

GOVERNMENT OF INDIA
DEPARTMENT OF SPACE

RAJYA SABHA

UNSTARRED QUESTION NO. 2379

TO BE ANSWERED ON THURSDAY, MARCH 20, 2025

ISRO'S SPACE DOCKING EXPERIMENT (SPADeX) MISSION

2379. SMT. SANGEETA YADAV:

Will the PRIME MINISTER be pleased to state:

- (a) the recent technological achievements made by Indian Space Research Organisation (ISRO) under Space Docking Experiment (SpaDeX) mission;
- (b) the manner in which this technology would be used in Chandrayaan-4 and Gaganyaan missions in future; and
- (c) the current status of India's proposed space station plan along with the time frame for its completion?

ANSWER

**MINISTER OF STATE IN THE MINISTRY OF PERSONNEL, PUBLIC
GRIEVANCES & PENSIONS AND IN THE PRIME MINISTER'S OFFICE**

(DR. JITENDRA SINGH):

- (a) The SPADEX satellites were successfully launched by the Polar Satellite launch Vehicle (PSLV-C60) into the intended orbit on December 30th, 2024 from Satish Dhawan Space Centre, SHAR. Space Docking Experiment (SPADEX) mission successfully demonstrated the in-orbit docking of two satellites on January 16, 2025.
- (b) The SPADEX technology demonstration is a precursor to the major missions envisaged as part of Space Vision 2047, which includes Chandrayaan-4 sample return mission, Bharatiya Antariksh Station (BAS) & Indian crewed landing on the Moon.

An indispensable technology in accomplishing such complex and challenging missions is the capability in the field of space docking. This is primarily because larger spacecrafts are no longer constrained by larger vehicle capability as docking essentially allows us to assemble the spacecrafts in space. It allows for spare spacecrafts to address contingency situations which become critical for human centric missions. The successful demonstration of In-space Docking experiment is thus a forerunner for autonomous docking and crucial for India's future missions for assembling modules of space stations for BAS, for transporting crew and supplies to these stations and Chandrayaan-4 for bringing the samples back to Earth orbit, where the modules will dock with a re-entry module designed to withstand Earth's atmosphere.

- (c) Responsibility of various ISRO centres pertaining to Overall system engineering of BAS-01 and development of subsystem are identified. Centre level teams are formed for detailed Engineering subsystem and details are being worked out. Development and launch of the first module i.e. Base module (BAS-1) is targeted by 2028 and fully operational BAS with five modules is targeted by 2035.
