GOVERNMENT OF INDIA

DEPARTMENT OF SPACE

LOK SABHA

UNSTARRED QUESTION NO. 5561

TO BE ANSWERED ON WEDNESDAY, APRIL 06, 2022

DEVELOPMENT OF ADR FOR SPACE DEBRIS

5561. SHRI BRIJBHUSHAN SHARAN SINGH:
SHRI VISHNU DAYAL RAM:
SHRI ANIL FIROJIYA:

Will the PRIME MINISTER be pleased to state:

(a) whether the Government has proposed/taken steps for development of active removal technologies as Active Debris Removal (ADR) is necessary to stabilize the development of space debris;

(b) if so, the details thereof and if not, the reasons therefor;

(c) whether there is any data showing the amount of Indian space debris (space junk, space pollution, space waste or space garbage) in the Earth's orbit;

(d) if so, the details thereof;

(e) whether ISRO is planning to collaborate with other international spac organizations to help clean up space debris; and

(f) 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. ISRO is aware that development of active removal technologies as Active Debris Removal (ADR) is necessary to stabilize the development of space debris and ISRO has taken necessary steps to proceed with ADR studies.

(b) As per the studies made by Inter Agency Space Debris Co-ordination committee (IADC), ADR is necessary to stabilise the growth of Debris. ISRO is a member agency in IADC and ISRO team actively participates in these studies. Presently ISRO has taken up research activities to study the feasibility and technologies required to undertake active debris removal (ADR). Active Debris Removal (ADR) is one of the active methods suggested by Space Debris Research Community to contain the growth of Space Debris Objects. ADR is a very complex technology and involves policy and legal issues. Technology demonstration studies have been taken up by many countries including India. Developmental studies for finalising necessary technologies are initiated to demonstrate ADR.

(c) Yes, Sir. Statistics are available regarding Indian Space Objects including Debris. ISRO has released Indian Space Situational Awareness Report containing the details of Indian Space Objects.

(d) As per latest statistics (Orbital Debris Quarterly News December 2021), there are 102 Indian spacecraft including active and defunct satellites, 116 space debris objects including rocket bodies. Hence a total of 218 orbiting the Earth identified as Indian space objects.

(e) ISRO has been coordinating and collaborating with International Space Organisations in dealing with the space debris issues and efforts has been made to contain the growth of the space debris environment.

(f) ISRO has setup a Directorate (Directorate of Space Situational Awareness and Management at ISRO HQ) to deal with Space Debris related issues. A dedicated Space Situational Awareness Control Centre is set up in Bengaluru to coordinate all space debris related activities in ISRO and to safeguard Indian operational space assets from collision threats. ISRO is also planning to have its own observational facilities to track and catalogue the space objects.

ISRO actively participates in all international efforts to contain the space debris growth for the long term sustainability of outer space. ISRO is an active member of Inter Agency Space Debris Coordination Committee (IADC), IAF space debris working group, IAA Space Traffic Management Working Group, ISO space debris working group and UNCOPUOS long term sustainability Working Group, all international organisations contributing to the space debris studies and Space Situational Awareness (SSA). ISRO is collaborating with other space agencies like NASA, ESA, CNES, JAXA and SSAU in Space Debris Studies and issues.

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