

IS40M

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In news– The Union Minister of State (Independent Charge) Science & Technology has recently inaugurated the ISRO System for Safe and Sustainable Operation (IS40M) at the Indian Space Research Organisation (ISRO) Control Centre in Bengaluru.

What is IS40M?

- IS40M is ISRO's **holistic approach to ensure the safety of India's space assets and thus, sustains the utilization of outer space for national development.**
- **It undertakes observation and monitoring of space objects and space environment, processing the observations for orbit determination,** object characterization and cataloging, analysis of space environment evolution, risk assessment and mitigation, and, data exchange and collaboration.
- The system **safeguards all Indian Space assets by mitigating the collisional threats from space objects** through specific orbit maneuvers and complying to international guidelines on post mission disposal and satellite's end-of-life operations.
- The control centre would **facilitate the intensified activities foreseen for Space Situational Awareness & Management (SSAM).**
- It would host a range of activities pertaining to **protection of Indian Space assets from inactive satellites, pieces of orbiting objects,** near earth asteroids and adverse space weather conditions.
- It would **assimilate the tracking data of inactive satellites** from indigenous observation facilities and generate useful information from bare observations through analysis.
- For sustainable use of space, the control centre would **enable research activities pertaining to active debris**

removal, space debris modelling and mitigation, ISRO said.

- Vision of IS40M towards space weather services and planetary defence initiatives are also to be important areas of Space Situational Awareness (SSA).
- **This multi-domain awareness platform will bring prompt, accurate and efficient information on on-orbit collision, fragmentation,** atmospheric re-entry risk, space-based strategic information, hazardous asteroids and space weather forecast.

ISRO's project NETRA-

- NETRA(Network for Space Objects, Tracking, and Analysis) project is early warning system to secure its satellites and other assets in space.
- ISRO plans to put up many observational facilities: connected radars, telescopes; data processing units and a control centre.
- They can, among others, spot, track and catalogue objects as small as 10 cm, up to a range of 3,400 km and equal to a space orbit of around 2,000 km.
- NETRA effort would make India a part of international efforts towards tracking, warning about and mitigating space debris.
- NETRA's eventual goal is to capture the GEO, or geostationary orbit, scene at 36,000 km where communication satellites operate.