

**GOVERNMENT OF INDIA
DEPARTMENT OF SPACE**

Sub: Monthly Summary of Department of space for the month of April 2023

PART- I (Unclassified)

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

A. Space Transportation:

- Runway landing Experiment of the Reusable Launch Vehicle - Technology Demonstrator was successfully conducted on April 02, 2023 at the Aeronautical Test Range (ATR) of DRDO located at Chitradurga, Karnataka.
- The final long duration hot test of human rated L110-G Vikas Engine has been successfully accomplished for the planned qualification duration of 240s on April 6, 2023 at ISRO Propulsion Complex (IPRC), Mahendragiri.
- Launch of PSLV-C55, a dedicated commercial mission of NSIL was successfully accomplished on April 22, 2023, which launched two satellites for Singapore and also hosted 7 payloads from Indian Space startups and Academia on the PSLV Orbital Experimental Module (POEM-2).
- Vehicle stacking activities for the GSLV F12/ NVS-01 mission commenced and completed upto GS1 stage at SDSC, Sriharikota.
- Stage integration, leak and functional checks for the L110 stage identified for the GSLV MkIII-M4/Chandrayaan-3 mission completed and stage dispatch from IPRC to SDSC is planned by end of April 2023.

B. Space Applications:

Earth Observation

- Bhuvan-FIPIC Geoportal is initiated for 14 Pacific islands under Forum for India-Pacific Islands Cooperation (FIPIC), with provisions for satellite data visualization, thematic information, terrain information, disaster management datasets etc.
- Agriculture Technology project (for Maharashtra & Madhya Pradesh): Cotton yield estimation is provided for supporting PMFBY programme in Maharashtra. Wheat cropped area damaged due to hailstorm in Vidisha and neighbouring districts was assessed and provided to user.
- Automated Rainfall Runoff products (Current, 2-day forecast and cumulative) at national level are generated on daily basis and are populated on NDEM Geoportal.

C. Human Spaceflight:

- Test Vehicle TV-D1 crew module hardware interface generation activities completed. Cable Harness Evaluation System (CHES) and partial power system checks also completed.
- Phase-1 Acoustic test for characterization of CES avionics for TV-D1 conducted successfully.
- Four system demonstration tests with different modes and varying burn durations completed for Crew Module Propulsion System.
- Periodic medical evaluation completed as part of crew training activities.

D. Space Science:

- 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 Exoplanet research group of the Physical Research Laboratory (PRL), Ahmedabad has made an exciting discovery of a new, transiting massive giant exoplanet which is named TOI 4603b or HD 245134b.
- Studies by NARL scientists have shown significant spatial asymmetry in the aerosol distribution within Asian Summer Monsoon Anticyclone (ASMA) using the Cloud-Aerosol Lidar and Infrared Pathfinder Satellite Observation (CALIPSO) (2006–2020) measurements.
- Chandrayaan-2 Dual Frequency SAR (DFSAR) enabled the generation of first ever dielectric constant map of the polar region. This is important for detection of exploitable water ice resources.

E. Capacity Building:

YUVIKA 2023: More than 1 lakh students across the country registered for the program, and 350 students were selected based on the approved criteria. The program will take place at seven ISRO centres from May 15th to May 26th, 2023.

F. Training:

1.	'SAR data processing & its application with special emphasis on RISAT-1A/EOS-4' (10-14 Apr, 2023)	2273 participants from 472 institutions
2.	'Overview of Free and Open Source Software for Geospatial (FOSS4G)' (24-28 April, 2023)	4193 participants from 656 institutions

3	'Application of microwave remote sensing technology in water resources (water spread area extraction)' (17- 21, April, 2023)	20 officials of MERI Nashik, Maharashtra
4	'Geospatial inputs for enabling Master Plan formulation (AMRUT)' (March 13 - April 07, 2023)	25 officials of Town Planning Department, Maharashtra (Tier-III)
5	'Emerging trends in remote sensing and its applications' (17- 28 April, 2023)	13 officials participated
6	'Remote Sensing- an overview for Decision Makers' (10 - 13 April, 2023)	35 participants including IAS, IFS, Government industries & University officials
7	'Geoinformatics for Field Foresters)' (24- 28 April, 2023)	57 Range Forest Officers from Uttarakhand Forest Training Academy (UFTA), Haldwani

G. Safe & Sustainable Space Operations

- Based on daily Collision Avoidance analysis (COLA) for PSLV-C55/TeLEOS-2 Mission, the lift-off time was delayed by 1 minute to 14:20:00 IST (08:50:00 UTC) on 22 April 2023.
- Daily SOPA (Space Object Proximity Analysis) and re-assessment of close approach situation for 944 Conjunction Data Messages (CDM) from CSpOC/USSPACECOM were performed for 25 LEO and 28 GSO spacecraft.
- Conjunction analyses were carried out to resolve multiple close conjunctions between lunar orbiters, namely Hakuto-R, LRO (Lunar Reconnaissance Orbiter), KPLO (Korea Pathfinder Lunar Orbiter), and CH2O in close collaboration and deliberations through virtual meetings among the operating space agencies (Japanese agency Ispace, KARI, and NASA).
- IS⁴OM participated in the annual re-entry campaign of IADC (Inter Agency Space Debris Coordination Committee) where Startlink-1065 was chosen as the test object and uploaded 9 predictions on behalf of ISRO.

H. International Cooperation:

- Department of Space (DOS)/ISRO with support of Government of Meghalaya, and Ministry of External Affairs had organised the precursor event of the 4th edition of G20 Space Economy Leaders Meeting (SELM) during April 17-18, 2023 in Shillong. Ministers of State; G20 Sherpa; Ambassadors/High Commissioners and senior diplomats of 15 G20 and invited Countries and 3 Think-tanks in space policy have participated in the event.
- Six-member DOS/ISRO delegation participated in the 5th COSPAR symposium with the topic of 'Space science for small satellites' during April 14-21, 2023 at Singapore.

- ISRO organised “Space Module” for IFS officer trainees and Bhutan Diplomats on April 10, 2023.
- A US Congressional staff delegation visited ISRO HQ and URSC on April 12th as part of the familiarisation visit organised by MEA. A delegation led by Assistant Secretary of Commerce (Export Administration), Bureau of Industry and Security (BIS), Washington, DC also visited ISRO HQ on April 25, 2023 and discussed on the export control matters.
- ISRO officials participated in the third Working Group meeting of BRICS Remote Sensing Satellite Constellation (BRICS RSSC) on April 13, 2023 and discussed BRICS RSSC work plan for 2023.

I. IN-SPACE Activities

- Authorization for launch of PSLV-C55/TeLEOS-2 mission from SDSC, SHAR provided by IN-SPACE.
- Seven payloads belong to Indian Institute of Space Science & Technology (IIST), Bellatrix, Dhruva Space, and Indian Institute of Astrophysics were flown on the PSLV Orbital Experimental Module (POEM-02). IN-SPACE was responsible for identification, mentoring and end-to-end program management of the payloads from NGEs flown on POEM-02.
- IN-SPACE participated as part of DoS delegation in the second conference preparatory meeting (CPM 23-2) of the WRC-23 at Geneva and contributed in the discussions and provided inputs with a view to protect the satellite systems and services in India.
- IN-SPACE Standing Committee for Inter-Ministerial Coordination (SC-IMC) constituted to review the proposals of Non-Government Entities seeking authorization from IN-SPACE for space activities.
- Five MoUs and three NDAs signed with Non-Government Entities (NGE) during the current month to provide necessary support from ISRO & IN-SPACE to carry out space activities by NGEs.
- Four technologies (downstream) have been reviewed and cleared for transfer to NGEs. Eight new technologies have been identified for publishing in the list of Technology Transfer.
- Announced IN-SPACE seed fund scheme on “Announcement of opportunities in Agriculture Sector using space technology”. A webinar was conducted on 20th April 2023.
- IN-SPACE CANSAT India Student Competition: Completed Critical Design Review. A total of 40 teams presented their design.

J. NSIL Activities:

- Technical details are being shared with industry consortium (HAL and L&T) to enable them to initiate the procurement activities for PSLV-XL.

- NSIL successfully accomplished its fifth Dedicated commercial launch by launching Singapore satellites - TeLEOS-2 (Primary satellite) and Lumelite-4 (co-passenger satellite) on-board the PSLV-C55 on 22 April 2023.
- NSIL has signed a contract with Indian user for building and launching of communication satellite.
- In response to RFP submitted by NSIL, the Indian customer has placed the Supply Order for building and supply of EO satellite platforms and launching of 3 satellites, on-board PSLV.
- NSIL received Administrative Approval from Dept. of Fisheries for National rollout of Installation of vessel communication and support system in Marine Fishing vehicles for monitoring, control and surveillance.
- NSIL entered into Agreement with Prasar Bharati for provisioning 72 MHz Ku band capacity on GSAT-15 satellite for their DTH requirement.
- NSIL issued frequency allotment letter to M/s. Nelco Ltd. to meet their requirement of Ext.C band capacity on GSAT-18 satellite.
- NSIL has signed a contract with an International operator to establish dedicated and hosted antenna to support NSIL/ISRO's missions.

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 2022-23, Centres/Units/ABs/CPSEs of DOS/ISRO has effectively carried out the various Swachhta activities with mass participation from employees. Swachhta Pakhwada Award 2022 for the best maintained Centre/Unit/AB/CPSE are also being finalised.

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.

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

Support to Ministries/ Departments:

- Indian Navy: Implementation of upgraded high-resolution data assimilative wave forecasting system was completed at NODPAC, Indian Navy.
- MoRD: Monitoring of IWMP watersheds - Total geo-tagged watershed development interventions collected by concerned states & populated to Bhuvan Geoportal is ₹16.96 lakhs. Close out report along with the utilization Certificate is sent to Department of Land Resources, Ministry of Rural Development.

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 30.06.2022 is as follows:

- Total number of posts required to be entered on AVMS: - 24
- Number of posts filled as on date: - 22
- Number of posts totally vacant as on date: - 02
- Number of posts under premature repatriation – 00
- Number of posts under additional charge arrangement: - 02
- Number of posts that would fall vacant during the next 06 months: -04

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

* * *