GOVERNMENT OF INDIA

DEPARTMENT OF SPACE

RAJYA SABHA

UNSTARRED QUESTION NO. 1405

TO BE ANSWERED ON THURSDAY, DECEMBER 11, 2025

PHYSICAL DATA CENTRES

1405. SHRI KARTIKEYA SHARMA:

Will the PRIME MINISTER be pleased to state:

(a) whether the Indian Space Research Organisaiton (ISRO) is examining the feasibility of establishing physical data centres in space for on-orbit processing and storage of satellite and communication data;
(b) the technical evaluations undertaken, so far, regarding power systems, thermal management and maintenance of such facilities;
(c) the research institutions and private entities associated with these preliminary studies; and
(d) the potential applications of space based data centres for national security, earth observation, communication networks and disaster response?

ANSWER

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

(DR. JITENDRA SINGH):

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(a) ISRO is engaged in the study of various next generation satellite technologies that also include on-board data processing and data storage.
(b) The preliminary evaluations indicate that developing a proof of concept on edge computing infrastructure in space is feasible and such a system is being conceived. However, a full-fledged edge computing infrastructure to become a reality, breakthrough development in several areas including in-orbit power generation, radiation hardened GPUs/ CPUs, security shield for orbiting satellites, etc need to be pursued.
(c) As the study was preliminary, it was carried out within the department.
(d) The Satellites equipped with on-board data processing would enable transmission of only the required information to the ground, hence reducing latency for time critical application such as Disaster management and strategic applications. Further, on-board processing enables flexibility for communication satellites, as the satellite can be reconfigured in-orbit.

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