

GOVERNMENT OF INDIA

DEPARTMENT OF SPACE

LOK SABHA

UNSTARRED QUESTION NO. 657

TO BE ANSWERED ON WEDNESDAY, DECEMBER 01, 2021

SPACE DEBRIS

657. SHRI SANGANNA AMARAPPA:

SHRI L.S. TEJASVI SURYA:

SHRI PRATHAP SIMHA:

DR. UMESH G. JADHAV:

Will the PRIME MINISTER be pleased to state:

- (a) whether the Government has taken measures to secure the Indian satellites from space debris in the Earth's orbit, and if so, the details thereof; and**
- (b) whether the Government has systems in place to neutralize any attempts by Indian's adversaries to attack its space satellite systems, and if so, the details thereof?**

ANSWER

MINISTER OF STATE IN THE MINISTRY OF PERSONNEL, PG &

PENSIONS AND IN THE PRIME MINISTER'S OFFICE

(DR. JITENDRA SINGH):

- (a) Yes, Sir. DOS/ISRO has taken measures to secure the Indian satellites from space debris. The Directorate for Space Situational Awareness & Management is established at ISRO-**

HQ to manage ISRO's space assets. The state-of-the-art Space Situational Awareness Control Centre is currently operational at Bengaluru for close approach analysis and assessment of threats to Indian satellites from space debris. It also designs and executes collision avoidance maneuvers whenever critical collision risk is identified.

ISRO has been following UN guidelines for the mitigation of space debris threats to safeguard Indian space assets.

- (b) ISRO has implemented fortification measures like strong encryption of commands and authentication protocols in its older in-orbit remote sensing satellites to prevent access to the satellites. To deny information from the satellites (payload and satellite data), measures like directional transmission antenna, transmission of dummy data, switching off information over non-visibility area to Indian stations etc. have been implemented.**

More advanced fortification measures like strong encryption of both command and information are planned for the future satellites. Apart from encryption, techniques to protect satellites against jamming and spoofing are under development for implementation in its future communication and navigation satellites.
