GOVERNMENT OF INDIA

DEPARTMENT OF SPACE

LOK SABHA

UNSTARRED QUESTION NO. 4190

TO BE ANSWERED ON WEDNESDAY, MARCH 18, 2026

SPACE DEBRIS MANAGEMENT

4190. THIRU DR. S JAGATHRATCHAKAN:

Will the PRIME MINISTER be pleased to state:

(a) **whether the Government has assessed the current amount of space debris generated by Indian satellite missions and if so, the details thereof;**

(b) **the steps taken to align India's debris mitigation policies with international guidelines issued by the Inter-Agency Space Debris Coordination Committee (IADC) and the United Nations Committee on the Peaceful Uses of Outer Space (UNCOPUOS);**

(c) **whether India has collaborated with other countries or international organisations to share data and technologies for space debris tracking and management and if so, the details of such collaborations;**

(d) **the specific technological advancements or innovations being developed by ISRO for active removal of debris and the post-mission disposal of defunct satellites; and**

(e) the total budget allocated for space debris management initiatives, including the IS4OM and NETRA projects and the progress made under these initiatives so far?

ANSWER

MINISTER OF STATE IN THE MINISTRY OF PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND IN THE PRIME MINISTER'S OFFICE (DR. JITENDRA SINGH):

****

(a) Yes. As of March 2026, a total of 129 trackable space debris originating from Indian satellite missions are in orbit, which consist of defunct satellites in LEO (23) and GEO (26), rocket bodies remaining in orbit from PSLV (40), GSLV (4) and LVM3 (3), and debris generated due to in-orbit break-up of PSLV C3 rocket body (33). ISRO annually releases Indian Space Situational Assessment Report (ISSAR) which contains such assessments.

(b) Government has taken several steps to align India's debris mitigation policies with international guidelines issued by IADC and UNCOPUOS and these guidelines are followed in Indian space programmes to the extent practicable. The Debris Free Space Mission (DFSM) initiative has been announced in 2024, it aims that by 2030, the goal of zero debris creation will be achieved by all Indian actors, government as well as private, by 2030. As a step to achieve the DFSM objectives, ISRO has institutionalized the process to ensure extra fuel margins for both spacecraft and launch

vehicles, during the mission design and project initialisation phase itself.

(c) Yes. The Indian Space Research Organization has undertaken collaborative efforts with major space agencies such as NASA, ESA, JAXA to address challenges posed by space debris. These include cooperation in safety of space flights to safeguard Indian space assets., joint workshops and training programmes etc. ISRO, as an active member of IADC, has contributed to the revised mitigation guidelines for space debris mitigation.

(d) Studies are being undertaken for robotic arm, rendezvous and proximity operations that serve as precursors to active debris removal. India achieved a significant milestone in 2025 through its SpaDeX mission, demonstrating autonomous rendezvous, docking and undocking capabilities. A relocatable robotic arm and a robotic manipulator were also successfully demonstrated on the upper stage of the launch vehicle for this mission, namely the PS4 orbital experimental module or POEM-4 platform.

Towards post mission disposal of defunct satellites, specific steps are being undertaken for LEO satellites by lowering their orbits after their end of mission, so that they re-enter the Earth's atmosphere within a shorter time. The required fuel for de-orbiting is being earmarked during the design phase itself for upcoming missions.

(e) **The sanctioned cost of NETRA project is Rs. 509.01 crore. The cumulative expenditure incurred as on February 2026 is Rs. 67.77 crore.**

Since its establishment in 2022, IS4OM concerts all activities for long term sustainability of outer space activities, including space debris mitigation. IS4OM also provides the required technical support and handholding to Indian start-ups through IN-SPACe to implement space debris mitigation measures.

The SSA control centre under NETRA project is operational and is the hub for activities like collision avoidance maneuver recommendations through regular assessment of space situation, prediction of atmospheric re-entries of space objects, processing of tracking data from Multi-object Tracking Radar (MOTR) of Sriharikota as and when available, along with continual efforts to improve the accuracy and efficiency of operational workflow. The indigenous phased array radar design for multi object tracking has been cleared by a national level expert committee after extensive reviews, as part of plan to establish indigenous observation facilities under NETRA.

****