

**GOVERNMENT OF INDIA
DEPARTMENT OF SPACE**

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

PART- I (Unclassified)

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

A. Space Transportation:

- Integration activities of the L110 stage required for the first unmanned Gaganyaan i.e. LVM3-G1 mission completed and dispatched to SDSC, Sriharikota on April 01, 2024 for further activities.
- Integration activities of the second stage of PSLV i.e. PS2 stage required for the PSLV-C59 mission completed and dispatched to SDSC, Sriharikota on April 01, 2024 for further activities.
- Integration activities of the fourth stage of PSLV i.e. PS4 stage required for the PSLV-C59 mission completed and dispatched to VSSC on April 12, 2024 for further activities.
- Second vacuum ignition hot test of CE20 E13 cryogenic engine demonstrating engine restart capability as in flight has been successfully conducted for a duration of 2.5 seconds in High altitude test condition on April 16, 2024.
- Second Hot test of the PS4 engine powering the fourth stage of PSLV was successfully carried out for a duration of 200 seconds in the High Altitude test facility on April 02, 2024, wherein the nozzle divergent was realised out of the carbon-carbon material.
- Third hot test of the PS4 engine, wherein the nozzle divergent realised out of the carbon-carbon material, was successfully carried out for a duration of 665 seconds on April 25, 2024.

B. Space Applications:

I. Earth Observation:

- Agriculture Technology project (for State governments): Rabi crop sowing progress monitoring and crop inventory mapping for 2023-24 season are completed for Maharashtra. Crop maps (wheat, gram & mustard) for rabi 2023-24 are generated for Madhya Pradesh.
- Development of hydro-informatic products and services (National Hydrology Project, NHP, for MoJS): daily; monthly and fortnightly actual evapotranspiration (AET) products, hydrological drought index products (reservoir storage, water spread, ground water level, runoff), daily snow cover maps, and daily simulated water balance component products are generated, web-published and shared with MoJS.
- Election e-ATLAS: developed by NESAC was utilized by the offices of CEOs of Sikkim, Mizoram, and Manipur (during Phase-I and II) across 4892 Polling

stations, track the movement of 6392 electoral officials and monitor all poll related activities.

- Planning & Monitoring of MGNREGA assets/ activities using Geospatial Technology (for MoRD): Studies are initiated towards impact assessment of assets/ activities under MGNREGA for Gram Panchayats in Tamil Nadu, Kerala and Karnataka.
- 58,987 satellite data products are downloaded by the users from Bhuvan & Bhoonidhi under open & free data access facility.

II. Disaster Management Support:

- NDEM V5.0: Design and Development of framework to fetch data of INCOIS (Storm Surge, Cyclone Track, High Wave, Tsunami, Coastal Current and Swell Surge Alerts) using APIs is completed.
- Flood Vulnerability and Risk Assessment mapping are completed for Bihar State.
- Monitoring long-duration forest fire activity has been initiated for Odisha and the Long Duration Fire Event (LDFE) clusters are updated onto the state web portal (under NDEM) on daily basis.
- 18 IRS data products were disseminated to International Charter and Sentinel Asia for Disaster Management Support.

III. Technology Transfer:

- Geo Spatial Crop Monitoring System (GCMS, Beta version) software is handed over to AICIL, New Delhi. It has modules for Crop Surveillance, Crop Health Factor and Smart Sampling

C. Human Spaceflight:

- Electrical integration activities completed on Integrated Air Drop test (IADT)-01 Simulated Crew Module (SCM) hardware. IADT-01 SCM dispatched to SDSC from VSSC.
- Parachute system assembly and Buoyancy Augmentation System (BAS) assembly completed in Apex compartment of IADT-01 SCM.
- Preparation activities on IADT-01 trial sortie Crew Module completed. Shield plate load testing completed for IADT-01 hardware.
- Electrical checks and EMI-EMC test completed in tandem with helicopter at SDSC-SHAR helipad.
- Crew Module to Service Module Trial suiting for G1 Mission completed.

D. Space Sciences:

- A Multi- Wavelength Solar Radiometer (MWR) was developed and fabricated in-house and is now installed at Balasore Rocket Launching station, as a part of the Aerosol Radiative Forcing over India (ARFI) project. The MWR will measure aerosol optical depth (AOD) at ten wavelengths in visible and near IR region & is now operational.

- A technical setup has been developed for the assessment of polarization sensitivity of light scattered/forwarded and it can be used for active/passive photonic items.
- Research is ongoing towards studying the vulnerability in free space Quantum Key Distribution (QKD) systems due to detection coupling mismatch.
- A statistical model has been developed to compute ground-level ozone variability over the Doon Valley of the Himalayas.

E. Capacity Building:

- As a part of IPR day celebration, a workshop was organized on April 29th, 2024 at ISRO headquarters. A total of 60 scientist/Engineers participated in the workshop, wherein lectures were delivered by IPR experts.
- A workshop on “Emerging technology” was organized at Trivandrum during 8-9 April, 2024, in collaboration with Wadhvani Foundation & Capacity Building Commission, for 45 Scientist/Engineers in launch vehicle area.
- During the month, 2 patents were granted and 2 fresh patent application were filed at IPO.

F. Training:

1.	Six-week certificate course on “Big Geodata Processing’ at IIRS	Mar 04, 2024 – Apr 12, 2024
2.	One -week certificate course on ‘Cloud Computing using GEE for spatio-temporal data analysis ’	Commenced on April 29 th , 2024
3.	Online course for ISRO START	Inaugurated on April 24 th , 2024

G. Safe & Sustainable Space Operations:

- Daily SOPA (Space Object Proximity Analysis) and re-assessment of close approach situation were performed for 22 LEO and 30 GSO satellites. No Collision avoidance manoeuvres were necessitated in April, 2024.
- Two orbit maintenance manoeuvres were executed for Chandrayaan -2 Orbiter.
- Re-entry prediction was carried out for 24 large objects that re-entered the atmosphere.
- India’s intent for debris free space mission (DFSM) by 2030 was announced by Secretary, DOS/ Chairman, ISRO in the opening plenary of 42nd IADC Annual Meeting.
- Indian Space Situational Assessment Report (ISSAR) 2023 was released.
- ISRO delegates attended the Apophis T-5 workshop at ESTEC/ESA, Noordwijk during April 22-23, 2024, which provided valuable inputs for planetary defence and science opportunities during the upcoming flyby of Apophis in April, 2029.
- A meeting was held with ESA delegation on 19th April 2024 to discuss the future areas of collaborations in the areas of space safety.

H. International Cooperation:

- ISRO hosted the 42nd Annual Meeting of Inter Agency Space Debris Coordination Committee (IADC) during April 16-19, 2024 at Bengaluru. Around 120 delegates from 13 countries participated in the various working group discussions and plenary sessions.
- ISRO officials participated in (i) 6th Working Group meeting under BRICS Remote Sensing Satellite Constellation agreement (April 09, 2024) (ii) 63rd Session of the Legal Sub-Committee of the UNCOPUOS (April 15-26, 2024), 2024 and (iii) “New Space for Mauritius” symposium (April 18-19, 2024), at Mauritius. The Co-Chairs of the India - US Civil Space Joint Working Group had a meeting on April 17, 2024.
- International Astronautical Federation (IAF) conferred ‘IAF World Space Award 2024’ to Chandrayaan-3 Team, ISRO and ‘IAF Hall of Fame Award 2024’ to Shri. Somanath S, Secretary, Department of Space/ Chairman, ISRO.

I. IN-SPACE Activities:

- The IN-SPACE Technical Centre, featuring Six Technical Labs, Clean Rooms, and Co-Working Spaces, has been operationalized, and three companies have started utilizing the facilities for their POEM payloads.
- Activities related to the launch readiness of Agnibaan-SORTeD have been completed, and deliberations in the Mission Readiness & Launch Clearance Committee are in progress for a tentative launch window from May 19th to May 25th, 2024.
- Requests for Proposals (RFP) for SSLV Transfer of Technology have been sent to the shortlisted bidders and their queries are being addressed.
- IN-SPACE authorization was issued to the following GSO satellites and NGSO constellation for provisioning of its capacity in India for communication services:
 - a) M/s. Inmarsat India Private Limited (Inmarsat) for Inmarsat 6F1 satellite belonging to enable provisioning of its C and L band capacity.
 - b) M/s. OrbitConnect India Pvt Ltd for SES-12 satellite to enable provisioning of its Ku-Ka Band HTS capacity of 16 spot beams.
 - c) M/s. OrbitConnect India Pvt Ltd for O3b mPower satellite constellation to enable provisioning of its Ka Band HTS capacity.
- IN-SPACE authorization was issued to M/s. Tata Advanced Systems Limited, Bengaluru for establishment and operations of Remote Sensing Satellite namely, TSAT-1A.
- A Brainstorming Session on Ground Station as a Service (GSaaS) was conducted on April 16, 2024. The session focused on the present scenario for GSaaS, its potential to contribute to the space economy, expectation of the industry from the government, evolving licensing/authorization approval requirements and the way forward. The session was attended by officials from DoT and WPC wing of DoT, ISRO, IN-SPACE, and industry associations (ISpA and CII) along with participants from more than 15 industries exploring GSAAS.

- Hosted Payloads from 11 NGEs have been selected by IN-SPACe for the upcoming POEM-4 onboard PSLV-C60 mission.
- IN-SPACe CANSAT Competition was successfully conducted at Ahmedabad on 16th and 17th April 2024.
- Seed Fund Scheme: The Evaluation completed and the Grantee selected against Disaster management and Urban Development announced.

J. NSIL Activities:

- 7th meeting of the Programme Monitoring Committee for PSLV realization through industry consortium (PMC-PIC) was conducted to review the overall status of the programme.
- As part of realization of 15 nos. of SSLV, NSIL floated tender for 16 items. Techno- commercial evaluation has been completed for 13 Tenders.
- Activities related to GSAT- 20 are progressing, along with necessary launch coordination with M/s SpaceX.

➤ Satcom Services:

- NSIL issued a frequency allotment letter to Government user for providing C Band Space Segment Capacity on GSAT satellite to meet its DSNG requirements.
- NSIL signed Amendments for the extension of term with users for provisioning the continuity of services beyond March 31, 2024 to meet their satellite capacity requirements.
- NSIL had a meeting with Government users to understand their additional and fresh long-term requirement of satellite capacity to be taken up during 4th quarter of 2024.

➤ Mission Support and Ground Segment

- NSIL signed a contract with a foreign customer for providing TTC support for their launch vehicle tracking through ISTRAC ground station.
- NSIL submitted Techno Commercial Proposal to two Indian customers for providing TTC/LEOP support for their satellites.
- NSIL submitted response to an RFP for providing mission support to an international customer.

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):

As per the guidelines of Government, Department has chalked out an action plan for implementation of Swachhta Pakhwada 2024 during 1st to 15th February, 2024 and communicated to DDWS and uploaded on Swachhta Samiksha portal.

Based on this action plan, DOS/ISRO Centres/ Units/ ABs/ CPSEs have observed Swachhta Pakhwada 2024 from 1st to 15th February, 2024 with active participation of senior officials, employees, housing colony residents, CIFS personnel, etc. The photograph of events carried out during Pakhwada were uploaded on Swachhta Samiksha Portal.

5. Status of Rationalisation of Autonomous Bodies:

EMC has recommended that NARL be governmentalized. 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 30.04.2024 is as follows:

- Total number of posts required to be entered on AVMS: - 24
- Number of posts filled as on date: - 18
- Number of posts totally vacant as on date: - 06
- Number of posts under premature repatriation – 00
- Number of posts under additional charge arrangement: - 01
- Number of posts that would fall vacant during the next 06 months: - 02

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

* * *