

Agenda item - 7

Space Debris

Madam Chairperson and Distinguished delegates,

India strives to enhance its capabilities towards safeguarding its space assets through establishment of dedicated space object observational facilities and evolving more efficient mechanisms for continual processing and analysis of space situation.

Madam Chairperson,

ISRO regularly participates in the annual Inter-Agency Space Debris Coordination Committee meetings. ISRO has also been an active participant in the activities of IAA Space Debris Working Group and IAF Space Traffic Management Technical Committee.

ISRO has taken initiatives to strengthen its ongoing SSA activities, to establish the necessary supporting infrastructures and to synergise space debris studies and mitigation efforts across India. Network for space object TRacking and Analysis or NETRA project, which aims to establish a network of observational facilities and a control centre for SSA, is a first step to achieve this goal. An optical telescope and a tracking radar will be set up under NETRA. The NETRA observational facilities will be complemented by recently refurbished multi object tracking radar (MOTR) at Sriharikota, which has commenced trial tracking of LEO objects. Two optical telescopes are being commissioned for GEO space object observation. The ISRO SSA Control Centre at Bangalore was inaugurated on 14th December 2020.

Madam Chairperson,

Indian payloads placed in orbit between February 2020 and March 2021 are EOS-1 and CMS-01, both were launched by PSLV. PSLV-C49, PSLV-C50 and PSLV-C51 successfully injected the payloads in their intended orbits. The PSLV upper stages were subsequently passivated by venting out excess fuel to minimise the risk of any possible explosion.

For all PSLV missions, COLLision Avoidance (COLA) assessments were carried out to find the safe lift-off times within the designated launch windows. The satellite separation sequences were designed to eliminate any post-injection collision risks amongst the separated payloads and the upper stage.

Madam Chairperson,

Space Object Proximity Analysis are carried out for all operational satellites on regular basis to predict any close conjunction with catalogued objects. In 2020 alone, 11 Collision Avoidance Manoeuvres were carried out for LEO and one for GEO spacecraft.

At the end of its mission life, INSAT-4CR was raised to super-synchronous graveyard orbit, and electrically passivated in perfect compliance with IADC guidelines. Cartosat-2 and Microsat-TD were deorbited to lower their perigee altitude at the end of operational life to reduce their post-mission orbital life-times. It may be noted that Cartosat-2 is the

first Indian LEO satellite to be deliberately de-orbited to be compliant with the IADC recommended 25-year rule.

ISRO's PSLV-C10 rocket body was chosen as the target for 2020 Re-entry Test Campaign of the IADC. ISRO actively participated in the re-entry prediction campaign of the object which re-entered the atmosphere 23rd January 2020.

Madam Chairperson,

The emerging large constellations in Low Earth Orbit are likely to cause significant operational overhead for conventional spacecraft operators with regards to spacecraft safety. In 2020 alone, satellites from such constellations have resulted in 28 close conjunctions within a distance of 1 km of Indian assets. In the absence of any existing regulations for Space Traffic Management, the selection of orbital slots for future missions away from crowded orbital regimes of already announced constellations may not be feasible without compromising mission objectives. In this regard, India urges this esteemed body to deliberate on the impact of the large constellations and take necessary steps to ensure unhindered and equitable access to space.

Madam Chairperson,

ISRO recognises the importance of technical co-operation and data sharing amongst space faring entities to ensure an effective and efficient monitoring of Space Debris environment and to voluntarily implement the mitigation measures. India is currently in the process of formally adopting a national mechanism on Space Debris mitigation, re-affirming her commitment towards safety and sustainability of outer space.

Thank you, Madam Chairperson.