

**GOVERNMENT OF INDIA  
DEPARTMENT OF SPACE**

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**Sub: Monthly Summary of Department of space for the month of November 2023**

**PART- I (Unclassified)**

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

**A. Space Transportation:**

- The fifth hot test on the CE20- E13 engine, planned for demonstrating the off-nominal operation of the engine (20t-5% Pc & 20t-5% MR and 22t-5%Pc & 22t-5% MR), was successfully conducted for 140s duration on November 8, 2023 at MET facility, IPRC, Mahendragiri. With this test, the CE20 engine is qualified for operating at 22t thrust level in flight.
- Vehicle stacking activities for the PSLV-C58/ XPoSAT mission commenced from November 10, 2023 from SDSC SHAR with tentative launch during last week of December, 2023. Stacking of first stage including strap-ons completed.
- Vehicle stacking of the core solid stage with the L40 strap-ons completed for the GSLV F14/ INSAT-3DS mission. Stacking of the GS2 stage to the vehicle is planned on 29<sup>th</sup> November, 2023.
- Integration activities of the Cryogenic Upper Stage for the GSLV-F14 mission completed and dispatch to Sriharikota is planned on 29<sup>th</sup> November, 2023 for further activities.
- The 60<sup>th</sup> anniversary of the launch of the first sounding rocket i.e, Nike Apache on November 21, 1963 from Thumba Equatorial Rocket Launching Station, VSSC was celebrated with the Hon'ble Minister of State for Science & technology & Department of Space, Dr. Jitendra Singh as the Chief Guest for the function.

**B. Space Applications:**

**I. Earth Observation:**

- **Agriculture Technology project** (for State governments): Rabi crop sowing progress monitoring for 2023-24 season is done for Maharashtra state. Soybean & Paddy crop maps have been generated for kharif 2023 for Madhya Pradesh state.
- **National Hydrology Project (NHP, for MoJS):** Daily snow cover maps for Himalaya and daily simulated water balance components at national level were generated and shared with NHP-NPMU, MoJS.

- **Agriculture stubble burnt area (for MoEF&CC)** has been mapped over Punjab and Haryana.
- **Updated version of election e-ATLAS of Mizoram** was effectively utilized by the Office of the CEO, Mizoram during the Mizoram Assembly Election held on November 7, 2023.

## **II. Disaster Management Support:**

- Updated NDEM Lite version is released with new features like Reservoir inflow and volume trend information, river water level discharge forecast hydrograph for the CWC stations, etc. under the Flood Forecast module.
- Operational near real time forest fire detection and dissemination is in progress for fire season 2023.
- Six IRS scenes provided for four Emergency observation requests (Nepal Earthquake, Vietnam floods & landslides, Bangladesh Storm), under Sentinel Asia.

## **C. Human Spaceflight:**

- Post Flight analysis in progress for Test Vehicle TV-D1 mission.
- Mechanical interface generation in progress for the Crew module hardware for Integrated Air Drop tests (IADT).
- Propulsion module deck plates realized for uncrewed G-X mission.
- Test Vehicle TV-D1 Crew Module hardware dispatched to industry for refurbishment for re-use in Pad Abort Test.
- Service Module structure identified for G-X mission undergoing final phase of assembly.
- Periodic Fitness Evaluation of Astronaut Designates completed.

## **D. Capacity Building:**

- ISRO participated in Aeronautical Society of India (AeSI) International conference at New Delhi and established space exhibition by showcasing the ISRO's achievements with posters & models.
- During the Month 5 patents were granted and two patent applications are filed at IPO.
- DOS/ISRO has launched a Capacity Building Programme on “Geospatial Technologies and Applications” in line with the objectives of National Geospatial Policy - 2022.

First phase of the programme has been inaugurated on 22nd November, 2023 by Hon'ble Minister of State, Department of Space, Government of India, in the presence of Secretary, Department of Space, Chairman, Capacity Building Commission and other senior dignitaries.

- ITTP training was organized for 80 nos. of ISRO technical staff at NSTI Trivandrum, Chennai & Bengaluru.

**E. Training:**

1.	1-week capacity building program on Geo-spatial Technologies and Applications	58 officials from 29 Ministries/ Departments/State Governments participated in the one-week programme at RRSC – North, New Delhi & NE-SAC, Shillong.
2.	IIRS outreach program/ Distance Learning Programme.	Nearly 28,800 participants benefited through <b>FIVE</b> Distance Learning / Virtual mode course conducted on topics such as Basics of RS, GIS and GNSS, RS&GIS in natural resources management, Geo-computation & Geo-web service etc.

**F. Safe & Sustainable Space Operations:**

- Daily SOPA (Space Object Proximity Analysis) and re-assessment of close approach situation for 2077 Conjunction Data Messages (CDM) from CSpOC/USSPACECOM were performed for 23 LEO and 29 GSO satellites. Two LEO satellites (Hysis and Resourcesat-2A) underwent collision avoidance manoeuvres (CAM), and one CAM was executed for GSAT-30, a GEO satellite.
- Re-entry prediction was carried out for 22 large objects that re-entered the atmosphere including ISRO's LVM3-M4 rocket stage.
- Others:
  - The 17<sup>th</sup> meet of the committee for LEO Post Mission Disposal was held on 15<sup>th</sup> November, 2023, clearance given for de-orbiting of Resourcesat-1/IRS-P6 and Scatsat-1 and de-orbiting of IRS-P6 initiated.
  - First meet of QUAD WG on SSA was held on 10<sup>th</sup> November, 2023 to discuss the roadmap of collaboration including a workshop on SSA in the sidelines of UN STSC session in 2024.

**G. International Cooperation:**

- MoU between ISRO and Mauritius Research and Innovation Council concerning cooperation on the development of a joint small satellite was signed on November 01, 2023 at Port Louis, Mauritius during the visit of in Honourable Minister of State for External Affairs, Government of India. The High Commissioner of India to Mauritius signed the MoU on behalf of ISRO.
- Ambassador of the Republic of Tunisia H. E Mrs. Hayet Talbi Ep Bilel (November 07, 2023), Ambassador of France H.E. Dr. Thierry Mathou (November 28, 2023) and Vice Minister of Kazakhstan Ministry of Digital Development, Innovations & Aerospace Industry, H.E. Mr. Olzhabekov Malik

(November 28, 2023) visited ISRO HQ and had meetings with Secretary, DOS /Chairman, ISRO.

- Dr. Laurie Leshin, Director of Jet Propulsion Laboratory (JPL), NASA and NASA Administrator Senator Bill Nelson, visited ISRO HQ on November 14, 2023 and November 30, 2023 respectively and had discussions with Secretary, DOS/Chairman ISRO on ISRO – NASA space cooperation activities.
- The meetings of joint Working Groups with National Space Research and Development Agency, Nigeria and French National Space Agency were held on November 14, 2023 and November 30, 2023 respectively.

#### **H. IN-SPACE Activities:**

- Indian National Space Promotion and Authorization Centre (IN-SPACE), Ahmedabad has authorised Eutelsat OneWeb constellation to enable provisioning of its capacity in India for providing the communication services.
  - M/s. OneWeb India Communication Private Limited, Noida (OneWeb India) is the first company which has been authorized by IN-SPACE for enabling provisioning of a Low Earth Orbit (LEO) satellites constellation capacity in the country. The Eutelsat OneWeb is a global constellation with 648 satellites and shall provide about 21 Gbps throughput over India.
- IN-SPACE has registered 04 additional Indian Entities who wish to disseminate/ sell the primary data pertaining to Indian territory and Ground Sampling Data (GSD) > 30 cm commercially from the Earth Observation / Remote Sensing satellites.
- In-SPACE signed an MoU with M/s. Evigway Technologies Private Limited, Gurugram for enabling Earth Observation Data/API Sharing and Support.
- Highlights of the decadal vision and strategy for Indian space economy released.
- Conducted A Short-Term Course on using Space Technology for Agriculture Sector, 38 participants from industry, Academia and startups participated.
- In the series of skill development second course on “Short term Course on Orbital Mechanics, Attitude Dynamics and Control, Space-Based Navigation and Mission Planning” announced.
- Opportunities for start-ups for seed fund in Disaster management as well as urban development has been announced.
- IN-SPACE led delegation Indian Space start-ups and Industries participated in various events during the Dubai Airshow time frame i.e. November 13<sup>th</sup> to 17<sup>th</sup> 2023. The interaction held with UAE Space Agency, MBRSC, SRTIP, and other industries and start-ups. The delegation presented their capabilities, achievements, technology development plans and offering for UAE.

- Technology Transfer Agreements have been signed with 4 industries (viz., SCICOM Pune, Rehabilitation Plantation Ltd., Kerala, Polyformalin Limited, Kerala & Atul Limited, Gujarat.
- Vibration testing on Structural Qualification Model (SQM) developed by StarOps, Bengaluru completed at URSC.
- For setting up Space Systems manufacturing clusters in Tamil Nadu, discussion are ongoing with Government of Tamil Nadu. A MoU on the aforesaid subject shall be signed shortly between IN-SPACE and Govt. of Tamil Nadu.

## **I. NSIL Activities:**

### **a) Launch Vehicle Building:**

#### **Production of 05 nos. of PSLV-XL through Indian Industry**

- NSIL conducted one-day familiarization session through online mode for the Industry Consortium (HAL-L&T) on procurement process currently practised for AVN components and Quality control of integration elements & other auxiliary systems of PSLV rocket with the help of subject matter experts from ISRO.

#### **Realization of 15 nos. of SSLV Vehicles**

- Based on Technical data received from the SSLV project, NSIL floated tender for 22 items.
- Techno-commercial bid evaluation for 8 items has been completed. Purchase/ work orders for same shall be placed with the selected vendors shortly.

**b) Launch Services:** NSIL signed 6 LSAs for 7 payloads as part of POEM on PS-4 stage of PSLV-C58/ XPoSAT mission.

### **c) Satcom Services:**

- NSIL issued frequency allotment letter to the teleport operators for their occasional use requirements for broadcasting event.
- NSIL signed the agreement with an Indian user for provisioning of services on GSAT-20 to meet their broadband requirements.

**d) Mission Support:** NSIL is in process of providing TTC (Telemetry, Tracking and Command) support to a foreign customer for their satellite through ISTRAC Ground Station.

**e) Technology Transfer & Other Activities:** NSIL signed 4 Technology Transfer Agreements (TTAs) with M/s Atul, M/s. Sci-Com, M/s. Polyformaline Pvt. Ltd.

and M/s. Rehabilitation Plantations Ltd. for transferring the technologies developed by DOS/ISRO.

**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 1<sup>st</sup> – 15<sup>th</sup> 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 30.11.2023 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: - 01
- 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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