Gaganyaan Mission: ISRO is set for first test flight today

The space agency will conduct a crew module test as part of its Gaganyaan programme, which aims at sending humans into space; beginning next year, one unnamed flight will carry human

Hemanth C.S.
BENGALURU

The Indian Space Research Organisation (ISRO) on October 21 will conduct the Gaganyaan's first Flight Test Vehicle Abort Mission-1 (TV-D1), which will demonstrate the performance of the Crew Escape System. The TV-D1 will lift off at 8 a.m. from the first launch pad of the Satish Dhawan Space Centre in Sriharikota.

According to ISRO, the test vehicle developed for this abort mission is a single-stage liquid rocket. The payloads consist of the Crew Module (CM) and Crew Escape Systems (CES) with their fast-acting solid motors, along with CM fairing (CMF) and Interface Adapters.

The CM is where the astronauts are contained in a pressurised earth-like atmospheric condition during the Gaganyaan mission. For the TV-D1, the CM is an unpressurised version. "This flight will simulate the abort condition during the ascent trajectory corresponding to a Mach number of 1.2 encountered in the Gaganyaan mission. CES with CM will be separated from the Test Vehicle at an altitude of about 17 km. Subsequently, the abort sequence will be executed autonomously commencing with the separation of CES and deployment of the series of parachutes, finally culminating in the safe touchdown of CM in the sea, about 10 km from the coast of Sriharikota," ISRO said.

Preparation under way for the Flight Test Vehicle Abort Mission-1 as the Gangayaan test flight will take off today from Sriharikota. ANI

The entire duration of the flight from lift off to CES and CM separation to deployment of parachutes and touch down of the crew module in the sea about 10 km from the coast of Sriharikota will be completed in about eight and half minutes.

The ISRO said that the Indian Navy will lead the recovery of the TV-D1 CM after touchdown. Recovery ships positioned at a safe range in sea waters will approach the CM and a team of divers will attach a buoy, hoist the CM using a ship crane and bring it to shore.

The objectives of mission is flight der stration and evaluatio test vehicle sub syst evaluation of CES in ing various separation tems and CM charact tics and decelera systems demonstratio higher altitude and recovery.

Simply put, the o tive of the mission check the safety of the for its capabilities to the CM to safety in ca an emergency that wi quire ISRO to abort mission.

The Gaganyaan mis aims to demonstrate capability to launch man beings (three members) to low eart bit and bring them safely to earth by lan them in either the Ba Bengal or the Arabian

Prior to the first cre flight, three test veh (TV) flights have planned: TV-1, TV-2 TV-3. Saturday will be first flight, and the be ning of next year, one unnamed flight will c the humanoid, Vyomi