

Space Junk refers to the junk from the mass of defunct, artificially created object or natural debris in Solar System, especially around Earth's orbit, which revolves at around 20,000 km/hr

→ Recently, Japan is planning to build wooden satellite in the purview of problem of Space Junk

→ Merely, launching of satellite isn't responsible for increasing Space Debris, the existing unfunctional satellite & other artificial or natural debris collide with Active expensive satellite & make it also junk.

### Consequence of Space Junk:

- A sand grain sized of junk can be proved hazardous to ISS (International Space Station) or satellite.
- It can puncture Astronaut Spacesuit, blast a hole in Spaceship, crack any part of ISS's solar panel, fibres, other equipment
- In 2009, above Siberia a non-functional satellite of USSR collided with ~~with~~ an active satellite of US resulting creation of thousands of more debris
- It can disturb the study of Astronomy, because the study is majorly dependent on the light that comes from different galactic bodies & debris debarred it.

It is also dangerous to the Human Space Mission & Space Tourism

### Mitigation :

- Old & unfunctional satellite are now starting to be returned to Earth.
- Putting Shield on Spaceship & Space Station so it cannot be affected by collision of junk.
- Use of Reusable Launch Vehicle, so that a single rocket can be used multiple times to place satellite in orbit.
- Using such a technique that, after the completion of tenure of satellite it must be thrown out of Earth's influence by giving it Escape Velocity.
- Various Space Agency Initiative :-
  - e. Deorbit Mission & ClearSpace1 mission of European Space Agency
  - Mission Shakti of ISRO, in which it ~~to~~ uses Anti-satellite missile to destroy it so debris fall on Earth, but this mission is criticized by US.
  - Recent Japan plan to build Wooden Satellite
  - Remove Debris Mission of Surrey Space Centre, UK

Space Debris are a point of concern due to their large momentum despite their small size. They must be reduced in coming days so as to keep other satellite, ISS functional & for space exploration studies.