six industries / consortium have been shortlisted as prospective bidder to participate in RFP process. The RFP is in final stages of review/ approval.

J. NSIL Activities:

- NSIL conducted a Stakeholders' Conference for manufacturing LVM-3, under a PPP partnership with Indian Industry to meet the emerging Global Launch Service market needs.
- NSIL held technical discussion with M/s SpaceX, for launch of GSAT-20 satellite.
- NSIL issued frequency allotment letters to users for the migration from GSAT-8 to other GSAT satellites.
- NSIL leased C-Band capacity on GSAT-10 satellite to Private Indian Teleport Operators for occasional use for DSNG services.
- NSIL is in advance stage of discussion with two Indian Industries for providing TTC support for their satellites.
- NSIL signed Technology Transfer Agreement (TTA) with M/s. ICON Design Automation Pvt Ltd. for transferring the 'Digital ASIC for IDU of SATCOM Terminal' 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):

Swachhta Pakhwada – 2023 has been observed from 1st – 15th February, 2023 with mass participation from employees, housing colony residents and CISF personnel etc.

Apart from this, Swachhta Action Plan for the year 2023-24 has been finalised with an emphasis on outcome based Swachhta activities and creating awareness about cleanliness and hygiene and an amount of ₹470 lakhs has been allocated for Swachhta Activities. The action plan has been communicated to the DDWS. The Action plan has been communicated to the DDWS and uploaded on Swachhta Action Plan portal of DDWS. The activities are being meticulously carried out at Centres/ Units/ ABs/ CPSEs.

5. Status of Rationalisation of Autonomous Bodies:

EMC has recommended that SCL and NARL be governmentalized out of which SCL has been transferred to MeitY during the year 2021-22. The recommendations of the committee in respect of NARL is under review.

All the AB's under the Department namely, IIST, PRL, NARL & NESAC have been brought under Treasury Single Account.

6. 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 31.01.2024 is as follows:

- Total number of posts required to be entered on AVMS: - 24
- Number of posts filled as on date: - 20
- Number of posts totally vacant as on date: - 04
- Number of posts under premature repatriation – 01
- Number of posts under additional charge arrangement: - 02
- Number of posts that would fall vacant during the next 06 months: - 04

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

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